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Smart governance: understanding the motivations of Dutch local governments to engage in smart governance initiatives

Msc. Thesis – Final report

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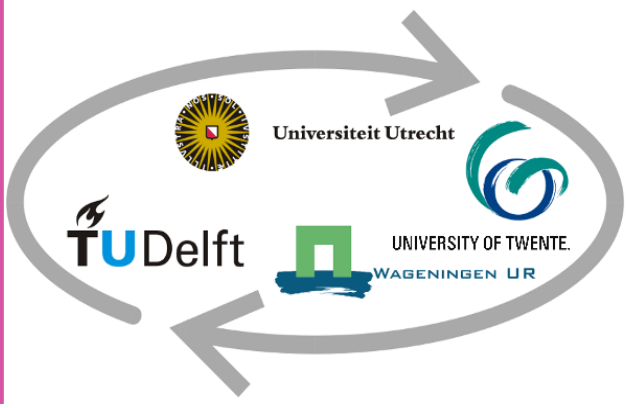

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ACKNOWLEDGEMENTS

This thesis has been written as part of the master Geographical Information Management and Applications and is titled "Smart governance: understanding the motivations of Dutch local governments to engage in smart governance initiatives". Smart governance, a concept that is relatively new and therefore highly interesting to research.

From September on, I have been working on this thesis and I am writing this passage now, as a final part of this thesis, I am thinking about the amounts of time put in this document and the amount of words written throughout the last couple of months. Completing this research would not have been possible without the help of many people, who I would like to thank. First, I would like to express my gratitude towards my supervisor Stan Geertman for guiding me and providing me with valuable information, resources and feedback during this process.

Since this research focused on motivations of Dutch municipalities, I would also not have been able to finish my thesis without the help of the interview candidates. Therefore, I would like to thank the respondents for their willingness to help me and their valuable information they have provided me with.

I would also like to thank my partner, family and friends for their constant support and motivation throughout this process, and for their help and providing me with feedback and advice.

Last but not least, I hope reading this study will provide you with some useful insights.

Julie Houba

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SUMMARY

Cities all over the world are rising with fast growing globalisation, and as a result, cities are more and more faced with economic, social and environmental challenges nowadays. Information and communication technologies (ICTs) could be used to help cope with these issues. The label 'smart city' could, therefore, include intelligent solutions that allow modern cities to create improvements in productivity. Meijer and Bolivar (2016) emphasize that governance is central in smart city practices and that the use of ICTs alone will not be enough to be categorized as a smart city. This is interesting since cities nowadays are more aware of the concept of a "smart city" and are eager to engage in the goal of becoming a "smart" city themselves (Bolivar, 2015). In the process of becoming a smart city, however, cities encounter challenges that surpass the capacities, capabilities, and reaches of the existing traditional institutions and city governments

There is, however, not simply one route to becoming smart, and different cities adopt various governance approaches (Bolivar, 2015). It, therefore, becomes interesting to take a closer look at local smart city governance agendas and their ways of practicing smart governance. What kind of smart governance projects do these local governments initiate and what are their motivations behind it? The main objective of this research is to give an overview of smart governance practices in Dutch local governments, including ways to involve inhabitants in these initiatives.

> *'What are motivations of Dutch municipalities for engaging in smart governance initiatives, and in what ways are citizens involved therein?'*

The sub-questions of this research are focused on recent smart governance projects in the direction of citizens, the motivations of different municipalities for engaging in smart governance projects in the first place and ways to involve citizens in such initiatives. The chosen method of this study is qualitative of nature. In total, ten semi-structured interviews are held with municipalities that vary in population sizes. Apart from bigger municipalities in the Netherlands, medium-sized local governments are thus also included in this thesis.

This research finds that a city's profile is dependant to the sort of smart initiatives this city would initiate. This profile of a municipality is based on local contexts and histories of cities. On the basis of this profile, certain goals or motivations could be created where future projects should be related to. This means that municipalities have different motivations for practicing smart governance at all, let alone focus on the direction with inhabitants. Municipalities that did initiate smart governance projects in this direction are the municipalities of Breda, Hilversum, Rotterdam and Utrecht. Uncertainties and risks within smart governance projects appeared to be of influence to municipalities' motivations to engage in smart governance. In other words, levels in which governmental bodies can cope with these challenges, are determinative for their motivations to actually employ projects in this area. Moreover, the population size of municipalities seems to be important to the level of smart governance matureness of municipalities. Lastly, ways to involve citizens in smart governance practices seem to be depending on the form and procedure of participation, where citizens' willingness to participate is also based on, as well as their personal characteristics, their view towards or trust in government, the presence of a certain driver and an evaluation of perceived costs and benefits. When governments want to involve citizens in decision-making processes, it is important to consider, as well as cope with these factors.

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1. INTRODUCTION

Due to globalization, city-regions all over the globe have been rising in the last decades. With these growing world cities, more challenges arise that are related to urban agglomerations (Caragliu et al., 2011). Globalization and the rise of cities together with the fast development and diffusion of information and communication technologies (ICTs) are considered to eliminate borders (Coe, Paquet & Roy, 2001). Nowadays, the use of such ICTs and other data are often viewed to solve city's economic, social and environmental problems with help of creativity, human capital and cooperation among stakeholders (Caragliu et al., 2011). In other words, the urgency around these worldwide challenges is triggering many cities around the world to search for intelligent ways to cope with these issues (Chourabi et al., 2012). The label 'smart city' should thus include the intelligent solutions that allow modern cities to create improvements in productivity (Caragliu et al., 2011).

1.1 PROBLEM STATEMENT

What exactly is a smart city? The concept behind it has been introduced as a key instrument to surround modernized urban production factors in a common framework, mostly using ICTs to boost the competitiveness of cities (Caragliu et al., 2011). Although officially there is no precise definition of it, literature has shown a number of important aspects that smart cities have. Hollands (2008), for instance, identifies four different meanings to a smart city, being 1) the application of a broad range of digital utilizations to cities, 2) the use of IT to transform life and work in a certain region, 3) entrenched ICTs in a city and 4) spatial territories which bring people and ICTs together in order to improve innovation, knowledge and problem-solving.

Griffinger et al. (2007) pinpoint that a smart city can involve smart economy, smart mobility, smart environment, smart people, smart living and lastly, smart governance (Giffinger et al., 2007 in Nam & Pardo, 2011). These dimensions are based on studies of regional competitiveness, transport and ICT economies, natural resources, human and social capital, quality of life and participation of citizens in the governance of cities (Lombardi et al., 2012). It could be argued that these factors together form the basic principles of sustainable communities (Marsden, 2008 in Bolivar, 2015). Meijer and Bolivar (2016) emphasize that governance is central to all of the factors listed above and that the use of ICTs alone will not be enough to be categorized as a smart city.

This is interesting since cities nowadays are more aware of the concept of a "smart city" and are eager to engage in the goal of becoming a "smart" city themselves (Bolivar, 2015). In the process of becoming a smart city, however, cities encounter challenges that surpass the capacities, capabilities, and reaches of the existing traditional institutions and city governments (Bolivar, 2015). Bolivar (2015) for that reason states that smart cities should ensure better decision-making, increase citizens' involvement in government and enhance democracy. Scholl et al. (2009) even view stakeholder relations as one of the most important governance success- or failure factors in e-government initiatives (Alawadhi et al., 2012). Another challenge regarding smart cities is the term itself. It namely has become a hype to use the term for place marketing purposes, instead of actually referring to evidences of ICT policies (Hollands, 2008). What city would not want to be seen as smart, cultural and creative?

There is, however, not simply one route to becoming smart, and different cities adopt various governance approaches (Bolivar, 2015). It, therefore, becomes interesting to take a closer look at local smart city governance agendas and their ways of practicing smart

governance. What kind of smart governance projects do these local governments initiate and what are their motivations behind it? Since the Netherlands is presented in the top ten of nations with most e-government development and -participation (De Punt et al., 2018), there is chosen to focus on Dutch municipalities in this study. Also, De Wijs (2015) found that Dutch medium-sized municipalities are interested in smart governance. For that reason, medium-sized local governments are involved in this study apart from bigger municipalities in the Netherlands.

Besides concentrating on local governments in the Netherlands and studying their methods of politics, there will also be paid attention to their communications with local citizens. Since citizen relationships namely are considered crucial to smart governance, it becomes interesting to take a closer look at the way local governments involve their citizens to the smart governance projects they initiate. This research will thus have a twofold goal, which the next section will go into further detail about.

1.2 OBJECTIVE

The main objective of this research is to give an overview of smart governance practices in Dutch local governments, including ways to involve inhabitants in these initiatives. More precisely, this study is focusing on ways that local governments in the Netherlands digitalize their external systems, especially regarding communication with citizens. What are examples of 'smart' infrastructures that municipalities initiated and what were the motives to start realizing these (digital) infrastructures? Also, what are ways to involve citizens in smart governance projects? By doing so, this study will investigate the actual added value of the smart initiatives and can hopefully, in the end, conclude if the resources that are needed to invest in these smart governance projects do pay off, or not. Moreover, by studying local governments of different population sizes, the motivations of these different municipalities could be compared to each other to see if there are any variations in motivations and practices of these local governments. A last goal of this study will be to bridge a gap in existing literature, since there has not been much research about smart governance practices, especially towards the practical situation of the Netherlands (De Wijs, 2015; Chourabi et al., 2012).

1.3 RESEARCH QUESTIONS

In the previous paragraph, the objectives of this research are stated. To, however, conduct a study like this, one will need a suitable research question that captures all aims of the study. Therefore, the main research question of this study is:

> *'What are motivations of Dutch municipalities for engaging in smart governance initiatives, and in what ways are citizens involved therein?'*

In order to answer this research question properly, some sub-questions are also formulated:

- What kind of smart governance initiatives do Dutch municipalities apply in the direction of inhabitants?
- What are motivations of Dutch municipalities to engage in these smart governance initiatives?
- What are ways to involve citizens in (the process of initiating) smart governance projects?

These sub-question will be answered by having interviews with multiple local governments in the Netherlands. An overview of the chosen method and questions asked can be found in chapter 3 about methodology.

1.4 RELEVANCE

In this paragraph, the scientific- and practical relevance of this study will both be examined to stress the importance and purpose of this research.

1.4.1 Scientific relevance

This study is scientifically relevant for some reasons. Up until now, there has not been much research on smart governance issues (Chourabi et al., 2012). There is also little knowledge about actual usage of smart city applications in the Netherlands (De Wijs, 2015). Therefore, it seems relevant to conduct an empirical assessment on current smart governance initiatives trends of the local Dutch level. Furthermore, since there is no one-size-fits-all approach to smart governance (Meijer, 2016), it is interesting to focus on what drives various local governments to develop certain smart initiatives in a certain manner.

1.4.2 Societal relevance

The practical relevance of this study is the analysis of the potential benefits and/or drawbacks of already created smart governance initiatives. This is practically relevant since these possible benefits and/or disadvantages can either stimulate or discourage local governments to design such intelligent initiatives. Since the aim of this study is to research the relationship between smart governance with inhabitants, the profit for the inhabitants will give true insight in the real advantages or drawbacks of initiatives developed by local governments in the Netherlands.

1.4.3 Audience

This research is part of a master's program and, therefore, the audience will mainly exist of the supervisor and reviewers of the research. Additionally, it can be expected that scholars within the field of smart governance are interested in its contents. Lastly, the research may be interesting to read for local governments who are involved in topics such as smart governance, as well as smart mobility and smart cities since these are connected concepts.

1.5 LIMITATIONS

Besides the relevances, it is important to state that there are also limitations to this research. The main limitation is the time frame. Because this project will have a time frame of about six months, it is not feasible to conduct a large-scale research. Instead, it is proposed (also seen in chapter 3 about methodology) to only interview around ten municipalities in different population sizes in the Netherlands.

Some decisions have, therefore, been made regarding what is included and what is not. Firstly, the scope of this thesis is limited to the size of the larger municipalities and medium-sized local governments of the Netherlands. There is chosen to focus only on larger and medium-sized municipalities, as explained in paragraph 1.1. Smaller Dutch municipalities are thus not included in this research.

Moreover, because of the fact that most project's timespan is around multiple years, it could occur that the projects that are included in this thesis are initiated that were eventually not completed. This could of course happen for various reasons, but this risk is magnified since qualitative research generally gives a description of a momentary recording of a real situation.

1.6 READING GUIDE

This research is structured in seven chapters, with this introduction being the first. Here after, a theoretical framework will follow that introduces terms as smart city, smart governance and their concepts. Besides this, the literature review will focus on participatory governance, motivations to engage in smart governance as well as the challenges one can face, different roles a government can adopt to practice smart governance et cetera. Chapter 3 explains the methodology of this study, including an argumentation of the chosen method, a description of the research units and an operationalisation of the questions for the interviews with the respondents of this research. Next, the fourth chapter will present the main outcomes of this thesis that were based upon the held interviews with municipalities. On the basis of these results, chapter 5 will provide a discussion of the complete research and as well will provide a reflection of the overall research process. Moreover, the sub- and main question(s) will be answered in chapter 6. Lastly, chapter 7 will offer general recommendations as well as recommendations for future research in this area.

2. THEORETICAL FRAMEWORK

This chapter will contain a broad literature framework on smart governance. To begin, this chapter will give an introduction to the concept of smart cities and smart governance and its components. Moreover, this theoretical framework will focus on participatory governance in paragraph 2.2, including methods to select citizens to participate (paragraph 2.2.3) and on different roles of government in section 2.3. There will also be attention towards motivations to engage in smart governance initiatives in paragraph 2.4. This chapter will lastly end with details on the evaluation of smart governance initiatives.

2.1 COMPONENTS OF SMART CITIES AND SMART GOVERNANCE

When wanting to understand the concepts of smart cities and smart governance, one must first comprehend the idea of traditional governance. An important facet or means of governance is coordinating communications, where the overall aim is to achieve collective ambitions, through collaboration (Willke, 2007). For smart governance, Willke (2007) identifies that this type of governance can be seen as "an abbreviation for the collection of principles and factors that together establish a form of government that is able to cope with the conditions of today's society". In other words, Scholl and Alawadhi (2016) define smart governance as "the capacity of employing intelligent and adaptive acts and activities of looking after and making decisions about something" (Pereira et al., 2018).

In the definitions above, one could note that smart governance appears to be focusing on intelligent ways to cope with modern-day challenges. Smart governance can thus help in the 'smartening' of a city. With this in mind, it is perhaps not surprising that the main concept behind smart cities has got a lot of attention in the policy area in recent years (Caragliu et al., 2011). As the introduction already stressed, the definition of a smart city has first been used by van Bastelaer in 1998, though its actual meaning and context seem still somewhat confusing to many (Anthopoulos, 2015). For instance, Chourabi et al. (2012) describe the label smart city as an icon of a sustainable and liveable city, in other words; to ensure a better quality of life.

Nam and Pardo (2011), on the other hand, distinguish three key components of smart cities, namely the technology, the human aspect, and the institutions. Important to note is that the contents of smart governance, according to literature, are very similar to these components. David et al. (2015), for example name the investment in human and social capital, ICT infrastructure and participatory governance when explaining smart governance. This can be seen when looking at the definition of smart governance, given by Caraglui et al. (2011):

> *'When investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and high quality of life, with a wise management of natural resources, through participatory government.'*

Other smart governance indicators can be the number of universities and research centres in a city, e-government online availability, the percentage of households with Internet access at home and e-government use by individuals (Lombardi et al., 2012 in Albino et al., 2015). Cohen (n.d.) proposes two other indicators for smart governance, namely 1) enabling supply and demand side policy and 2) transparency and open data and (Lekamge & Marasinghe, 2013). Lopes (2017) also acknowledges the importance of e-government in smart governance. Albino et al. (2015), furthermore, conclude that e-government is crucial in bringing smart city initiatives to inhabitants and can in this way, ensure keeping the

decision and implementation process as transparent as possible. Tapscott & Agnew (1999) furthermore view e-governance as "a widespread adoption of a more community-based model of governance with greater connectivity being facilitated by new technology" (Coe et al., 2001). In short, however, e-governance could be described as the use of new mediums of communication for citizens (Lombardi et al., 2012). Besides al these indicators, this paragraph will focus on the three earlier defined components of both smart cities as well as smart governance, namely the technical aspect, the human component and, at last, the component of the institutions.

Firstly, the technology aspect emphasizes the possibilities that ICTs offer to strengthen cities (Meijer & Bolívar, 2016). Up until now, the main aim of smart city research on governance has been strongly focused on the application of ICTs in order to improve urban economies, qualities of life and other problems (Meijer et al., 2016). For instance, David et al. (2015) argue that smart governance can be conceptualized as the amount of local public spending on ICT, website availability, strategic plans to promote e-government and ICT, online public services, electronic signature, transparent governance, e-democracy and promoting ICT and innovation. However, researchers also acknowledge that ICTs do not automatically create a smart city. The technology component must, therefore, work as a facilitator creating a new type of communicative environment, that demands comprehensive and balanced development of creativity, innovation-oriented institutions (Albino et al., 2015). Bolivar and Meijer (2016), furthermore, stress that smart governance is not only based on smart ICTs, but also on smart external collaboration and participation, smart internal coordination, smart decision-making processes, smart e-administration, and smart outcomes. Pereira et al. (2018) follow this statement by explaining that smart city governance is becoming more and more about the role of the city's inhabitants in collaborative decision-making.

The human component, secondly, refers to the capacity of intelligent people which create clever solutions to urban problems (Albino et al., 2015). It consists of several aspects like affinity to lifelong learning, social and ethnic plurality, flexibility, creativity, cosmopolitanism, open-mindedness, and participation in public life (Nam & Pardo, 2011). These concepts show that for some, smart governance is more of a social change rather than a technological one (Bolivar & Meijer, 2016). A smart focus on humans is perhaps not surprising, since smart city governance is concerned with citizens, communities and businesses, in order to inspire development and innovations (Nam & Pardo, 2011). Moreover, Bolivar and Meijer (2016) find that many respondents believe the main goal that smart governance tries to achieve is social inclusion, interaction with citizens and highly educated citizens. Marrocu and Paci (2011) acknowledge that a "highly educated, innovate, open and culturally diverse environment is becoming more and more central for productivity enhancements" (Jessen, 2015). The basic idea of this human approach towards smart governance is that, by providing ICTs, citizens can be provided with new services as well as information that allows them to influence their city (Lee et al., 2013 in Jessen, 2015). The need for ICTs in characterizing smart governance is thus still considered (Bolivar & Meijer, 2016). Furthermore, Azzari et al. (2018) conclude that smart cities can govern with a linking between big data infrastructures, people and physical spaces.

The institutional component, lastly, focuses on governance and policy. Smart governance includes stakeholders engaging in decision-making and public services (Albino et al., 2015). Albino et al. (2015) moreover argue the notion that several stakeholders are involved in both decision-making and public services. Furthermore, it appears that the policy-context is relevant to understanding smart city initiatives. For example, the

political components of a government, such as the form of a city government, mayor-council, and council-manager type, and the relationships among key stakeholders such as the mayor, council and other related organizations are important to consider. Moreover, it is necessary to take institutional components, like the law and other regulations and intergovernmental agreements into account (Chourabi et al., 2012).

Testoni and Boeri (2015), however, argue that in order to control the dynamics of smart cities, a new model of governance is necessary together with strong coordination by local governments in order to guide co-operation processes with several stakeholders, especially inhabitants (Pereira et al., 2018). This paragraph has introduced several authors who identify different main components of smart cities and smart governance. The authors agree on the importance of smart governance for smart city initiatives; these could not exist without clear governance. The next paragraph will help explain the importance, as well as the added value of participatory governance to smart governance.

2.2 PARTICIPATORY GOVERNANCE

To explain why collaboration between government and public is so important, it is necessary to understand the concept of participatory government (Pereira et al., 2018). This, because smart cities are political organizations where their success partially depends on the success in discussing the political challenges their city faces (David et al., 2015). In the most ideal situation, this would require a system where the public is encouraged to participate. This situation is idealized, since the belief is that citizen involvement will produce more public-preference policy-making on the part of administrators as well as a better appreciation of the larger community on the basis of the public (Stivers, 1990 in Irvin & Stansbury, 2004). Irvin and Stansbury (2004) moreover emphasize that improved citizen participation could prevent the deterioration of public trust in modern-day societies, and that citizen involvement intends to produce better decision outcomes, and thus more efficiency benefits to the rest of societies.

Lekamge and Marasinghe (2013), moreover, stress the importance of citizen's involvement in defining a city's vision. The spirit of e-government should thus be focused on citizens-driven communications (Albino et al., 2015). This is also referred to as the citizen-centricity movement, which puts citizens as the center of attention to create customer-driven services. Citizens are here not primarily seen as end-users of a service, but also as partners in the co-production of public services (Pereira et al., 2018). Moreover, because of this increased focus on citizens, a stronger citizen engagement based on participation, collaboration and community strengthening can be created. An advantage of this new approach can thus cause greater transparency on the government (Bertot et al., 2010 in Pereira et al., 2018). Figure 2.1 shows an example of systems where citizens are seen as equally important stakeholders, and where, besides the government and citizens, commercial parties as well as universities could also be in.

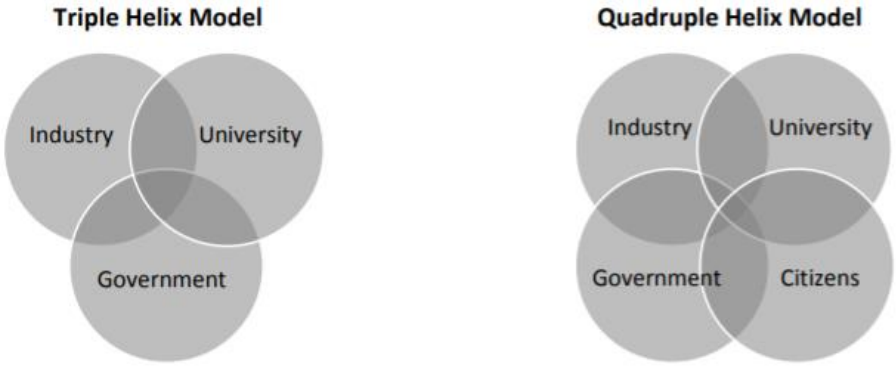

Figure 2.1: The triple helix model and quadruple helix model (Jessen, 2015)

The level of public participation, however, depends on the on various elements that either limit or stimulate the way citizens are involved in local politics, like education, social status and civil experience (Verba et al., 1995 in David et al., 2015). Although Arnstein's (1969) ladder of citizen participation was published half a decade ago, it is still well-received by scholars because of its good insight into the relationship between citizen participation in public decision-making and the redistribution of power (Lim et al., 2018). The ladder, presented in figure 2.2, is used as a metaphor for increasing access to decision-making power of citizens.

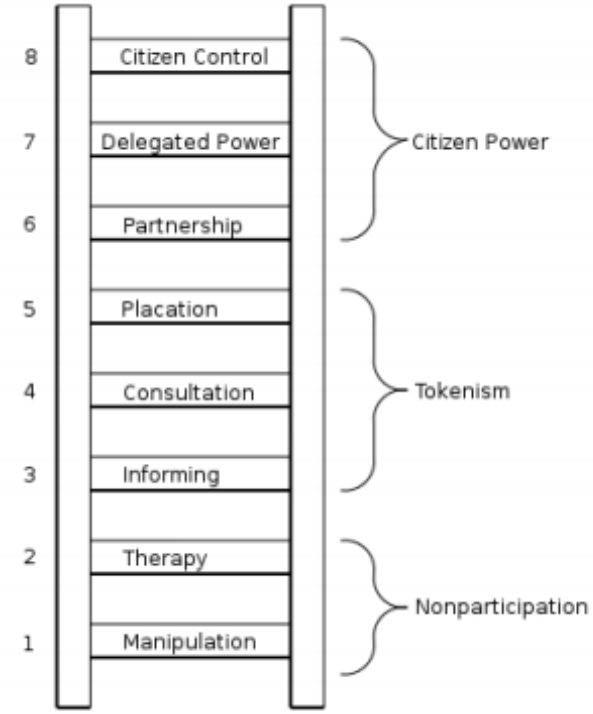

Figure 2.2: Arnstein's ladder of citizen participation (Lim et al., 2018)

The ladder of participation shows eight sub-levels of participation, that belong to three umbrella categories. The bottom sub-levels are manipulation and therapy, which represent situations where people are not enabled to participate in planning or conducting programs, but enable the ones in power to 'educate' or 'cure' the participants (Arnstein, 1969). Citizens, in these phases, are thus not able to influence the policy-making processes.

The following category on the ladder is tokenism; which also is the highest and most common form of participation in the majority of current smart city projects (Willems et

al., 2017 in Lim et al., 2018). To tokenism belong the steps of informing, consultation and placation, where the degree of communication is the main difference between them. Informing, for example, can be seen as only one-way communication, from officials to citizens (Arnstein, 1969). The most frequently used tools in this one-way communication phase are the news media, pamphlets, posters as well as responses to inquiries. Within consultation, the citizens are asked for their opinions and wishes regarding decision-making. Examples of consultation methods are surveys, neighbourhood meetings and public hearings (Arnstein, 1969).

The informing and consultation steps allow the have-nots (residents) to hear and to have a voice within the decision-making process. From the placation level on, the citizens begin to gain actual influence, however, without clear rules or guidelines. The lack of these rules is convenient for the officials as it is easier for them to keep control. An example given by Arnstein (1969) of placation is planning committees.

The last umbrella category, citizen power, consists again of three levels: partnership, delegated power and citizen control. Within partnership, the responsibilities of a governmental project are shared between the officials and citizens. Examples of constructs that make partnership possible are policy boards and policy committees. The delegated power step indicates even more power for the citizens, as they are able to influence the decision-making within this step. In other words, officials are forced to bargain with the citizens. The last step, citizen control, indicates that citizens have full control over a policy or a plan. The citizens are fully empowered, meaning for example that they are in control over the planning and budget of the project (Arnstein, 1969).

This paragraph has explained the importance citizen participation, including different forms where this can occur. The following section will focus on citizen's own willingness to participate,

2.2.1 Matters of influence on peoples willingness to participate

To make participation work, strong motivations are necessary. These can occur on the basis of personal consideration between expected costs and benefits (paragraph 2.2.1.1) and/or on the basis of social psychological aspects (paragraph 2.2.1.2).

2.2.1.1 Cost-benefit analysis of citizen engagement

People's motivation to engage in citizen participation can be studied on the basis of models based on pure self-interest as well as expected values. Such self-interest models stress that when participation either provides some sort of individual benefit or will imply low energy, citizens' willingness to participate will increase (Antonini et al, 2015). On the other hand, expectancy-value models, argue that a person's motivation to participate is a consequence of the value of the outcomes that were expected beforehand. These models go hand-in-hand with a specific cost-benefit model as proposed by Olson (1965) (Mannarini et al., 2010). This cost-benefit analysis namely explains individual motivations for collective action, viewing the choice to act collectively as the result of a rational evaluation of disadvantages and benefits (Mannarini et al., 2010). Costs can, for instance, include the level of energy, economic loss, time consumption, physical risks, social isolation and stigma. On the other hand, benefits could refer to not only material advantages, but also psychological and social benefits (Mannarini et al., 2010). These so called social benefits can involve satisfaction, social status rewards and a sense of belonging. Stürmer and Simon (2004) conclude that this sense of belonging can be seen as the main motivational factor for participation (Mannarini et al., 2010). In this regard, one could say that citizen involvement in politics may not be solely ascribed to the role of costs

and expected benefits of citizen's participation, and that there may be other variables that could also influence the willingness to participate in decision-making.

2.2.1.2 A social psychological perspective on citizen participation

As the previous paragraph described, there exist several variables that influence people's desire to participate in decision-making, and thus why some individuals are more willing to do so than others. For instance, the personal characteristics of citizens can be of influence on this matter. Zani and Barrett (2012) for instance found that men and women often have a different focus when it comes to political involvement, where men are more likely to be interested in economics and women are more likely to be involved in social and environmental issues.

Pavlova and Silbereisen (2015) stress that individuals typically have more negative attitudes towards political participation, and are therefore less willing to get politically involved. Politics are simply, often seen as a messy, hypocritical thing (Theiss-Morse & Hibbing, 2005 in Pavlova & Silbereisen, 2015). More specifically, Fowler and Kam (2007) argue that one reason for little participation in governmental decision-making is that citizens frequently feel that their opinion will not be heard, and participating will provoke no changes within the government (Antonini et al., 2015). In other words, the (dis)trust in governmental institutions can also be seen as a variable towards willingness to participate (Mannarini et al., 2010). Mannarini et al. (2010) therefore state that citizen participation can only be realised on the basis of reciprocal trust between citizens and institutions.

Besides these other factors, psychological variables can be considered to be predictors of political involvement and citizen participation. For instance, Bronfenbrenner (1979) show that the perceived effectiveness of specific forms of political action is a significant predictor of an individual's willingness to undertake that type of action (Zani & Barrett, 2012). Moreover, the perceived self-efficacy the degree to which individuals believe they have the capabilities to achieve the desired goals (Zimmerman, 1995 in Gonçalves et al., 2014). Efficacy beliefs, here influences the way people feel, think, motivate themselves and behave (Bandura, 1992 in Gonçalves et al., 2014).

Another psychosocial variable that influences the degree of citizen participation is the sense of belonging to a specific social group or community (Zani & Barrett, 2012). Brondi et al. (2012) concluded that the Italian youth that participated in their research have a strong sense of belonging or identification to a neighbourhood and that their activism was related to their social integration and social contribution (Zani & Barrett, 2012). Moreover, this study found that these youngsters wanted to be involved in discussions of solutions to environmental problems, pinpointing the need for local organisations to give these young people the opportunity to express their views on local community issues (Zani & Barrett, 2012). This is a form of causal importance: the degree to which an individual believes they exert influence through their actions (Gonçalves et al., 2014).

2.2.2 Challenges in citizen participation

Despite the opportunities for citizen participation, governments have to take certain challenges into account. For instance, Overbeeke (2016) argues that governments could do better in handling the provision of information towards citizens. It appears that information, provided by governments, is often viewed inadequate or unusable for inhabitants; the documents are either way too long and/or their contents, as well as the way multiple documents relate to each other, are seen as incomprehensible.

One of the most important challenges to citizen involvement, does not relate to the process of the participation itself, but rather on the eventual impact of it (Overbeeke, 2016). A threat towards citizen involvement, namely, is that the input of citizens is hardly found back in the final policy. Participants of a study on citizen participation by Abelson et al. (2004), therefore, name the importance of accountability of power holders: "*People need to really believe that their input is wanted and is going to be needed, [and] not abused. To achieve this, the key word now is accountability, expressed in calls for more transparent links between the input provided and the final decision outcomes*". Overbeeke (2016) gives a reason for the difference of input of inhabitants and the final decision outcomes. Apparently, this mismatch is often not caused by the fact that governments don't want to listen to citizens, but for instance, because of the fact that citizen's input is not always practically feasible (Overbeeke, 2016). Yang and Pandey (2011) however argue that many public managers do not trust their inhabitants in participating effectively in terms of their competence. They give an example that says that 77 percent of presidential appointees as well as 81 percent of senior civil servants in the United States of America do not believe that American civilians know enough about issues to form wise opinions (Bok, 2001 in Yang & Pandey, 2011).

Despite the underlying reasons, mismatches between input and final decision outcomes could lead towards disappointment to the involved citizens. Participants in the study of Abelson et al. (2004) were, however, realistic about what they could expect in terms of their input directly influencing policy decisions, but were resolute about the need for policy-makers to make clear, at the beginning of the process, why their input is sought and how their input is planned to be used in the decision-making process (Abelson et al., 2004). Meeting such condition, nonetheless, is no small task. It requires better understanding of what can be seen as credible and honest information, and can thus be seen as a challenge in citizen participation.

2.2.3 Involving citizens to participate in decision-making processes

When governments decide to involve citizens in the policy-making process, the public body can either choose to select the group of citizens themselves, or they can let their civilians choose if they want to participate or not (Overbeeke, 2016). When governments want to select a group of civilians themselves, they can choose to select citizens that, together, will represent a representative reflection of society. When public bodies want to achieve such representation of the 'real' situation, it is important that civilians will be selected on the basis of sampling (Overbeeke, 2016). A reason why one would want a group of inhabitants that is as diverse as the whole society, is because this leads to optimal results based on a spectrum of perspectives and opinions (Overbeeke, 2016).

Representativeness in citizen participation, is, however, a fundamental concern, since most of the time in participation, the same handful of people choose to participate (Yang & Pandey, 2011). This, for instance, could be because people must be interested in the particular topic enough to want to participate (CBS, 2017). On the other hand, if one wants to involve only those citizens that are highly competent to do so, then chances are low to get a representative group. The reason behind this is that, generally speaking, highly competent citizens tend to be more educated and wealthier (Verba et al., 1993 in Yang & Pandey, 2011). In this light, representativeness of citizen groups would mean, also involving those that are more neutral or disinterested in politics. Lezaun and Soneryd (2007) pinpoint the paradox to this approach:

> *"The prioritization of the 'silent majority' of unengaged citizens over active 'stakeholders' gives rise to a curious form of politics; one in which the individuals seem to abstain from participation in political life, become the most highly valued constituency in what is allegedly an attempt to broaden political participation* (Lezaun & Soneryd, 2007 in Powell et al., 2011)".

There are, however, more methods to select citizens in citizen participation. A second possible selection method is to involve only those that are most directly involved in the proposed policy (Overbeeke, 2016). An advantage of this method is, following CBS (2017), is that people that fall within this group are more likely to participate, since they have a personal motivation for it. Moreover, following Irvin and Stansbury (2004), an alternative model of participation could be used, where citizens are randomly selected from the population. As a last option for involving inhabitants, a group could be created on the basis of civilians that have participated previously.

The 'best' selecting method, however, is dependent on the subject that has to be discussed. For instance, when lots of technical knowledge is required, it is useful to involve those with such particular skillset. On the other hand, when several viewpoints of a certain topic will be discussed, it would be recommended to select a group of civilians that is as diverse as possible (Overbeeke, 2016).

After selecting the group of participants, governments have to think about the part of the overall subject, for which the input of civilians is desired. Social media platforms like Facebook and Twitter has enabled citizens to participate in ways that would have been unthinkable a few decades ago (Zani & Barrett, 2012). Reddick and Anthopoulus (2014) thereby state that new digital media sources (e.g. social media, mobile applications, and text messages) are more often used in contacting governments recently (Hartmann et al., 2017). Moreover, certain smart cities have created specific platforms where inhabitants can give their opinions, on for instance budgeting or other types of decision-making (David et al., 2015). This shows that technology is expected to facilitate also in political systems.

Eventually, a more citizen-centricity approach and improved collaboration with governments could lead to a model of smart government where the collaboration exceeds service improvement and delivery as well as into areas of decision-making, openness, expanded societal issues and expanded stakeholder networks (Pereira et al., 2018). However, this could raise questions on how municipalities can meet the expectations and demand of their customers for example in transforming business models and information infrastructures (Kuk & Janssen, 2011). Sharma and Gupta (2003) even argue that planning the shift towards e-government is the most important challenge that governments nowadays have to face (Kuk & Janssen, 2011). Governments, nevertheless will have to make choices that involve the type of involvement desirable, the way of selecting citizens and the type of platform that will be used to facilitate the participation of citizens. Other examples of choices, or certain roles of governments that governments can choose from when practicing smart governance are given in paragraph 2.3.

2.3 ROLES OF SMART CITY GOVERNMENT AND A MODEL FOR SG

In the previous paragraph, it was argued that governances can link ICTs and other governmental resources in smart governance. Governments of smart cities are context-bound and can thus choose their own path of governance. Likewise, governances of smart cities can also adopt their own role of government to practice smart governance. This section will give attention to these varying roles of governments, as well as implementation strategies for the realization of smart governance and government

capabilities to implement services digitally.

There are several phases in the so-called smartening of a city. These are the government of a smart city, smart decision-making, smart administration and smart urban collaboration (Meijer & Bolivar, 2016). These forms vary in their ideas about the need for government renewal. While conservative conceptions about this only recommend existing organizational plans, more progressive conceptions propose the government itself to be renewed in order to create a smart city (Meijer & Bolivar, 2016). The first phase, the government of a smart city thus suggests no need for renewal of government processes and structures. Instead, smart governance is viewed as just making the right choices in policies and implementing these in an efficient way. Smart decision-making, secondly, also give more priority to the process of collecting all kinds of data and information concerning local management, rather than completely transforming the structures of its own government (Meijer & Bolivar, 2016). The third level of government conceptualization, smart administration, stresses that a smart government is a modern structure of e-governance which uses sophisticated information technologies in order to interconnect and merge processes, institutions, and physical infrastructure to help serve citizens and communities (Meijer & Bolivar, 2016). At last, smart urban collaboration refers to the most transformative level of conceptualization and emphasizes the importance of the collaboration between the multiple actors in a city (Meijer & Bolivar, 2016).

Meijer and Bolivar (2016) found in a literature study that most researchers believe that government transformation is preferable to make cities smart. However, few researchers suggest that smart governance could be simpler and should focus on finding improved methods to carry out the basic tasks of governments..

This is, however, not the case when discussing implementation strategies for realizing smart governance. The following actions in the implementation of smart governance exist: legislation, policies, the use of ICTs, having an integral vision for a smart city and collaborative governance (Bolivar & Meijer, 2016). Legislation refers to the fact that ICTs are not only important in implementing smart governance but so are issues of responsibility, openness, transparency, access to public data and other governmental regulations. Policies for promoting smart city initiatives are also seen as important to the implementation of these initiatives. The use of ICTs, furthermore, is often viewed as the first great shift in the context of smart cities, that require proper coordination so that these smart governance initiatives can be delivered successfully (Betty et al., 2012 in Bolivar & Meijer, 2016). With an integral vision of a smart city, the coordination of many different components that together form the smart city is meant (Bolivar & Meijer, 2016). This is needed to realize smart governance projects in the right way. The final strategy, collaborative governance, is of importance in implementing initiatives because with greater connectivity between departments and with communities, new services could be developed with the help of new technologies (Tapscott & Agnew, 1999 in Bolivar & Meijer, 2016). All in all, these implementation strategies could be categorized into ideas and actions (Bolivar & Meijer, 2016). The main idea is an integral vision of a city, which will need legal, technological, policy and collaborative actions. This leads to the conclusion that smart cities cannot simply choose only one implementation strategy that will lead to successful smart initiatives, but instead, have to adopt all these strategies for that cause (Bolivar & Meijer, 2016).

2.4 MOTIVATIONS TO ENGAGE IN SMART GOVERNANCE

This section will provide some motives for municipalities and public servants that initiate smart governance projects. There must, however, be stated that the motivations for engaging in smart governance initiatives are depending on the cultural, social, political, organizational and technological context of cities (Lopes, 2017). Though cities around the world will, to a certain degree, face the same problems, social inclusion may be a more relevant topic for city X than for city Y, for example because city X knows a more divided population. Kourtit et al. (2012) emphasizes this by saying that smart city practices should fit within historically grown path dependencies (Meijer & Bolivar, 2016). On the other hand, the aim of a city can depend on what the city's inhabitants find important (Meijer and Bolivar, 2016). For this reason, it can be that some cities value sustainability more, and other cities will rank mobility as more important. It, therefore, is not possible to propose a solution for smart initiative design that suits all cities properly. Since motivations can thus vary, possible benefits, drawbacks, and challenges of smart governance initiatives are proposed in this paragraph.

Smart governance initiatives can, firstly, be started to provide transparency to governmental decision-making, improve accountability and foster collaboration and stakeholder participation (Scholl & Scholl, 2014). Early scientific studies on smart city initiatives have shown that besides some small differences, participation is a crucial part of these smart initiatives (Scholl & Scholl, 2014). Bolivar & Meijer (2016) name nine other possible aspired outcomes of smart governance: 1) promoting growth economic performance of cities; 2) making services truly citizen-centric; 3) using smart governance to achieve social inclusion of urban residents in public services; 4) ecological performance, in other words, the sustainable development of cities; 5) the usage of new channels for 'e-democracy'; 6) city branding; 7) more efficient government; 8) boost the number of highly educated citizens in cities and 9) the readiness for disaster management, where in emergency situations, cities will need to respond quickly (Bolivar & Meijer, 2016).

Besides these aspired outcomes, there are some other motivations for governments to e-governance. E-governance is here listed since Meijer and Bolivar (2016) stress that research into smart governance should learn from the benefits of e-governance. Table 2.1 thus shows e-governance success factors to both citizens and governments.

Benefits to citizens	Benefits to government
24/7 government service and not 9-5	Better policy-making and regulatory and development functions as a result of better and up-to-date information
Economical and conventional service (no need for a physical visit to an office)	Very fast acquisition, storage and retrieval of data leading to better decision making
Fast and efficient service	Better management of government processes
Transparent (no corruption and so-called speed money)	Better dissemination of government rules, regulations, and activities
Equitable (anyone can access it by the definition of smart people)	Better performance in regulatory functions like taxation
Convenience (can be accessed while on the move using mobile phones or at home using the computer)	Better performance in social sectors like education, health, and social security
	Creates a positive image of modern and progressive government

Table 2.1: E-governance benefits to citizens and government (Kumar, 2015)

Aside from these benefits, there are also some drawbacks towards e-governance (Misra, 2006). Firstly, e-governance is very costly; it requires investments in ICT infrastructure and manpower. Furthermore, e-governance is time-intensive to design and implement. If the implementation is done too soon, this may give unsatisfactory outcomes (Misra, 2006; Priano & Guerra, 2014). It is for these reasons that often, smart initiatives are specifically designed for a certain area or neighbourhood within a city, instead of for the entire city (Priano & Guerra, 2014). Thereby, e-government can be risky, too, since it does not have strategies to cope with failures. Also, there are always people who will not benefit from e-governance because they do not believe in new technologies and/or do not know their way towards the Internet (Misra, 2006).

Other challenges regarding smart city initiatives can be categorized as political, governmental, social and cultural, and technical challenges (Lopes, 2017). Political challenges include political efficiencies, such as the integration of government agencies and effective front and back offices. Governmental challenges, on the other hand, refer to promoting accountable and transparent governance, involving all stakeholders in a collaborative way on governance, developing smart sustainable cities as well as changing the political mindset of viewing a city as a complex problem (Lopes, 2017). Social and cultural challenges range from social inclusion to creating jobs and raising awareness of the importance of spatial data. Furthermore, technical challenges can be the level of technical complexity of the initiative, integration, and interoperability of systems and developing smooth public services (Lopes, 2017).

2.5 EVALUATING SMART GOVERNANCE INITIATIVES

It is often believed and promised that smart solutions are greatly beneficial for governments and civilians, however, these benefits are barely checked for progress (Van den Bergh et al., 2018). This is perhaps not hard to believe when it is known that most smart cities do not even have a standard definition of how the evaluation of smart city initiatives should look like (Van den Bergh et al., 2018).

To understand the evaluation process of smart initiatives, it is first important to look at the levels that exist for measuring a city's smartness. This can be seen in figure 2.3.

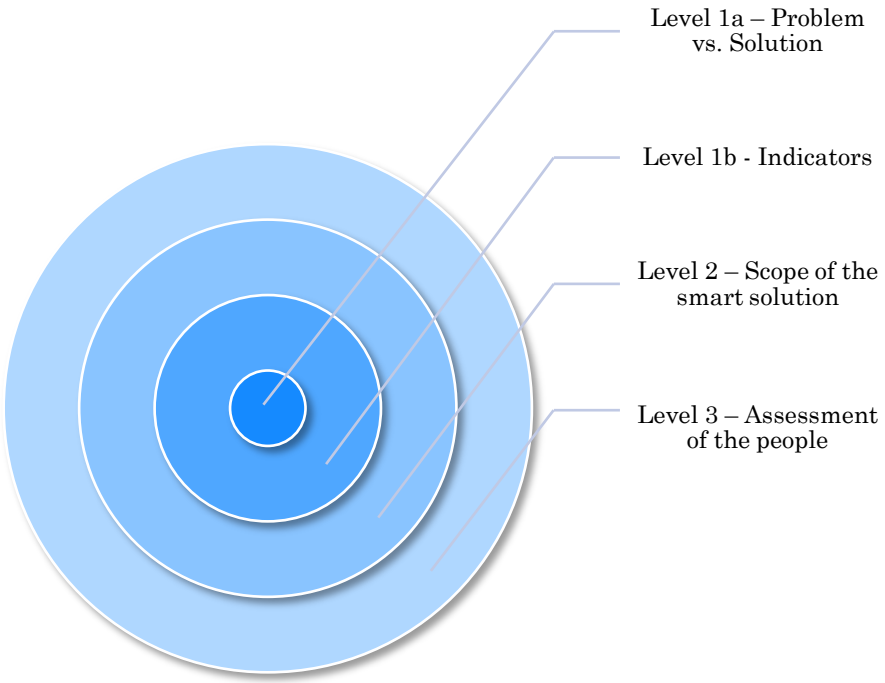

Figure 2.3: Levels for assessing a city's smartness (Priano & Guerra, 2014)

In figure 2.3, level 1a refers to the problems that each smart city should address and for which smart solutions should be proposed. In level 1b, there is attention towards the indicators that are used to access if the proposed solution for a smart issue is correct. This paragraph will also focus on different kinds of indicators for smart governance initiatives further on. However, there must be stated that not all smart problems do have indicators associated with them. Furthermore, stage 2 includes the scope of the smart solution that is living with the problem in the first place (thus the whole city or only a select neighborhood, etc.). The last level that can be seen in figure 2.3 is the third level, the assessment of the people. This stage involves the assessment of the citizens of their city's situation (Priano & Guerra, 2014).

Other researchers also acknowledge the importance of citizen assessment. For instance, Lee and Lee (2014) find that urban planners and administrators need the views and demands of citizens are needed in order to develop smart solutions (Kumar et al., 2018). To try and understand these views and needs, citizen's participation and collaborations between several stakeholders are thus important. No matter what the number of smart government projects in a city is, its residents are the best judges for the effectiveness of these initiatives (Priano & Guerra, 2014). In order to measure the user value, for instance via citizen questionnaires, the governments should work closely together with residents and other stakeholders, so that their needs can be identified and delivered faster (Kumar et al., 2018). For instance, surveys need to be properly focused and the survey's respondents ought to be well distributed and representative of the whole city (Priano & Guerra, 2014). However, it is important to note that despite the importance of citizen-centric services, the participation of residents is completely voluntary and thus depends on citizens willingness to simply participate or not (Kumar et al., 2018).

There are, nonetheless, several other methods to measure the benefits of smart governance initiatives (Lopes, 2017). The goals and targets of smart governance initiatives can, for example, be assessed in specific dashboards. Another method to evaluate projects is a technical assessment of the action plan and lastly, it is also possible

to measure the contribution for achieving the goals of the smart city project (Lopes, 2017). Criteria that can be used for measuring the impact and performance of smart governance initiatives are the way the release data affects the society, the citizens opinion, the number of jobs created, urban, human and environmental indicators and return to the economy, costs and performance, effectiveness and efficiency indicators, city indicators and compliance with objectives and at last, budget of the smart project (Lopes, 2017). In interviews, Lopes (2017) furthermore describes that an additional question was asked to respondents, which was 'Is there any other issue or lesson learned from the initiative that you wish to share?'

Other criteria for evaluating smart governance are given by Nam and Pardo (2014). In their research, they name four metrics for assessing smart governance initiatives. These are efficiency, effectiveness, transparency, and collaboration, and can be viewed from an internal (managemental) as well as external (service delivery) perspective. With efficiency, Nam and Pardo (2014) mean the ratio of maximized results while reducing inputs in order to receive high assessment standards (mostly in monetary values). The role of ICTs is important in measuring efficiency since these technologies have improved opportunities for improving both internal as well as external efficiency (Nam & Pardo, 2014). Effectiveness can also be conceptualized as internal and external effectiveness. Internal effectiveness includes if the use of the Internet helps governmental institutes improve their management, where external effectiveness refers to the question if the Internet helps governmental institutes external communications with inhabitants (Nam & Pardo, 2014). In this light, internal effectiveness is also about how smart city initiatives improve the quality of internal management in governmental institutes, while external effectiveness is about how smart city initiatives improves the quality of services that are delivered to citizens through communications (Nam & Pardo, 2014).

Furthermore, transparency can be defined as a 'means toward desirable ends that governments should strive to serve' (Harrison et al., 2012 in Nam & Pardo, 2014). Transparency can thus be used to smarten governments. When transparency is internal, all members are up-to-date about a certain issue being considered, including the direct content of deliberations (Martin, Giacomini and Singer, 2002 in Nam & Pardo, 2014). The process is thus transparent through information sharing with different departments and governmental organizations. On the other hand, external transparency implies the accessibility of information and decision-processes related to the supplying and transmitting of services (Nam & Pardo, 2014). Collaboration, lastly, is an important success-factor for smart city projects. Internal collaboration means inter-departmental and inter-agency collaboration between public bodies (Nam & Pardo, 2014). External collaboration, on the other hand, refers to agreements in governing where non-state stakeholders collaborate in a decision-making process where its goal is to make or implement public policy and/or control public programs (Ansell & Gash, 2008 in Nam & Pardo, 2014).

3. METHODOLOGY

In this chapter, the research plan for this study will be explained. At first, the research method will be explained in paragraph 3.1. Hereafter, a description of the research units will be provided in section 3.2, including the motivations behind choosing these. Paragraph 3.3, moreover, gives an overview of the topics of - and the questions asked in the interviews with municipalities. Next, section 3.4 will go into detail about the choices regarding the analyzation process of the interviews and the final paragraph will describe the reliability and validity of this research.

3.1 METHODOLOGICAL JUSTIFICATION

There is chosen to carry out a qualitative study in this research, since this type of research is better qualified to find out about various, deeper motives of local governments to engage in and create smart governance solutions. Qualitative research namely is suited to understand and interpret different kinds of behaviour (Boeije et al., 2009). This study will conduct semi-structured interviews with local Dutch governments that focus on digital smart governance solutions. In such interviews, it is possible to refrain pre-prepared questions in the process of interviewing, since the topic list is not strictly fixed on beforehand. There is considered to choose another method for interviewing, namely Q-methodology, where opinions are analysed by using a combination of qualitative and quantitative methods (Akhtar-Danesh et al., 2008). However, there is determined to conduct semi-structured interviews instead since the Q-method is criticized on reliability (Cross, 2004).

There is chosen to interview bigger municipalities in the Netherlands since these local governments are more concerned with the concept of smart cities and therefore smart governance (De Wijs et al., 2015). These local governments will, therefore, be questioned about their motivations to engage in smart city governance. Also, there will be asked for examples of smart governance initiatives the specific municipality developed, and the reasons behind this. It is however not strictly essential that the local governments engaged in a lot of smart governance projects if they argue their motives for not doing so. This, since this research is not only interested in the motivations for engaging in smart governance, but also in governments motivations for choosing not to. Besides the biggest municipalities in the Netherlands, this study will focus on medium-sized municipalities as well. Following De Wijs (2015), it namely appeared that Dutch medium-sized local governments also have ambitions regarding the theme smart governance. These governments namely benefit if their internal and external policies are designed more efficiently (De Wijs, 2015). Eventually, possible differences between the larger and medium-sized municipalities could be compared and explained. The scope of this research will be to interview around ten local governments in the Netherlands, thus of different population seizes. Because of the fact that saturation generally occurs with a minimum of ten interviews, the expectation is that this number will meet the saturation degree (Marshall et al., 2013).

3.2 DESCRIPTION OF RESEARCH UNITS

In this section, a description of the research units will be provided. It will be important to try to include the five biggest municipalities of the Netherlands to see if there are any differences between them. These municipalities are Amsterdam, Rotterdam, The Hague, Utrecht, and Eindhoven. It is expected that these local governments are more concerned with the smart governance topic than other, smaller and medium-sized municipalities in the Netherlands, as De Wijs (2015) already concluded. Therefore, it will also be interesting to at least try to include some medium-sized local governments in this study, to eventually

compare the biggest and smaller local governments' attitudes towards smart governance initiatives.

There is chosen to include five other municipalities of the Netherlands in this study. These are based on a qualitative research of De Punt et al. (2018), where eighteen Dutch municipalities were questioned about smart governance practices. In this research, the municipalities formed three categories according to their approaches to smart governance. The first category were municipalities with a focus on improving internal administrative operations, or in other words; the government of a smart city. The second category is mostly concerned with facilitating public service interaction, citizen participation and collaboration (Castelnovo et al., 2016 in De Punt et al., 2018). In this smart decision-making phase the focus is mostly on collecting all sorts of data rather than completely transforming the structures of its own government. The last category is the improvement of the smart city or smart administration, where processes., systems and institutions can interconnect. On the basis of these categories, seven municipalities were selected. Municipalities of the first category are The Hague, Tilburg and Venlo. Breda and Rotterdam are part of the second category and Amersfoort and Zwolle belong to the third category. Large cities Utrecht, Eindhoven and Amsterdam work on smart governance in all categories and therefore form a fourth category together, also called smart urban collaboration (De Punt et al., 2018).

The right contact persons of these local governments were approached by e-mail or by telephone to ask about their willingness to participate in this research. Out of the ten above proposed municipalities, three never answered or followed through on the request for an interview. These three municipalities include The Hague, Amsterdam and Zwolle, and are part of the non-response group. In response to this, the snowball method was conducted to find suitable participants for this research. In the snowball technique, new respondents are found by asking if the respondent one is interviewing knows other suitable candidates to participate. In this way, the number of respondents will spread via the network of priory selected respondents (Baarda et al., 2013). Eventually, the municipalities of Rijswijk, Delft and Hilversum were included in this research because of the usage of the snowball technique.

Lastly, based on a recommendation of the municipality of Eindhoven, an employee of the technical university of Eindhoven (TU/e) was asked several questions on the contents of a needs assessment for citizens participation. Questions for the TU Eindhoven were asked via e-mail.

3.3 OPERATIONALIZATION

In this operationalization paragraph, the main choices regarding the questions for the interviews will be elaborated upon. The topic-list for municipalities is presented Appendix A and is based upon literature. In general, municipalities are asked about their knowledge of the concept of smart governance, what smart governance initiatives they are engaged in including their motives for doing so (or not).

The first two questions are asked to introduce the topic to the respondents. It is expected that they are familiar with the concepts of smart cities and smart governance, but if they are not, there is room to explain these concepts to the respondents. The third question is chosen to see if the municipalities perceive their own city as being 'smart'. If so, a logical follow-up question would be to ask whether the city council has chosen a specific smart city strategy. In other words, what is the goal of this municipality regarding smart city policy? This is loosely based on research of Pereira et al. (2018).

The questions that follow are more focused on smart governance (initiatives). The first question is if the city council is involved in smart governance at all, including asking what kind of projects these are (question six) and if there were any projects that focused on the communications with citizens (question seven). The latter is important to answering the first sub-question of this research: *'What kind of smart governance initiatives do Dutch municipalities apply in their communication with inhabitants?'*

To investigate the motivations, objectives and aspired outcomes behind initiating the smart governance projects, question eight will be asked. This is perhaps the most important question of this research, as this is necessary to ask in order to answer both the sub- ('What are motivations of Dutch municipalities to engage in these smart governance initiatives?') as the main research question (*'What are motivations of Dutch municipalities to engage in smart governance initiatives, and what are ways to involve citizens in such initiatives?')* of this study. The last section is focusing on ambitions and frictions, following de Wijs (2015). Question thirteen is based on a study of Lopes (2017) and is asked to find out whether there were any frictions in implementing the smart governance projects. Lastly, to end the interview, the respondents are asked about their future ambitions on smart governance (initiatives). However, since the interviews are semi-structured, it was possible to deviate from this topic-list every now and then. For instance, there was attention towards ways to involve citizens in smart city (governance) projects and ways to enhance citizen participation. Since this is an important factor of smart governance, the choice was made to implement this concept further in this research.

3.4 ANALYZING THE INTERVIEWS AND SURVEYS

In this paragraph, the process of analyzing the interviews will be discussed. After the process of interviewing, all interviews will have to be transcribed. For this, as well as for the analyzation of the interviews, Microsoft Word is used. All interesting and possible relevant fragments of transcribed text were inserted in a table, where after these fragments could be coded 'openly'. The text fragments are here summarized to a relevant code in relation to the topic of this research. This is an application of so-called 'summarize coding' (Baarda et al., 2013). In the second step of the analyzing process, the openly coded fragments were coded 'axially'. In axial coding, all previously created codes are grouped to separate codes. The last phase of coding is to selectively code the axial codes; this simply means that only the codes that are relevant to answering the sub- and main question(s), will be included. During this phase, no new codes are being created, but instead, a selection of the existing axial codes is made (Baarda et al., 2013).

3.5 RELIABILITY AND VALIDITY

The reliability of any research is based on the accuracy of the research methods and data collection methods that are used within the research process (Boeije et al., 2009). In the case of this research, the reliability depends on the interviews. The structure of the interviews is semi-structured, which means that it could be possible that the interviews are not fully replicable. In other words, if the same interviewee is questioned again with the same topic list, it might happen that he or she gives different answers. The reliability of the research is thus influenced, as it should ideally be fully replicable (Boeije et al., 2009). A way to increase the reliability of the research is to record and transcribe the interviews, as this means that they can be re-consulted at all times.

The validity of a research is based on the extent to which a real situation is measured as accurately as possible and how the gathered measurements are interpreted. When using interviews as a research method, the validity of the research can be compromised by an

interviewee that gives answers that he or she thinks the interviewer wants to hear. The interviewer should therefore be aware of this and adjust the results if it occurs (Boeije et al., 2009).

In addition to the validity and reliability of this research, other limitations hinder the quality of the research as well. As stated in the introduction, the time-span of this research is six months. Therefore, it was not possible to do more interviews than the ten that were held. This is the main limitation of this research, as it is therefore not possible to compare the results with all the local governments of the Netherlands.

4. RESULTS

In this phase of the research, the results of the interviews will be presented. Firstly, the respondents will be described in paragraph 4.1. Section 4.2 till 4.4 of this chapter will provide the results of these interviews, on the basis of the three chosen sub-questions of this study.

4.1 DESCRIPTIVE ANALYSIS

Ten interviews were conducted between the 18th of January and 19 March 2019. The duration of the interviews ranges from 34:02 to 1:20:24 minutes.

Interviewee from	*Department*	*Date of interview*	*Duration*
Tilburg	Information management	18-01-2019	45:00
Rotterdam	Urban development	24-01-2019	1:20:24
Utrecht	Information technology management	25-01-2019	34:02
Hilversum	Strategy	30-01-2019	35:32
Venlo	Work and accessibility	13-02-2019	54:04
Amersfoort	Smart City	25-02-2019	52:26
Delft	Strategy	27-02-2019	55:47
Rijswijk	Security and special assignments	28-02-2019	49:44
Breda	Communication	18-03-2019	01:04:59
Eindhoven	Spatial expertise	19-03-2019	01:01:38
TU Eindhoven	The Intelligent Lighting Institute of TU/e	27-05-2019	Communication via e-mail

Table 4.1: Respondents of this research

As table 4.1 also shows, the employees of the studied municipalities are working in sectors related to strategy, urban development, information management, communication and smart city departments. These differences, firstly, show that the topic of smart governance is rather fragmented to begin with. Moreover, since these governmental employees work in varying departments and thus varying expertise, their experiences with smart cities could also differ. Important to acknowledge, however, is that multiple municipalities addressed this 'fragmentation' in their governmental organisation. Smart governance appears to be 'a multidimensional subject that exceeds employees' regular tasks' (Municipality of Amersfoort, 2019). The municipality of Rotterdam describes smart city as 'a spread of a wildfire over the city', rather than it being a cluster in the municipality, and 'one must definitely not try to centralise it, this would simply not work (Municipality of Rotterdam, 2019).

4.2 EXTERNAL SMART GOVERNANCE PROJECTS

In the interviews, different subjects have been discussed in order to be able to answer the main- and sub-questions of this study. One of these topics was asking respondents about recent smart governance projects in the direction of inhabitants. This was necessary in order to answer this research's first sub-question *'What kind of smart governance initiatives do Dutch municipalities employ in the direction of inhabitants?'*

The municipality of Hilversum, for instance, is planning to launch an app that could benefit citizen participation. In this app, civilians can post things about their neighbourhood themselves, in this way share ideas to both other citizens as well as the government. The government can communicate directly to the citizens as well, for

example by sharing information about ongoing projects and asking the opinions of citizens about certain initiatives through polls. In this way, the municipality of Hilversum states that communications between citizens and the government, as well as communications only between citizens is made easier. The difference with using a 'normal' website is, according to the municipality of Hilversum, that *'you would want to know: what is happening in my direct environment? This app can send-out personalized information on a neighborhood level.'* The municipality of Breda started a similar project – or platform, where civilians could vote on a two dozen plans of the government. What do they think of these plans? Moreover, in some projects, inhabitants are asked for more substantive contribution to projects, so besides the results of the polls, online conversations do also take place. With such a platform, the municipality of Breda states that they can reach a group of citizens that would normally not attend information sessions organised by the municipality. They, however, also stated that this platform is not yet used very extensively, because up until now, there has been limited attention to communicating this platform to citizens. The municipality of Utrecht, moreover, launched an app where civilians can report about things in their environment. Examples of reportable issues are very broad, but can be related to pollution or nuisance on streets. This app registers the subject, location and (optional) a photo of the notification and personal information of the reporter (when filled in).

Examples of initiatives where technology plays a more prominent role are the 3D-model of their city that Rotterdam and Utrecht are generating (Municipality of Rotterdam, 2019). All sorts of data can be attached to this platform, so one will get insights in not only the what-, but also the where-factor. This 3D-model could have far-reaching implementations, as the municipality of Rotterdam states that one could, in the future, go to a furniture store to implement your dream kitchen into your virtual home on the 3D-platform.

These are, nevertheless, ambitions that are not all yet applicable. From the interviews that were held, it appeared that out of the many smart initiatives that were started, a large percentage was only in the beginning phase or was set up as a pilot. To paraphrase the municipality of Hilversum: *'Looking at the Netherlands as a whole, you can see that there are many pilots at the moment. In many cities, there are small areas and examples of services that are being set up […] We even notice businesses that say they've had enough of all of these pilots, you know, that means experimenting, they have to invest their capital into a pilot and eventually such businesses would want to earn their investments back, so they want to upscale these projects'.* The municipality of Hilversum here after states that these businesses are shifting from their traditional roles (suppliers of their products) towards more of a service provider with added value, in projects such as 'mobility as a service' and 'light as a service'.

As the municipality of Hilversum here addresses, the way of working in these smart projects differs from the traditional situation, in the case of market parties. For municipalities nevertheless, the processes in smart initiatives also differ utterly from their traditional systems (Municipality of Rotterdam, 2019; Municipality of Utrecht, 2019; Municipality of Venlo, 2019; Municipality of Amersfoort, 2019; Municipality of Rijswijk, 2019; Municipality of Eindhoven, 2019). This has consequences for the internal organisation, as the municipality of Rijswijk addresses: *'If you are going to implement technology in areas where this was not yet there, this means that certain changes occur, and generally, not everyone likes change. This means that you will have to focus on change management within your organisation, since your employees will have to work in another way. This asks for a change in mentality as well as a change in approach'.* Because of this,

and because of the fragmentation of municipal departments (see paragraph 4.1), employees of municipalities do often not yet see the added value of certain projects that reach beyond ones own silo within the organisation (Municipality of Eindhoven, 2019).

Because the concept of smart governance is relatively new, organisations typically do not have people where one could reach out to, since nobody really knows the whole picture (Municipality of Delft, 2019). Thus besides the shift from traditional working ways towards newer ones, the so called 'human aspect' could also be crucial to the successfulness of a smart initiative. It could, for instance be possible that municipal employees do not have enough (technical) knowledge, or little knowledge about the juridical aspects in a project (Municipality of Utrecht, 2019). The municipality of Venlo acknowledges that, within their organisation, ignorance among employees can be a problem. This ignorance has to do with the poorly organised internal technical infrastructures where employees do not know what systems are present in the organisation, let alone knowing what one could do with them. The municipality of Rijswijk also concludes that, to successfully implement smart initiatives, you will need people with the right expertise and knowledge to analyse the data. Currently, the municipality of Rijswijk does not have enough of these data-analysts working at their organisation, that 'know what they are looking at'.

The above named factors could explain the reason why, at this point, many smart (governance) projects are being set up as pilots, or are only in the beginning phase of the project's life-cycle. Another possible aspect, one has to take into account, is given by the municipality of Delft. They state that the current ambitions towards smart cities and smart governance are made, based upon the possibilities regarding current technologies. Given the fact that smart cities and smart governance are relatively new concepts, where nobody 'really knows how the future will look like' (Municipality of Hilversum, 2019; Municipality of Delft, 2019; Municipality of Eindhoven, 2019), this could also be influential to the kinds of projects that local governments initiate.

Nevertheless, there must, thus, be acknowledged that not all municipalities were starting (or had already started) smart governance projects in the direction of citizens, let alone smart governance at all. Some municipalities, for instance, were more focused on, for example smart mobility, smart living or smart environment practices. The reasons for engaging in these domains could, however, also be interesting to analyse. Therefore, the next paragraph will also contain the motivations of the municipalities that are focused primarily on other forms of smart initiatives to engage in these practices.

4.3 MOTIVATIONS TO ENGAGE IN SMART GOVERNANCE PROJECTS

In order to answer the sub-question *'What are motivations of Dutch municipalities to engage in these smart governance initiatives?'*, respondents were asked questions about their reasons for (not) being involved in smart governance. As argued in the previous paragraph, municipalities have different visions of what their share in smart governance should be. The vision of a city appears to be a determining factor that can result in many different motivations which can thus vary for each municipality.

When addressing the vision of a city, one can mean the vision of the city council or mayor of a city, that expresses the wish or ambition to engage in smart governance more thoroughly (Municipality of Tilburg, 2019; Municipality of Utrecht, 2019). To see that this works in two directions, an example of the municipality of Venlo is given. In Venlo, the subject of smart city and smart governance was seen as interesting concepts by the previous city council, but after new elections, other movements were prioritized

(Municipality of Venlo, 2019). In this case, the main goal for the municipality was set on developing a circular, sustainable, economy. However, as the respondents of the municipality of Venlo explain, the choice of focusing on a circular economy rather than on smart (city) governance, is also based on the profile of the city. Thus, the profile of a city can be seen as important to the final motivations of a municipality as well. For the municipality of Tilburg, this meant that earlier smart projects that did not generate impact (a goal for the municipality) were not supported by the city's council anymore. In other words, projects were not again initiated on the basis of emotions, but always on the basis of data that can actually tell why a certain project is a good idea (Municipality of Tilburg, 2019).

Multiple factors can be related to the so called profile of a city. Respondents, among others, name 'the presence of certain industries'; for example 'the city's focus on industry' (Municipality of Rotterdam, 2019), the manufacturing industry, logistics and the horticulture in the case of the Municipality of Venlo, and the 'innovation' of the Municipality of Delft and Eindhoven. What becomes clear through the interviews, is that many municipalities are searching for ways to profile their city. For the municipality of Rijswijk, this was a challenge, as the municipality is located near cities that have a clear profile: '*Clustered between the large city the Hague - which houses the national government and therefore has a focus on matters as safety and legislations - and Delft, which has the technical university located in the municipality and a main focus on technology. What do you do when you are a medium-sized city in this region?*' (Municipality of Rijswijk, 2019).

A question one could ask themselves, is why municipalities would want to have a clear profile that matches their city, and how does one know what profile belongs to their city? For the municipality of Rijswijk, the city council put this profiling question on the organisation's agenda, and as a consequence, a project group examined the image of the municipality. When these efforts were finished and the municipality of Rijswijk was aware of their image, the next step is to match projects to this particular profile (Municipality of Rijswijk, 2019). Example of a municipality that has set a profile is the Delft. Delft has the ambition of becoming the capital of innovative technology by 2040. According to the respondent of Delft, a reason why their government has set this goal, is because 'one's motivation has to be deep-rooted in the culture of the organisation'. Several municipalities, hereafter, state that smart city and smart governance initiatives can be used as a means to achieve an overarching goal (Municipality of Tilburg, 2019; Municipality of Rotterdam, 2019; Municipality of Hilversum, 2019; Municipality of Venlo, 2019; Municipality of Breda, 2019; Municipality of Eindhoven, 2019).

Figure 4.1: Word cloud of the different named goals/motivations of municipalities

Figure 4.1 shows all named goals and/or motivations that were given by the interviewed municipalities. In appendix B, these goals are listed per municipality and appendix C provides the total amounts these motivations were named in a clear way. The figure among others, visualizes the importance of the profile of cities, and as already stressed before, this profile can result in different motivations for municipalities. Of all the goals mentioned, some have a relation towards 'sustainability', 'liveability', 'health', 'safety', 'innovation', 'generating impact/insight', and 'social developments'. Paraphrasing the municipality of Tilburg, *'Our starting position is that all that we do, has to generate impact. We don't start something because we simply feel like starting it, but somewhere, it must mean something for someone in our city; which can be a company, organisation or a person, a citizen'*. Multiple municipalities address the importance of working in a data-driven way, where one can argument, on the basis of data, why a project or policy is a good idea (Municipality of Tilburg, 2019; Municipality of Hilversum, 2019; Municipality of Amersfoort, 2019; Municipality of Rijswijk, 2019). One may be wondering how governments would know if a certain project or policy has created impact. To this question, the municipality answered that *'measuring impact is very hard, since the complexity of it, but you will just have to accept that you can't measure something*'. However, when such measurements can be done, these data can be analysed and policies can be made upon truthful information. That is a very powerful starting-point for the discussion with the city (Municipality of Hilversum, 2019). The municipality of Utrecht also acknowledges the importance of impact, but explain the concept of impact on the basis of the liveability of the city. They determine that the liveability of a city is the most important from a governments-perspective.

The municipality of Utrecht is not alone in this statement. When asking about whether the respondent of the municipality of Rotterdam thinks of Rotterdam as a smart city, he explains that becoming a smart city is not a priority, but that the city has to be liveable and vital. They, nevertheless, still have ambitions towards the city's level of innovation,

especially because of recent societal debates on energy transition and energy recourses. Besides Rotterdam, the municipalities of Utrecht, Amersfoort Venlo, Hilversum and Rijswijk also acknowledge the practicality of societal challenges and - developments to smart initiatives. With societal challenges, one can, for instance think about the growing levels of congestion in inner cities. The municipality of Venlo does not face this problem, as the city consists of only a couple of districts, and is not as concentric as some other cities. As a consequence, they do not initiate smart projects in this direction. In other words, when municipalities do not feel a sense of urgency to a particular urban challenge, they are not likely to invest in innovation that could cope with these challenges.

Societal developments are, for instance, related to technological innovation. Because of technical innovation, among others, society looks utterly different nowadays than one generation ago. "*When looking at the average Dutch citizen, how many of those do not own a smartphone these days? No matter how we look at it, the development of society, the majority of the people is now used to these devices*" (Municipality of Hilversum, 2019). The municipality of Hilversum adds to this that an important motive for them is to keep track of societal developments, which show that data is getting a more and more crucial role in society. Moreover, "*New forms of technology can help make life easier, or more pleasant*" (Municipality of Hilversum, 2019). This passage provides a hidden motive: new forms of technology can help to increase a city's liveability; thus showing that the above listed motivations can interconnect as well.

Besides these different motivations municipalities can have to adopt smart governance practices, either based on their city's profile, or on societal developments, the municipality of Venlo expresses the opinion that *'the concept of smart city can be seen as a hype sometimes. It is a form of participating in the hype, just like doing business in a socially responsible manner or being ISO9001 qualified, at a certain point you would want like that. […] I have the feeling that in many cities, smart city is seen as an overall goal that has to be reached.'* Besides this conception of smart city being a hype, the municipality of Venlo, acknowledges that certain societal developments are becoming reality – like the 5G-network. The organisation, however, chooses to hold a laissez-faire mentality towards these technical developments, just as the municipality of Rijswijk does. '*I think that at a certain point, you simply can not do other than be more involved in the digital world'* (Municipality of Rijswijk, 2019). Apart from these similar mentalities of the municipalities of Venlo and Rijswijk, there are also municipalities that have a strong motivation to help define the legal frameworks which are adopted by many more governments. The municipality of Eindhoven created its own 'smart city starter's kit', which among others, contains basic principles about the sharing of data (data has to be open), transparency, privacy and other things smart environments have to comply to. The reason the municipality of Eindhoven has created this starter's kit, is because they also, like the municipality of Venlo and Rijswijk, see the evident role of technology in future societies. The difference between the municipalities, however, is that Eindhoven explicitly want to be the co-creator of the principles that are going to be used worldwide. If you don't do this, you will have to comply with rules that are already set-up by other governments (Municipality of Eindhoven, 2019). *'There is no city worldwide that is much farther than we are now, maybe partly, but everyone is messing around a bit, basically'* (Municipality of Eindhoven, 2019). This paraphrase, once again, shows that the future looks uncertain; local governments only have slight ideas about what future societies will look like. The motivations of local governments to engage in smart governance practices, thus also has to do with which role the government would want to adopt. Will one act as a precursor, or would one adopt an accommodating role? Either way, the municipality of Rotterdam concludes that 'the smart city has to get into the DNA of the organisation's governance.

The fact that the future is uncertain, however, can also be seen as a form of innovation, which is uncertain by heart. For instance, the municipalities of Breda, Rotterdam, Hilversum and Eindhoven all address that with practicing smart governance, one has be aware that things could go differently than planned beforehand, and projects may turn out to be not as successful as anticipated. Or as the municipality of Tilburg formulates it: *'Do not expect that every project will turn out to be a success. The basic principle of innovation is that some things may fail in the process. Be aware that, of the ten projects you start, eight of them will fail. And if you produce two successful ones, I believe that you must be very satisfied.'* Furthermore, a challenge that arises when practicing smart governance is, as the municipalities of Rotterdam, Hilversum and Rijswijk state, that governments must be aware of the fact that smart technologies are only for the 'happy few' that can keep up with such smart developments. It is the responsibility of the municipality to care for those that do not understand technology, that are not smart or intelligent or do not have the possibilities to participate, because if the municipality does not do this, a risk is that these people drop out. Also, when smart technologies are presented, it could be that some jobs will not be necessary anymore as these are replaced by technology. Another responsibility of the municipality is to ensure that people that lost their jobs due to innovation, are placed to work someplace else (Municipality of Rotterdam, 2019).

Other risks that could occur when practicing smart governance are related to its budget (Municipality of Tilburg, 2019; Municipality of Rijswijk, 2019; Municipality of Venlo, 2019), the limitation of data (Municipality of Utrecht, 2019; Municipality of Venlo, 2019), the so-called human aspect of projects – for example where the municipality of Rijswijk argued that there are too little data-analysts who '*actually have an idea where they are looking at*' – (Municipalities of Rijswijk, 2019; Municipality of Utrecht, 2019; Municipality of Venlo, 2019; Municipality of Delft, 2019; Municipality of Breda, 2019; Municipality of Eindhoven, 2019), resistance of citizens (Municipality of Rijswijk, 2019; Municipality of Amersfoort, 2019; Municipality of Rijswijk, 2019), the change in municipalities' working methods (Municipality of Rijswijk, 2019; Municipality of Rotterdam, 2019; Municipality of Venlo, 2019; Municipality of Breda, 2019; Municipality of Eindhoven, 2019) and again, the fragmentation of the municipalities (Municipality of Tilburg, 2019; Municipality of Rotterdam, 2019; Municipality of Utrecht, 2019; Municipality of Breda, 2019; Municipality of Eindhoven, 2019). Despite these different risks that could occur, one could say that the level in which an organisation could handle such uncertainties and risks when practicing smart governance, is determinative for their willingness or motivation to actually apply projects in this area.

On the basis of the applied projects, one could also try to compare the different municipalities. As stated before, the municipality of Venlo was not focusing on smart governance, but rather on the overarching goal of circularity. The municipality of Venlo, however, created a smart mobility vision together with the region of North-Limburg. They, however, acknowledge that beside this focus on developing an external strategy, the technical infrastructure within the organisation is not well organised. With this, the municipality of Venlo refer to user-unfriendly systems that work too slow and can not interconnect with other systems. Furthermore, the municipality of Venlo argues that the capacity governmental employees to work with these systems is often lacking. They argue that this is not a priority of the municipality because it is not a goal for them to become the smartest city of the country (Municipality of Venlo, 2019). This could be dedicated to the fact that '*Venlo is a municipality with just over 100.000 citizens, where most smart cities are the municipalities that have 100.000++ inhabitants*' (Municipality of Venlo,

2019). The matureness of organisations governance could thus be related to the population size of this particular municipality. The municipality of Tilburg, moreover, has initiated several smart initiatives, but a clear governance strategy is currently lacking besides the motivation that every smart initiative has to generate impact. What is also worth noticing is that both the municipalities of Tilburg and Venlo do not involve citizens in decision-making processes; citizens are only being informed to this regard. The municipalities of Venlo and Tilburg thus belong to a first level of smart governance, namely the government of a smart city.

Municipalities with a more clear vision or strategy towards smart governance are the municipalities of Breda, Hilversum, Eindhoven, Amersfoort, Rijswijk and Rotterdam. The municipality of Breda, for example, has a goal to improve the support of citizens in initiating new (smart) projects. Furthermore, Breda and Hilversum, have, for this reason developed participation platforms (as stressed in paragraph 4.2) which promotes collaboration. However, these platforms are, up until now, mainly being set up as pilots. Moreover, municipalities such as Rotterdam, Breda, Hilversum and Rijswijk are faced with challenges with the transformation of the internal organisation, as the municipality of Hilversum states: *'If you look at our internal organisation, than it is true that we could make improvement when talking about the efficiency of processes'* (Municipality of Hilversum, 2019). Or, as the municipality of Rijswijk stated that there the human capital of the internal organisation is simply not sufficient. For this reason, the municipalities of Rotterdam, Breda, Hilversum and Rijswijk belong to the second category of the smartening of a city, the smart decision-making phase.

Moreover, the municipalities of Amersfoort and Delft belong to the third category, which is called smart administration. The municipality of Amersfoort sees the importance of horizontally collaborating within the internal organisation, and in the municipality of Delft, digital connectivity of and between systems is seen as a basis where all smart initiatives should be built upon. These municipalities thus serve as successful examples for medium-sized municipalities.

In contrast, the municipalities of Utrecht and Eindhoven have a longer tradition of working with smart governance. The reason that the city of Eindhoven is so involved in smart governance is because they want to help develop and set (international) norms referring to smart city governance, but al. Moreover, the municipality of Eindhoven is focusing on collaboration on the basis of the quadruple helix model. Because of this, the municipalities of Utrecht and Eindhoven belong to the last category; smart urban collaboration, which acknowledges the importance of collaboration between multiple actors in a city.

Although this paragraph has showed that the motivations for starting smart governance projects could thus differ, the reasons of local governments to initiate specific projects related to civilians are certainly not all similar either. The next paragraph will focus on ways to involve inhabitants in smart governance projects.

4.4 INVOLVING CITIZENS IN SMART GOVERNANCE PROJECTS

In order to answer the last sub-question of this thesis ('*What are ways to involve citizens in (the process of initiating) smart governance projects?*'), the interviewees were asked what methods they use to involve citizens in smart governance projects, and what they view as critical success factors to involve as many citizens as possible.

The first question that might arise when reading about ways to involve citizens, is perhaps the question why municipalities would want their inhabitants to be involved in such projects or in general decision-making processes. The municipality of Breda explains this as following: '*Nowadays you, for example see that the turnout in elections is declining, and as a consequence, the legitimacy of your decisions suffers from this. Other forms of democracy, such as a participation platform, could help getting your legitimacy to a higher level.'* In other words, the relative distance between government and civilians is really high at times. From the interviews, it seems that most municipalities view citizen participation as important. However, there are differences between these local governments on at what phase of the project's process it would be best to involve citizens.

One way municipalities seem to involve citizens is by searching for inhabitants that are directly involved, or have an interest in the topic. This, perhaps seems ambiguous when reading the previous paragraph. It is this factor of 'what's in it for me', in smart governance projects that is often not clear for citizens (Municipality of Eindhoven, 2019). This is why some municipalities are of the opinion that one could preferably involve citizens in a certain phase of the project – where some things are actually presentable. Timing is really important in this regard (Municipality of Rotterdam, 2019; Municipality of Delft, 2019). The municipality of Hilversum furthermore acknowledges the importance of explaining why a certain project could be beneficial towards citizens. According to the municipality of Rijswijk, this is only a matter of perseverance; it all comes down to exemplary behaviour, showing people that your project works.

Other local governments address the importance of involving citizens as early in the process as possible (Municipality of Utrecht, 2019; Municipality of Rijswijk, 2019). Especially in projects where the privacy of civilians is involved, it works best to let civilians not only participate, but also innovate, instead of making top-down decisions and as a consequence, you will end up explaining the same concepts over and over again (Municipality of Rijswijk, 2019). In other words, the involvement of citizens could be greatly beneficial to the level of support of (smart) initiatives, in terms of greater acceptance and thus less resistance (Municipality of Breda, 2019).

Some municipalities, nonetheless, stress that the way to involve citizens is very dependent on the sort of project. The municipality of Tilburg, for instance, believes that it is best to involve citizens when they are actually affected by the proposed project or policy. This corresponds with the viewpoint of the municipality of Utrecht, that states that citizens will need a certain 'driver' in order to participate in something. When one involves citizens that actually experience a 'problem', there is an intrinsic motivation to improve matters (Municipality of Utrecht, 2019). Such drive can be fuelled by the municipality itself – for instance when the local government influences citizens to start participating, or citizens can communicate their wish to participate more thoroughly towards the municipalities directly, as well. The latter has occurred in the municipality of Amersfoort, where citizens started a civilians' initiative called 'Measure your City', where inhabitants had placed sensors around their houses that measured air temperatures. These civilians were interested in matters such as control over technology, privacy, balances of power (think about Google and Facebook), and wanted to know the viewpoints of the municipality of Amersfoort in these discussions.

Other aspects that municipalities have to take into account are cultural differences between citizens and the government. The municipality of Rotterdam houses around 175 different nationalities, and it may not be surprising that certain cultural and/or language differences can occur and can be challenging in involving citizens to the process of policy-

making. Moreover, the municipality of Eindhoven links the cultural backgrounds of citizens, among other things, in certain neighbourhoods in the city to the successfulness of citizen involvement in that neighbourhood. Eindhoven sees that social class as well as the level of education are also determinant to citizen's willingness to participate. That the composition of the city's population could be of influence to the success of the involvement of citizens is something that the municipality of Venlo also sees. They state that the average citizen of their city simply 'is not interested in the concept of circularity', the main focus/goal of the municipality. Nevertheless, the municipality of Venlo addresses that they have a relatively 'following' population, which they link to the composition of the city's population. In their own words: *'the population is relatively low educated, and because of this, are less resistant towards projects that we as a government initiate. In other cities, where a higher share of the population has a higher degree, certain discussions about the risks of smart governance will occur more […] I think that, if we initiate a project that concerns people's privacy, that only one or two neighbourhoods will start a dialogue with the municipality, the neighbourhoods with more expensive housing'*. It is however, important to note that the municipality of Venlo is not really concerned with citizen participation, and therefore does not have specific ways to cope with this diversity in the composition of the city's population.

This example nevertheless shows how, presumably, different classes of citizens could have different opinions regarding smart initiatives. One could say that it, for this reason, would be best to include a selection of citizens that is as close as possible to the 'real' situation, or composition of the population. In practice, this seems to be very challenging. For instance, several municipalities address the difficulty to reach youngsters that are willing to participate (Municipality of Rijswijk, 2019; Municipality of Breda, 2019). Not surprisingly, young people tend to be more active online and, if willing to participate in governance, they'd prefer to do so online as well (Municipality of Breda, 2019). This group, namely, will likely not attend citizen's participatory evenings, organised by the municipality (Municipality of Rijswijk, 2019; Municipality of Breda, 2019). However, even in the created (online) platform of the municipality of Breda, it appears that the overall profile of the participants was the higher educated, relatively older citizen of Breda. This raises the question if there are any ways to select citizens in such a way, that the group of participants could be more of a true reflection to society. A possible method to ensure a more selection that represents the actual society better, is to compensate participants via allowances (Municipality of Utrecht, 2019).

The technical university of Eindhoven (TU Eindhoven), who held a need assessment with citizens of Eindhoven for the Lighthouse (smart lighting grids) project, however, argues that full representativity in qualitative needs assessment, is not feasible. They address that, if you have seven conversations with citizens, often you won't receive new input. This is however checked with interview number eight till ten. The municipality of Eindhoven speaks with more citizens, but notice that there will be a moment were one hears no new information, but rather repetitions of the same problems, ideas and places. That is when you know you have proper data quality (TU Eindhoven, 2019). They, nevertheless, search for ways to involve as many citizens as possible. For this reason, they try to ensure that participating will be easy and it has to be fun for participants to join. This is why the TU of Eindhoven makes use of both visual materials and physical components, for example showing citizens photos of their neighbourhood. Furthermore, the technical university of Eindhoven tries to involve citizens by actively visiting places such as community centres, local shops, stations, schools, markets or party's organised for/by neighbourhoods. In this way, key figures of neighbourhoods are quickly discovered and from there, the TU Eindhoven can ask further to involve other citizens as well.

However, they still acknowledge that it is challenging to reach citizens, especially since citizens are not used to being involved in early stages of innovation processes. The TU of Eindhoven, therefore, will have to convince inhabitants of the value of their opinions.

The municipality of Breda agrees with the TU Eindhoven, by stating that the outcomes of citizen participation will be more generalized when more citizens are involved; thus the importance of their inputs is recognized. To paraphrase: *'When you are going to ask one or two citizens, very specifically, what is absolutely necessary for them, what do they need in order to function well, you will receive very specific results. So, the bigger this group will be, the more general the results will be, as well.'* This is, perhaps also a difference between the modes of citizen participation. In a specifically organised evening where citizens can come to participate, the municipality can, more extensively, discuss substantive topics, while in online settings, more input can be generated on the basis of a more diverse group (Municipality of Breda, 2019). Besides, when organising such citizen participation evenings, it must be noted that here, you will only involve the already active citizens (Municipality of Breda, 2019). Lastly, the location and time of these evenings appear to be important to the overall willingness to participate (Municipality of Rijswijk, 2019). Despite the pros and cons of both methods towards citizen participation, the combination of both seems to be the golden ticket towards citizen involvement: 'you simply can't do the one thing without the other' (Municipality of Breda, 2019).

Even if a government is able to reach a group of citizens that reflects the actual situation, there are some things that the municipality has to account for. For instance, municipalities have to think about what it means when citizens do not give the answers that the municipality was anticipating upon (Municipality of Breda, 2019). The municipality has to prevent that civilians get frustrated because they feel like nobody listens to their ideas. The citizens will have to be satisfied with the final project or policy outcome (Municipality of Breda, 2019). The TU Eindhoven, therefore, tries to be as open minded as possible in these interviews, and to not have certain expectations beforehand (TU Eindhoven, 2019).

5. DISCUSSON

The results of this research, among others, show that municipalities could have different approaches to smart governance, based on varying motivations and/or goals they have for their city. This chapter will discuss some of the results that were presented in the previous chapter.

First of all, something that has been stressed by varying municipalities is the uncertainty of the future of smart governance practices. This is perhaps hard to understand when several municipalities stated that their motivation to engage in smart governance is that smart governance initiatives should generate impact (for instance for citizens). However, when employing (uncertain) smart governance initiatives, how would municipalities know for certain that these projects will actually generate the desired 'impact'. It seems as if it is generally believed that, smart initiatives will almost certain, lead to positive outcomes for citizens. However, it should be noted that with innovation, there will always be a part that is uncertain, so knowing all the outcomes of smart projects is simply not possible.

Other results of this thesis were focused on the profile of the municipality. It appeared that many municipalities had thought of the profile of their city, where future smart initiatives should be based upon. However, it should be argued that profiling a city as being the best innovation or as being a capital of sustainability, can also be seen as a form of the branding of a city. Municipalities are more concerned with branding their city on the basis of the profile of their city than that they would brand their city as being smart. What city would not want to be 'the best' at something? If a municipality is not the best at being smart, it could search for other ways to profile their city so that their city could still stand out in relation to other cities.

Lastly, since there is no one-size-fits-all approach to smart governance (Meijer, 2016), this restricts the generalizing power of the results presented in this research, and can thus be seen as a limitation to this research, as De Punt et al. (2018) also discussed. However, this remark may not be fully applicable to this research, since once of the main outcomes here is that the importance of the profile of cities and thus the dedications to the situations at hand. The fact that these situations and context of cities can differ is a given and will not have to be a problem for the results of this study. What could, nevertheless, be interesting is to study more municipalities to see if the conclusions proposed here do still apply when repeating this research. Chapter 7 will give more attention towards recommendations to future research.

Looking back at the research process, there are a few matters that could be reflected upon. First of all, the researcher underestimated the duration of selecting respondents. This took more time than planned beforehand and was more challenging than expected. Eventually, the study's method therefore changed and the researcher searched for more respondents by using the snowball technique. Besides this alteration in methodology, the general scope of this study changed was also adjusted. At the beginning of the writing process, the idea was to actually involve citizens in this research and, via questionnaires, ask them about their opinions on recently initiated smart governance projects of their municipalities. For this, the planning was to attend specific participation evenings that municipalities organised. This, however, quickly appeared not feasible for a few reasons. The first reason is that municipalities do not frequently organise such meetings, let alone if they organise them at all. And since these participation evenings are not organised at fixed moments, and this research only had a time-span of a couple of months, it was not

possible to actually involve citizens in this study. Because of this, the objectives of this research had thus been changed. There was chosen to focus on ways to involve citizens in the process of initiating smart governance projects, because it seemed as if municipalities were somewhat challenged by this matter. When this decision was made, however, a few interviews were already held, so not all interviews were focusing on this matter unfortunately.

The researcher, also, changed the attitude of interviewing a bit after the respondent of the first interview noted that the interviewer asked questions in a broad way. The researcher was made aware of this, so this could be prevented in next interviews. The process of interviewing, nevertheless, partly remains a subjective research method. As Bion and Hunter (2007) state: "The qualities and inherent mannerisms and expectations or even the most experienced interviewer will introduce biases into data". Furthermore, the researcher determines which codes are included in the study's results, and which fragments will not be discussed. It is for this reason that it is important to clearly describe all performed tasks and steps in the methodology of a study, so that the study could be reproduced to see if a follow-up study will present the same results, or completely different ones.

Furthermore, Bion and Hunter (2007) also acknowledge that, when interviewing, the simplest terms (to themselves) could be seen as highly theoretical towards the respondents. This was noticeable when asking respondents about their knowledge of the concepts of smart cities and smart governance. Since there is no fixed definition to these concepts, one could recognize that some municipalities had other interpretations towards the actual meaning of smart city and smart governance. Because of this, the researcher decided that to name the definitions that are used in this research, so that ambiguities are prevented as much as possible.

A last thing worth mentioning about the results of this study is that the results are not always specifically focused on smart governance, but often on other facets of smart city, such as smart mobility or smart environment. It, therefore, could thus be that when this research had involved municipalities that were all strongly motivated to engage in smart governance, or were all not, other outcomes could be the consequence. This is however not a problem for this thesis, because this has to do with the motivation of municipalities to engage in smart governance. What their motivation is, appears to be dependent on the context of each municipality. Smart governance is typically seen as a means to reach an overarching goal for a city or municipality. These municipalities will then initiate projects that are related to this goal; so when smart governance projects are not in line with this particular goal, these projects will likely not be started in the first place.

6. CONCLUSION

This thesis has provided an overview of smart governance approaches in the Dutch context. The interviewed municipalities were selected on the basis of four categories as identified by Bolivar and Meijer (2016). As stressed in the previous paragraph, the different municipalities of this research belong to varying categories with respect to their levels of 'smart matureness'. Important to note is that, for the municipalities of Tilburg, Venlo, Breda, Rotterdam, Amersfoort, Utrecht and Eindhoven, the study of De Punt et al. (2018) categorized these municipalities in the same way as this study did. A reason for this is that the research of De Punt et al. (2018) is recently conducted, and the fact that the results comply with each other improves the validity of this thesis.

Looking at the first sub-question of this thesis ('*What kind of smart governance initiatives do Dutch municipalities apply in the direction of inhabitants?*'), it could be concluded that municipalities have initiated several smart governance initiatives in the direction of inhabitants. The municipalities of Breda and Hilversum developed participation platforms that enhance citizen collaboration, the municipality of Utrecht started a programme where citizens could make notifications about their environment via an online tool, the municipalities of Rotterdam and Utrecht are developing a 3D-model of their city which could benefit citizens as well, etc. However, it must be noted that many of these projects are still being set-up, or were developed only in test areas or as pilots. Priano and Guerra (2014) also stated that smart initiatives are often designed for specific areas or neighbourhood.

Furthermore, it appears that municipalities that see the importance of initiating smart governance projects in the direction of inhabitants are more mature on the scale of smart cities than municipalities that do not focus on citizens, like the municipalities of Tilburg and Venlo. In general, it could moreover be concluded that most larger-size municipalities have a more mature level of smart governance than medium-sized local governments. This level of matureness is among others, related to the longer track length of smart governance, as could be seen from the examples of the municipality of Utrecht and Eindhoven. This, however, does not leave out success stories of medium-sized municipalities such as Amersfoort and Delft, which show that there are opportunities to succeed in smart governance strategies in medium-sized local governments as well.

To answer the second sub-question *'What are motivations of Dutch municipalities to engage in these smart governance initiatives?'*, figure 4.1 will be used. In this figure, all motivations and overarching goals to engage in smart governance are given. What could be concluded is that the profile of a municipality is of influence to the sort of smart initiatives this municipality would employ. This is perhaps not surprising, as Lopes (2017) also found that motivations for engaging in smart governance projects are dependent on the context of cities. Another conclusion of this research is that many municipalities see the concepts of smart city and smart governance as a part of the future; a form of societal or technical development where sooner or later, each municipality will have to deal with.

Moreover, this research finds that certain challenges that could occur can be of influence to municipalities' motivation to engage in smart governance practices. Interviews with respondents have found that such risks could be related to social inclusion, creating jobs, the limitations of data, the fragmentation of municipal departments, the budget of smart governance projects, resistance of citizens, the change of municipal working methods and to human aspects. These examples of risks show that there are uncertainties that occur in various areas. Lopes (2017) argues that risks could be categorized as political,

governmental, social and cultural as well as technical challenges. In this regard, political challenges could be the fragmentation of municipal departments. Governmental challenges could consist of the resistance of citizens and the change of municipal working methods. Risks in the human aspect as well as social inclusion and creating jobs belong to the category of cultural and social challenges and the limitations of data could be in the category of technical challenges.

This research concludes that the levels in which organisations could cope with such challenges or risks when practicing smart governance, is determinative for their willingness or motivation to actually apply projects in this area. So besides specific motivations or goals of municipalities, risks and other uncertainties are important to consider when researching smart governance.

Other named motivations such as 'Economic motivations', 'Citizen participation', 'Inclusivity', 'Sustainability', 'Develop new services', 'Attractive business climate' and 'Connect students to the city' have an overlap with literature about aspired outcomes of smart governance (Bolivar & Meijer, 2016). Moreover, figure 4.1 shows that motivations such as 'Transparency', 'Efficiency' are mentioned by municipalities. These are among the criteria for evaluating smart governance given by Nam and Pardo (2014). Municipalities would want their municipality to be transparent and efficient, which are thus motivations to engage in smart governance. However, municipalities did not name that these concepts are used to evaluate their projects.

Despite the named motivations, it must, again be said that for many municipalities, developing smart initiatives is only a means to reach such overarching goals. Municipalities see smart city foremost as a branding issue; governments activities are framed to the outside world based on the profile that the city has set-up. This corresponds with the study of Bolivar and Meijer (2016) who concluded that city branding is one of the aspired outcomes of smart governance. Kumar (2015) moreover finds that a benefit of e-government to governmental bodies is the creating of a positive image of a modern and progressive government. The municipalities argue that their particular smart projects will have to have added-value, or has to be of relevance to their city, when created.

This, however, seems ambiguous, since it is known that smart projects are barely checked for progress (Van den Bergh et al., 2018). The municipality of Tilburg even stated that '*one must just accept that sometimes, you can not measure the impact of projects'*. Something that multiple municipalities are focusing on, is involving citizens in their decision-making processes. When citizens are involved from early-on in these processes, this could lead to an increase in the support of the particular proposed smart initiatives. To involve citizens, multiple methods appear to be possible.

These methods can be analysed on the basis of the ladder of Arnstein's citizen participation (1969). For example, the municipalities of Tilburg and Venlo show a low level of citizen participation, and could be compared to the bottom stairs of the ladder of Arnstein (1969), where citizens are not able to influence the policy-making processes. Furthermore, next steps on the ladder of Arnstein (1969) are the forms of one-way communication where citizens are involved by organising neighbourhood meeting, public hearings and letting them fill in surveys. Although it must be noted that these forms of participation are adopted by all of the municipalities – every municipality organises neighbourhood meetings every once in a while, and for the municipalities of Delft and Rotterdam, these types of communications are dominant.

The municipalities of Utrecht, Rijswijk, Breda, Amersfoort, Eindhoven and Hilversum are among the higher ladders of citizen participation as proposed by Arnstein (1969). These municipalities try to delegate more power towards citizens by involving them in decision-making processes, and are able to influence decision-making in this regard. For example, the municipality of Rijswijk states that civilians must not only participate, but also innovate; they are using focus groups to reach this. In the municipality of Amersfoort, citizens initiatives have started from bottom-up but is supported by the municipality. The municipalities of Breda, Hilversum and Utrecht have developed online platforms/apps to enhance citizens participation. Lastly, the municipality of Eindhoven is very concerned with including their quadruple helix method not only to smart initiatives, but for all future projects.

The categorisation of these municipalities on the basis of the ladder of Arnstein (1969) show similarities in the categorisation of the level of smart matureness by Bolivar and Meijer (2016). It could thus be concluded that the method of citizen participation and the matureness of smart cities have a common ground; the municipalities that view citizen participation as important are municipalities that are among the higher levels of smart matureness. The motivations of municipalities to engage in smart governance could thus be related to their views towards citizen participation. This gives an answer to the main question of this research *'What are motivations of Dutch municipalities to engage in smart governance initiatives, and what are ways to involve citizens in such initiatives?'*

7. RECOMMENDATIONS

On the basis of the outcomes of this research, some recommendations can be made to parties that are involved in smart governance practices. Since one of the objectives of this thesis was to look for methods to involve citizens, it is important to recognize all of the factors that are of influence to citizens' willingness to participate in decision-making, regardless of the method that is chosen. For this reason, figure 7.1 shows proposed success factors that are of influence to citizen participation.

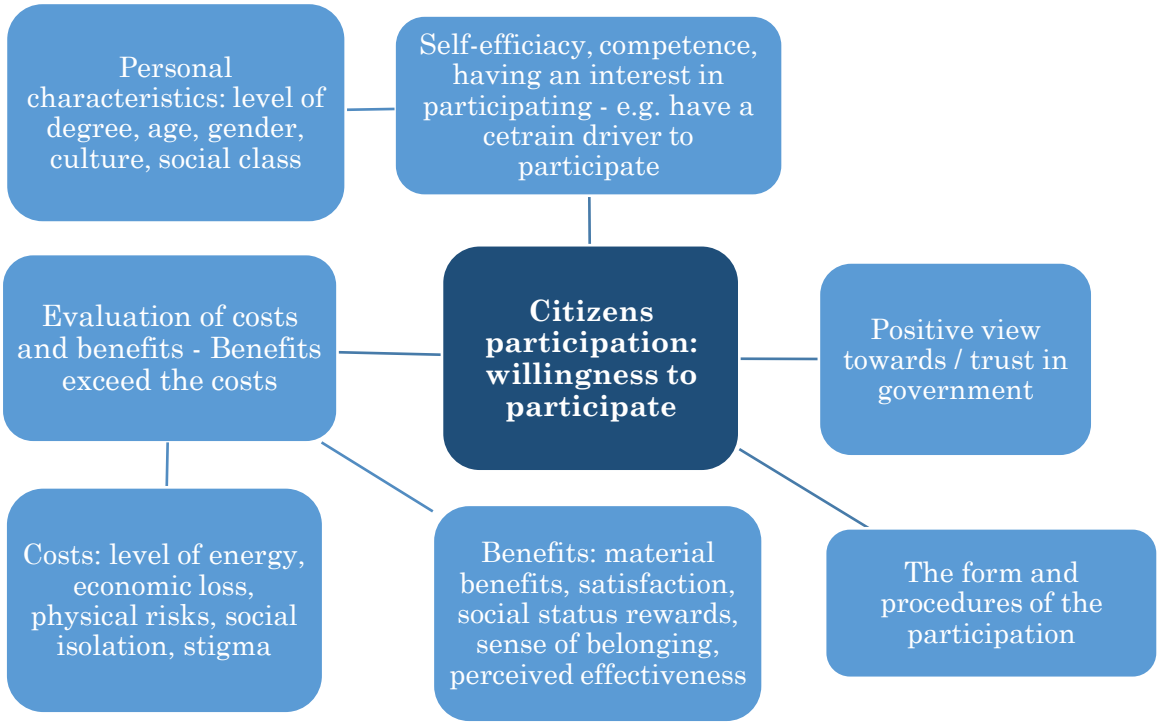

Figure 7.1: Proposed factors that are of influence to the citizens' willingness to be involved in citizen participation in the context of smart governance

Since the interviews showed that some municipalities find it challenging to find people that are willing to participate, it could be of influence for municipalities to be aware of the factors that are presented in figure 7.1. This figure is created on the basis of both literature as well as the interviews with respondents. For example, the evaluation of costs and benefits is a factor that was proposed by Olson (1965) and altered on the basis of a study of Mannarini, Fedi and Trippetti (2010). Moreover, the trust in government is seen as influential to citizen's willingness to participate by the municipalities of Rotterdam and Breda, and is supported by Mannarini, Fedi and Trippetti (2010). Furthermore, the municipalities of Tilburg, Utrecht, Hilversum, Venlo, Amersfoort, Breda and Eindhoven, as well as Gonçalves et al. (2013) acknowledge the importance of self-efficacy or the presence of a personal driver towards the willingness to participating. Personal characteristics, thirdly, are also seen as important by Zani and Barrett (2012) (gender), the municipalities of Rijswijk, Breda and Eindhoven (age), the municipalities of Venlo, Eindhoven and Breda (level of degree), the municipalities of Eindhoven and Rotterdam (culture) and the municipalities of Venlo and Eindhoven (social class). Finally, the form of the participation appears to be of influence to people's willingness to participate in decision-making. The TU of Eindhoven, for example, argue that they make use of visual materials or physical components. Moreover, the municipality of Rijswijk found that the location and the time of neighbourhood meetings was dependent to the amount of people

(including their age) that visited and participated. The shift of governmental communication to online platforms will also motivate more people to participate than only use offline methods to select citizens to participate in decision-making. Lastly, the municipality of Breda argues that the citizens should be involved as early as possible, which shows that the moment of involvement could be of influence to the willingness of people to participate.

When these factors are known, a next step will be to try and cope with these different factors. Possible methods to ensure a better representation could be to make use of sampling, try to speak citizens at various places within their neighbourhoods in order to see as many different people as possible, ensuring that the process is 'fun' enough to participate in by making use of visuals for example, to involve citizens in early stages of the project, to combine both online and offline communication methods and/or to give citizens allowances when they participate (e.g. a form of a driver).

The final part of this thesis will include a recommendation to future research. As also noted in chapter 4 about the results of this research, engaging in smart city projects appears to be challenging for municipalities, partly since their organisations consist of many different departments, while smart city approaches have an interest in several domains. Many municipalities did not have a special department for smart cities, and some respondents argued that even they found the concepts of smart cities not easy to comprehend, since they only have knowledge about specific parts of the process. For instance, an employee of the municipality of Utrecht told that he, himself, "*had to speak with multiple people within the government's organisation to get an overall idea of the concept and contents of smart cities*". Furthermore, several respondents discussed in the interviews that it could be handy and/or interesting for me to speak with another person within their own organisation, since they could tell more about a particular subject that could be interesting to this thesis. It could, for this reason, be interesting to interview several people within one municipality in a future research on smart governance.

Since this research was bound to a specific time-frame, it was not feasible to interview more respondents. However, for future researchers, the smart governance practices of other municipalities could give more insight in the current state of the art of this phenomenon. New studies could therefore try to include more municipalities in their studies. Another possibility is to focus on smaller municipalities as well, instead of larger – and medium-sized local governments. A reason for this is that in an interview, the municipality of Breda argued that some smaller municipalities in the Brabant region are focusing on smart agriculture.

Although this thesis first had the aim to involve the opinions of citizens towards smart governance initiatives employed by their municipalities, chapter 5 showed that this appeared not feasible, unfortunately. Therefore, it would be interesting for future researchers to do try this and in this way, investigate the added-value of smart governance projects viewed by citizens – the group of people that should benefit from these (external) projects.

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APPENDICES

Appendix A: Topic-list for the semi-structured interviews with municipalities

(Sub)theme that will be discussed	*Question*	*For instance*
Introduction – Smart cities/governance in general	1. Are you familiar with the concept of smart cities?	
	2. Are you familiar with the concept of smart governance?	
	3. To what extend do you feel your municipality is a smart city?	
	4. Does your municipality have a specific smart city strategy, and, if yes, what is this strategy?	
Smart governance initiatives	5. Is your municipality involved in smart governance?	
	6. If so, what kind of smart governance projects did you employ?	
	7. Did you also focus on projects in the communication with citizens? Why (not)?	
	8. Why were these projects initiated?	What were motivations/ objectives and aspired outcomes?
	9. What role has ICT in these initiatives?	
	10. In what way were this/these initiative(s) governed and structured?	Such as, what governmental role, what implementation strategy and/or smart governance model
	11. Were there other stakeholders involved in this initiative?	For instance citizens and/or non-governmental organizations
	12. Do you think citizens benefit from the initiative(s), and why (not)?	
Ambitions and frictions	13. Is there any issue or lesson learnt from the initiative that you would like to share?	
	14. What are further ambitions for your municipality regarding smart governance and why?	

Appendix B: Motivations of municipalities to engage in smart governance

Municipality	Motivation/goal
Tilburg	Generate impact (on the basis of data)
	A healthy city
	A happy city
	Role of the city
Rotterdam	Innovation
	Societal developments
	Learning city
	Sustainability
	Efficiency
	Generate impact
	Liveability
	Profile of the city
	Open data
	Role of the city
	Inclusivity
Utrecht	Societal developments
	Accessibility to technology
	Efficiency
	Create new policies
	Cost advantage
	Generate impact
	Liveability
	Open data
Hilversum	A safer city
	A healthy city
	Liveability
	Develop new services
	Generate insight
	Technical developments
	Citizens participation
	A lively city
	Societal developments
	Create new policies
	Role of the city
	Open data
	Inclusivity
Venlo	Circularity
	Cradle to cradle
	Sustainability
	A healthy city
	Mobility
	Sense of urgency
	Project's added value
	Societal developments
	Intrinsic motivations
	Profile of the city
	Role of the city
Amersfoort	Project's added value
	Societal developments

	Liveability
	Create new policies
	A safer city
	Mobility
	Spatial developments
	Health care
	Cost advantages
	Generate insight
	Take personal freedom of citizens into account
	Gradual growth
	Profile of the city
	Open data
Delft	Digital connectivity
	Technical infrastructure
	Intrinsic motivations
	Sustainability
	Economic motivations
	Innovation
	Attractive business climate
	Connect students to the city
	Profile of the city
Rijswijk	Liveability
	Societal developments
	Technical developments
	Mobility
	A healthy city
	Connecting girls to technology
	Inclusivity
	Innovation
	Open data
	Attractive business climate
	Generate insight
	Project's added value
	Profile of the city
Breda	Improve the support for projects
	Citizen participation
	Project's added value
	Profile of the city
	International logistics hub
	Sustainability
	City of meetings
	Learning city
	Open data
Eindhoven	Innovation
	Project's added value
	Societal developments
	Role of the city
	Safety of data / security
	Safer city
	A happy city
	Improve the support for projects
	Attractive business climate

	Citizen participation Sharing knowledge in collaborations Smart society Liveability Open data Quadruple helix based collaborations Profile of the city

Appendix C: Different motivations listed by the amount of times mentioned

Motivation/goal	Number of municipalities that mentioned this motivation (maximum amount is 10)
Societal developments	7
Open data	7
Profile of the city	7
Liveability	6
Role of the city	5
Project's added value	5
Sustainability	4
Innovation	4
A healthy city	4
Generate impact	3
Citizen participation	3
Inclusivity	3
Attractive business climate	3
Create new policies	3
Mobility	3
A safer city	3
Generate insight	3
Technical developments	2
Efficiency	2
Cost advantages	2
Intrinsic motivations	2
A learning city	2
Improve the support for projects	2
A happy city	2
Sharing knowledge in collaborations	1
Economic motivations	1
Connect girls to technology	1
Accessibility to technology	1
Circularity	1
International logistics hub	1
Quadruple helix based collaborations	1
Connect students to the city	1
City of meetings	1
Data security	1
Develop new services	1
Personal freedom of citizens	1
Digital connectivity	1
Smart society	1
Gradual growth	1
Spatial developments	1
Sense of urgency	1
A lively city	1
Cradle to cradle	1
Health care	1