

Effective Integration of E government across Dutch municipalities

Kris Brons
Tilburg University
k.s.brons@tilburguniversity.edu

Jonas Kraaijkamp
Tilburg University
j.kraaijkamp@tilburguniversity.edu

Kinsley Niji
Tilburg University
kinsley.niji@tilburguniversity.edu

Pedro Schnieders
Tilburg University
p.i.schnieders@tilburguniversity.edu

ABSTRACT

The aim of this research is to construct an understanding of the variables that influences the development of local E governments. There is a lack of knowledge in which variables limits the local governmental bodies in The Netherlands in specific.

Through an exploratory research design in which interviews are conducted with experts in the development of local E governments, new insights have been gathered. Through a judgement sampling design, interviewees are selected to gather the necessary data to come to the conclusions.

The interviews have shown there are different variables to take into consideration, such as the specific characteristics of the city: whether it is a student or a tourist city for instance. Besides that, regulations concerning privacy and the high level of customization make it harder to standardize processes in the local E government.

Due to the limited number of interviewees, the reliability of this research is low, however it gives deeper insights in the case study of the municipality in Roosendaal. Further research with a different sampling design, adding municipalities with a different focus (e.g. tourism and students), should be considered.

Throughout this paper E government will be used for electronic government.

Keywords

E government; Dutch municipalities; population groups; inhabitant's municipalities IT; 'stages of growth' model.

INTRODUCTION

Research objective and research questions

The Dutch government has developed its local Electronic government (henceforth, the term E government will be used to refer to Electronic government) steadily throughout the past decade. Despite its development, local bodies are still facing difficulties regarding digital environment and its interaction with its citizens. The government is facing a lack of IT knowledge to make IT projects for E government a success (Heeks & Bailur, 2007). Besides IT infrastructure, the government should also supply relevant information to its citizens and reach them through their online environment.

Despite these challenges The Netherlands still performs well on a global scale. The Netherlands ranks 4th place in the E government Development Index and the 13th place in terms of the E-participation. On a global level, The Netherlands is performing well, also when looking at the other western countries which have a well-developed E government. The government is making progress in terms of developing online portals and sharing governmental services online (United Nations, 2018).

This paper provides a more profound analysis on how E government could be effectively integrated amongst Dutch municipalities. Established theories on the integrations of E governments have been analyzed beforehand.

The model of Andersen & Hendriksen (2006) is used to determine the level of E government integration in The Netherlands. Besides that, theories concerning the importance of trust by Carter & Bélanger (2008) is analyzed to research its role in the E government integration. The chapter methodology and Conceptual model provide an extensive overview of what these theories entail.

PROBLEM STATEMENT

The internet has a great potential to improve the interactivity and transparency between the government and its citizens. (Bonsón, Flores, Royo, Torres, 2012). This could also lead to more trust in the government. It is shown that local governments are deploying the technologies of web 2.0 and social media, but that there are still a lot of opportunities for improvement. Leveraging these opportunities could lead to lower communication costs, delivering information faster, and a broader information reach by governments to its citizens. However, many initiatives are still in the development stage and there are opportunities to research how E government technologies could lead to opportunities for local governments (Jaeger & Thompson, 2003). This report aims to gain deeper insights in the different factors for a successful E government integration.

Research question

What is the current stage of E government in the Netherlands and to what extent does trust in E government by Dutch citizens affect their level of participation in E government?

Theoretical questions

- What are the development stages for the E government?
- What is trust in the context of the development of the E government?
- What are the limitations in the development of the E government?

Practical questions

- What is the current level of E government integration in the Netherlands?
- What does the Dutch government do to create a higher levels of E participation/trust amongst its citizens?
- What limits municipalities in the development of E government?

RELEVANCE

Academic and managerial

Currently, there is not a clear body of knowledge that shows how local governmental bodies are performing in terms of their development of the E government. This paper provides insights in the variables that have an influence. In addition, this research could be relevant for municipalities in other countries with comparable goals towards the development of their E government.

CONCEPTUAL MODEL AND THEORY

Theory overview

Municipality

A Dutch municipality is the third tier of governmental administration in The Netherlands. The first and second tier are respectively the government itself and the provinces. A municipality is governed by a council, the mayor and aldermen. Municipalities have autonomous power to make decisions about issues that only affect local inhabitants for example building theatres, cycle paths or houses. Furthermore, the municipalities implement national laws, register a marriage and register your home address. At this moment there are 390 municipalities in The Netherlands (Government of the Netherlands, 2019).

Digitalization

There are multiple definitions of digitalization. This report focuses on the following two definitions. Digitalization is defined as the process of adoption in the use of digital computer technology and converting analog information into digital information. The second definition is, in a broader sense, the economic and social transformation triggered by the massive adoption of digital technologies to generate, process, share and transact information (Katz, Koutroumpis, Callorda, 2014). These two definitions have been chosen since they fit the definition for this paper.

Development of the E government

To define E government, it is necessary to define government first. Government is defined as a dynamic mixture of goals, structures and functions by which society pursues essential objectives (Pardo, 2000).

Nowadays, governments are using the internet to provide public services to their inhabitants. Electronic government (E government) refers to government's use of technology, in particular the use of web-based internet applications. With this, the government is able to enhance the access and delivery of information and services to its inhabitants, business partners, employees, agencies and other government entities. The use of technology has the potential to improve the public trust in the government by making the interactions with each other more efficient (Layne, Lee, 2001).

For this paper, it is essential to measure the level of digitalization of the local government. Layne & Lee (2001) constructed a framework that makes a distinction between four levels of digital integration: Catalogue, Transaction, Vertical Integration and Horizontal Integration, shown in Figure 1, below.

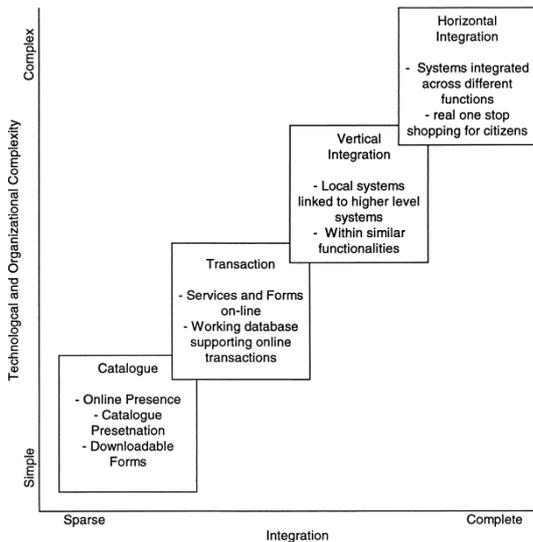


Figure 1 Dimensions and stages of E government development

The four levels are rated from high (Vertical integration) to low (Catalogue). The highest level is characterized by integrated systems where all interaction between citizen and municipality could be done through an online environment. On the other hand, the Catalogue stage is a local government that offers all its forms online and there is an exhaustive amount of information available online. Once the municipality can offer online transactions and more direct online interaction between citizens and the municipality, the next stage (Transaction) will be reached. The last stages of the model – vertical and horizontal integration – represent the ideal situation for citizens. In these stages the citizens will have access to ubiquitous government services and the functional ‘walls’ inside the government will be transparent to the citizens.

Andersen & Hendriksen (2006) however, suggest that the model of Layne and Lee reinforces the technology bias pushed by government and international organizations when promoting E government and state that issues as values, interaction, and orientation are not in focus for E government research. An extended model was developed by them, the Public Sector Process Rebuilding (PPR) model. The major difference is the activity and customer centric approach rather than the technological capability.

Effective Integration of E government across Dutch municipalities

Since trust in the government by its citizens is an important variable in this research, the PPR model will be used to determine the level of digital application.

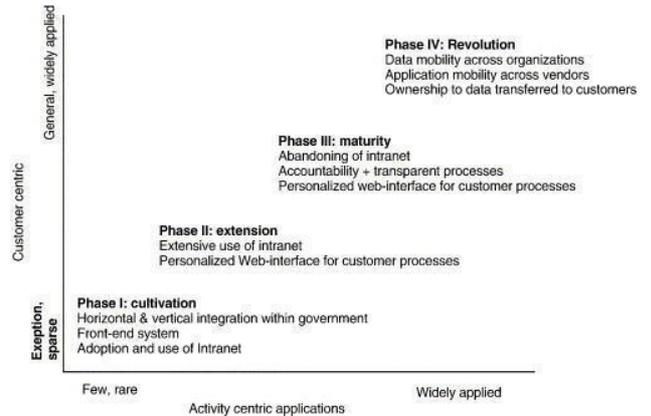


Figure 2 The PPR maturity model: activity and customer centric stages

In the cultivation stage there is limited use of front-end systems for customer service, adoption and use of Intranet within the government. There can be elements of self-service but most often in the form of PDF files that can be downloaded. The municipalities in this group are not likely to have digital services in focus. In the extension stage there is extensive use of Intranet and adoption of personalized web user-interface for customer processes. There is a distinction between “our data” and the services provided through them. The maturity stage is where municipalities mature and abandon the use of Intranet, have transparent processes and offer personalized web interface for processing customer requests. The key concern is to use IT to lower the marginal costs for processing the customer requests for services. The last stage, revolution, is characterized by data mobility across municipalities, application mobility and ownership of data is transferred to its customers. It can be concluded that municipalities in The Netherlands are in the extension stage. Since, personal matters, which can be defined as ‘customer processes’, can be adjusted online.

Citizen’s role in E government

Though Layne & Lee (2001) mainly observe the information system’s capabilities, Linders (2012, July 18) focuses on the citizen’s role in the E government through E-participation. Linders his paper concerns the citizen’s co-production during the web 2.0 era. Linders discusses the role of citizens in E government in being a partner or a customer. He makes a distinction between “Citizen Sourcing”, “Government as a Platform” and the “Do-It-Yourself” government.

The last level has a strong focus on a self-ruling community in which citizens take care of initiatives themselves instead of a top-down approach from government towards the citizens. For instance, organization volunteering initiatives in city parks and the establishment of a car-pooling community in the neighborhood. E government offers only assistance in terms of financial resources and the online infrastructure in creating these communities. The goal is that citizens have a leading role where the government is barely interfering.

In enabling an E government to reach the Do-it-Yourself level, variables such as trust in technologies and government play an important role. Warkentin, Gefen, Pavlou & Rose (2002), conducted a research in encouraging citizens to adopt E government.

Their research shows that it could be beneficial to start the adoption of the E government by offering the services to citizens that are more tech informed and open to changes in the interaction between the government and its citizens. These success stories could make it easier to translate E government to a broader audience through ‘word of mouth’ communication. This could also increase the level of trust in E government by citizens.

Citizen’s trust

Colesca (2009) stated that trust is among the important factors that could influence the success of establishing a successful E government. In case citizens do not trust the government, there will not be a high motivation to participate in the newest E government initiatives. Trust in E government is negatively affected by the age of the citizens and the privacy concerns in the country. In addition, the trust in E government is positively influenced by higher perception of trust in technology and organizations by citizens, the perceived quality and usefulness of E government services by citizens and their internet experience. Through campaigns and more investment in making citizens aware of the capabilities of the E government and how it could improve their interaction with the government, issues such as a lack of transparency and long waiting times could be resolved by increasing the presence of E government.

In addition to that, Butt, Kumar, Mukerji & Persaud (2007), consider trust as one of the factors for successful E government adoption. Trust in the E government is based on the trust in the government itself, for instance a clear distinction between the government and the legal system. In addition, the internet savviness of the population as well as their previous experiences with the E government form an essential role in building trust.

Creating awareness is also mentioned in this paper, as a strategy to create more trust by the citizens in the government.

Welch, Hinnant & Moon (2004) concluded that there is a positive correlation between citizen satisfaction with E government and the online environment. Creating user-friendly applications and websites engages the citizens more with the local government, which also creates more trust. Citizens demand transparency and interactivity between themselves and the government to establish a well-founded level of trust.

Bélanger and Carter (2008) makes a distinction between Trust on the Internet (TOI) and the Trust of the Government (TOG). Trust in the E government consists of the trust in the government as well as in the technology that creates the services it offers. The technology should ensure a secure environment in which transactions are secure and provides secure information concerning the local government. Trust of the Government is the certainty by the citizens that the government ensures its integrity and privacy. The local E government could be a trust-building construct that builds bridges between citizens and local governments.

Conceptual model

This research aims to identify how municipalities could apply E government given its current state of E government. The conceptual model shows the relationship between the variables ‘Trust in E government’, ‘Trust on the internet’, ‘the level of digitalization’, the ‘municipality’ and to what extent they are related to: ‘how municipalities could apply E government and what the current state of E government in municipalities are’. The conceptual model of this research is shown in Figure 1 below.

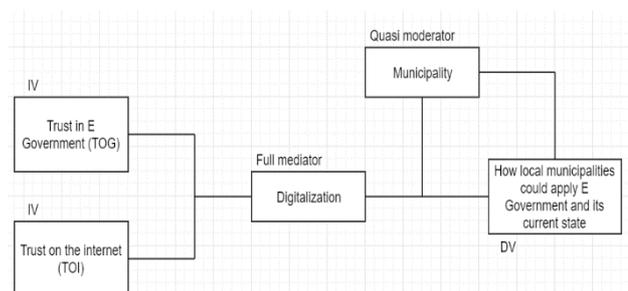


Figure 1 Conceptual model

METHODOLOGY

Independent variables

The independent variables in this research are 'trust in E government' and 'trust on the internet'. As mentioned in the theoretical overview, trust in E government is influenced by the use of technology, 'word of mouth' communication, age and the privacy concerns of the citizens, lack of transparency, trust in the government itself, satisfaction with E government and the online environment and efficient interactions.

What influences trust on the internet is also mentioned in the theory overview as the awareness citizens have regarding their capabilities, internet savviness of the population, previous experiences, user-friendly applications or websites and secure environment.

Bélanger and Carter (2008) show in their article that there is a positive relationship between trust on the internet and trust in government to the intention to use E government by a citizen. Therefore, we conjecture that TOI and TOG will also have a positive relationship in how municipalities could apply E government and its current state.

Full mediator

Digitalization can be measured using the framework that makes a distinction between four levels of activity centric applications: cultivation, extension, maturity and revolution Andersen & Hendriksen (2006). The phase of de digitalization is leading in how municipalities can apply E government since the highest level is characterized by integrated systems where all interaction between citizen and municipality can be done through an online environment. On the other hand, the Catalogue stage is a local government that offers all its forms online and there is an exhaustive amount of information available online (Layne, Lee, 2001).

Quasi moderator

The municipality intending to apply E government is a quasi-moderator in this research because according to (Jae Moon, 2002) the size and type of the municipality are significant institutional factors. Smaller municipalities are most likely to be less proactive and advancing in E government as bigger municipalities. In addition, a lack of good technical personnel and financial capacities are barriers for municipalities (Jae Moon, 2002).

Research framework

The field research focuses on how trust affects the integration of the E government on a local level. The interviews focus on the measures taken by the municipalities to improve the level of trust on the government as well as technologies concerning E government. Through interviews, it becomes clear on which level the local government is, based on the PPR model of Andersen & Hendriksen (2006) and what the exact relations between the variables are. Specific questions are asked to gather information to help with answering the questions.

Research design

In this chapter, the research design undertaken in this study is covered. The primary data collection technique used are interviews. For this report, a decision is made to use this technique for various reasons among which is the convenience and ease of administering them given the time constraints faced for this study. Other topics covered in this chapter include the sampling process, measurement and validity of the method.

Sampling process

Population

The population from which the sample for this study is drawn from comprises of IT professionals across municipalities. IT professionals are chosen because these are the interviewees best placed to provide good insights to the research and interview questions.

Sample frame

Judgement sampling is used as sampling design for this research, this technique has been chosen, due to the expert knowledge the interviewees are supposed to have and the limited time frame. In order to get a representative sample to interview, platforms like LinkedIn are used to search for professionals working at local municipalities. LinkedIn is chosen because there is no access to any central database where respondents can be randomly chosen. In addition, the personal network of the researchers is used in order to gain access to interviewees.

Sample design

This research is based on a non-probability sampling method given the fact that there is no broad sample frame to choose from. Hence, the respondents for the interviews are chosen based on convenience sampling. This therefore means the sampling type used in this research is non-probabilistic sampling with a focus on judgement sampling method given that the professionals interviewed are conveniently available and possess a high level of knowledge on E government.

Sample size

Given the limited time available to carry out this research, it is not feasible that the required sample size of 75 to 500 interviews will be achieved. To ensure that this research is feasible to accomplish given the above-mentioned constraints, the sample size is limited to one interviewee from the municipality Roosendaal. Also, if saturation is achieved, then it will be considered that this one respondent is enough for this research.

Data collection

According to Myers (2007), interviews are a primary way and method to collect qualitative research. With that in mind, to get a thorough understanding and answers to the research questions above based on structured interview questions will be used to collect the needed information. The results will be recorded, at a later moment transcribed, and analyzed.

Measurement

Given that getting enough information is needed over a topic with very minimal information available, this research is exploratory based and structured interviews will be used. After the interviews have been conducted, they will be transcribed and like terms will be put together for further analysis.

External validity

Given that convenience judgement sampling is the primary data collection method and the small sample size, the validity and reliability of the research will be low. However, the research wouldn't be considered useless as this is a good starting point for a more thorough research to be undertaken by researchers with not as much time constraints. In addition, though the research suffers from a low external validity, the internal validity of the research is not low given that focus was laid on avoiding interview related biases.

RESULTS

In this chapter the results from undertaken interviews are described and explained. Due to the limited time for this research project, one interview has been conducted to simulate whether this research is feasible. For this research, an IT expert from the municipality of Roosendaal was interviewed. Thus, the results are only generalizable for this interview.

However, the insights gathered from the interview will be valuable for this research and subsequent studies. The insights gained from this interview was of great value taking the explorative nature of this research into account. Further research could be built on this.

Results

The results from the interview are categorized into municipality, the independent variables mentioned in the conceptual model, digitalization and the citizens of the municipality.

Digitalization

According to the Puijenbroek (2019), the interviewee from the municipality of Roosendaal, the level of digitalization within the municipality Roosendaal depends on the following factors:

1. The demand and use of the process: Digitizing processes is cost-intensive and should cover the costs at the end. It is not always worth it to invest in digitizing each process. A good example is the application process of passports which happens frequently vs. certain building permits.
2. The level of customization: You don't digitalize customized work. Some proceedings only happen with the maximum of 10 times a year with high customization. It's not worth it to automate processes where a customized output needs to be generated.
3. The moment of contact with a citizen in a process: The more moments of contact with a citizen within a process, the more worth digitalizing/automating a process is.

The municipality of Roosendaal has digitized rapidly throughout the years. Some examples are extensive analyses on the click behavior on their website, certain applications to communicate with the citizens (e.g.: buiten beter app), establishing online communication channels through 'MijnOverheid', online resident surveys once a year about the local government, and social media monitoring to keep track of the online traffic concerning the municipality. These interactions help in establishing the relationship between the government and their citizens.

The website of the municipality of Roosendaal works as a platform (PaaS), this is a form of standardization and centralization. This website is not made by the municipality of Roosendaal itself but by an external company (Puijenbroek, 2019).

Independent variables

In the conceptual model Trust on the Internet and Trust in the Government are appointed as independent variables. According to Puijenbroek (2019) the independent variables 'willingness of the municipality' and 'demand of the citizens' also of influence how municipalities apply E government and its current state.

Municipality

According to Puijenbroek (2019) there are three things which municipalities must deal with:

1. Differences between municipalities: Not every municipality should be considered the same. The specific characteristics of the city, whether it has a stronger focus on tourists, students or other specific groups could have a major effect on the processes/strategies within the municipalities (e.g.: tourists, students, old, young).
2. Collaboration: Collaboration between municipalities only occur when they work with a comparable budget, ambition and on the same pace.
3. Access to target group: Reaching the target groups within the municipality is getting more difficult since the municipality knows the address, postal code but very often not the email of a citizen. The weak group is hard to reach via E governmental routes since they often do not have a computer or mobile phone (e.g.: elderly, and homeless people).

Citizen of the municipality

Moments of contact between the municipality and citizens are important. However too many contacts have a contradicting effect. A right balance should be found in the minimum contact between the two and to what is necessary to be of service for the citizens (Puijenbroek, 2019).

When the municipality wants to introduce new policies and ideas to its citizens, focus groups are involved.

The method that is used to develop new things is the waterfall approach (first gather necessary data and then develop) (Puijenbroek, 2019).

Analysis

The results show why an explorative approach was a good option for conducting this research. The interview has shown there are still missing variables when looking at the characteristics of municipalities.

The moderating variable in this conceptual model focuses on the influence of municipalities in general, but the results have shown that more research should be conducted on the characteristics of municipalities, hence whether it is a city that has a strong focus on tourists or students for instance. By focusing on the digitalization of municipalities in general, it becomes harder to ensure the external validity of the research.

Due to the complexity of the Information Systems and processes within the municipality, different processes within the organization should be perceived differently when looking at the level of digitalization and standardization. The high complexity also makes it harder to create standardization of processes.

Besides the characteristics of the municipality itself, the nature of the process is of importance. Some processes occur so sporadically that the costs of digitizing the process will never be met by the cost-reduction it could provide.

Another variable for the development of the E government is privacy. It is partly covered in the independent variables of trust. Besides the trust of the citizens and their concerns on privacy, the municipality is also legally required to meet the rules and regulations as formulated by the European Union (EU). The General Data Protection Regulation (GDPR) limits the level of standardization and integration within municipalities. Information gathered by the municipality cannot be shared with other governmental bodies only if it asked permission of the citizen. This limits the level of standardization and integration of different information systems across governmental organizations.

DISCUSSION

This paper presents in which of the four stages of the Public Sector Process Rebuilding (PPR) model Dutch municipalities are. In addition to this, research is done on how Dutch municipalities could apply E government technologies to improve their own operations.

The level of digitalization within a municipality depends on the demand and use of the digital process within the municipality. If the digitization process is cost-intensive and the demand is low, it will not be implemented. For instance, customized work is not digitized. In the specific case of the municipality of Roosendaal, the municipality did digitize swiftly with the analyses of click behavior on their website and certain applications.

“Trust on the Internet” and “Trust in the Government” are defined as independent variables in the conceptual model. In addition to these variables, the results introduce the concepts “Willingness of the municipality” and “Demand of the citizens”, since the conceptual model is mainly focused on end-users. Variables that are of interest from the perspective of the municipalities are also important.

The results also indicate that the development of E government differs for each municipality, due to the simple explanation that each municipality consists of different characteristics. Some of the municipalities have more technologically informed inhabitants. These results are backed up by the theory of Warkentin, Gefen, Pavlou & Rose (2002). They found that adoption of the E government could improve by offering the services to citizens that are more technologically informed and open to changes.

In addition to this, there is almost no collaboration between municipalities. This only occurs when two municipalities have similar budgets, ambitions and are on the same pace. Since there are 390 municipalities in The Netherlands and they are the third tier of the governmental administration, each with its own council, mayor and aldermen. The results are quite logical. The municipalities are decentralized and have autonomous power to make decisions about issues that only affect their own inhabitants, including their own E government.

Public Sector Process Rebuilding model

According to Andersen & Hendriksen (2006) and their Public Sector Process Rebuilding (PPR) model, an extension on the framework of Layne & Lee (2001), there are four stages to determine the level of digital application. The municipalities in The Netherlands, including the municipality of Roosendaal, are in the extension stage.

This is because there is an adoption of personalized web user-interface for customer processes, with the introduction of online communication channels such as ‘MijnOverheid’. However, there is still a clear distinction between “our data” and the services that are provided through them.

Citizen’s role in E government

Linders discusses the role of citizens in E government as being a partner or a customer. He makes a distinction between “Citizen Sourcing”, “Government as a Platform” and the “Do-It-Yourself” government. Dutch municipalities are (overall) in the “Government as a Platform”. Though there might be a few exceptions in the largest proportion of the municipalities where citizens do not take initiatives themselves. The municipalities develop/introduce new applications, in collaboration with its inhabitants in the case of focus groups, but there is a top-down approach from the government towards the citizens.

Citizen’s trust

It is stated that trust is one of the most important factors for a successful E government adoption, in addition, the internet savviness of the population. The results have shown that moments of contact between a municipality and its inhabitants are important. On the other hand, a right balance should be found since too much contact moments have a negative effect. Due to the lack of available data, no clear evidence was found of the importance of trust in the adoption of E government.

CONCLUSION

This research was set out to study the relationship between the trust citizens have in E government and how this influences them to make use of these services.

In a bid to answer this problem, the researchers investigated a previous model used by Andersen & Hendriksen from which it was concluded that the municipalities in The Netherlands, including that of Roosendaal is currently at the extension stage.

However, looking at an effective integration of E government within The Netherlands, it is at this moment not a one size fits all approach. From the interview conducted, there are certain limitations with respect to achieving this, among which is the disintegration of information systems and the European Union privacy laws which all municipalities need to adhere to.

Also, from the data obtained, it can be seen that effective integration of E government is a challenging task given that some processes need to be customized hence cannot be easily automated. Furthermore, municipalities comprise of different types of inhabitants, which makes it even more complicated to come up with a unified solution for all municipalities.

In addition, trust by citizens, which was the primary focus for an “effective use of E government” doesn’t play a great role in the use of E governmental services. However, other variables such as “Willingness of the municipality” and “Demand of the citizens” play an important part in establishing a smooth relationship between E government and its adoption by citizens.

Nevertheless, the broader group of Dutch municipalities fall under the “Do-It-Yourself” category and municipalities have recently been digitizing some of standard processes.

FURTHER RESEARCH

Due to the time constraints that were faced in this study, only one interview is conducted. Since the findings are based on one interview, this research needs to be continued to provide valid and reliable conclusions.

To maximize the internal validity in further research, it will be of interest to determine what information is needed before hand. The content of the (structured) interview can be prepared in advance, in this way bias can be prevented. This way, the question of “Is the information measured that was intended to be measured?” can be answered.

To maximize reliability in further research, the research design should be fully described. In this way it is able to reproduce the same research, and with that, similar findings. In addition to this, there should be internal consistency. This means that the questions in the research design have a connection to the problem statement.

This research did not find any clear evidence of the importance of trust in the adoption of E government. Further research is needed to establish a relationship between trust in the government and the adoption of E government.

Further studies should also take into account that municipalities are decentralized. While the overall perspective of the government and their municipalities is similar, each municipality has its own priorities and point of view which should be considered.

REFERENCES

- Andersen, K. V., & Henriksen, H. Z. (2006). E-government maturity models: Extension of the Layne and Lee model. *Government Information Quarterly*, 23(2), 236–248. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0740624X05000973>
- Andersen, K. N., Medaglia, R., Vatrappu, R., Henriksen, H. Z., & Gauld, R. (2011). The forgotten promise of e-government maturity: Assessing responsiveness in the digital public sector. *Government Information Quarterly*, 28(4), 439–445. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0740624X11000542?via%3Dihub>
- Bélanger, F., & Carter, L. (2008). Trust and risk in e-government adoption. *The Journal of Strategic Information Systems*, 17(2), 165–176. Retrieved from: <https://www.sciencedirect.com/science/article/abs/pii/S0963868707000637>
- Bonsón, E., Torres, L., Royo, S., & Flores, F. (2012). Local e-government 2.0: Social media and corporate transparency in municipalities. *Government Information Quarterly*, 29(2), 123–132. Retrieved from: <https://doi.org/10.1016/j.giq.2011.10.001>
- Government of The Netherlands, (2019). Municipalities. Retrieved from: <https://www.government.nl/topics/municipalities>
- Heeks, R., & Bailur, S. (2007). *Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice* (Vol. 24). Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0740624X06000943?via%3Dihub>
- Jaeger, P. T., & Thompson, K. M. (2003). E-government around the world: lessons, challenges, and future directions. *Government Information Quarterly*, 20(4), 389–394. Retrieved from: <https://doi.org/10.1016/j.giq.2003.08.001>
- Katz, R., Koutroumpis, P., & Martin Callorda, F. (2014). Using a digitization index to measure the economic and social impact of digital agendas. *info*, 16(1), 32–44. Retrieved from: <https://doi.org/10.1108/info-10-2013-0051>
- Layne, K., & Lee, J. (2001). Developing fully functional E-government: A four stage model. *Government Information Quarterly*, 18(2), 122–136. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0740624X01000661>
- Linders, D. (2012). From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. *Government Information Quarterly*, 29(4), 446–454. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0740624X12000883>
- Moon, M. J. (2002). The Evolution of E-Government among Municipalities: Rhetoric or Reality? *Public Administration Review*, 62(4), 424–433. Retrieved from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/0033-3352.00196>
- Myers, M. D., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization*, 17(1), 2–26. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S1471772706000352>
- Pardo, T. (2000). Realizing the Promise of Digital Government: It's More than Building a Web Site. *Center for Technology in Government*. Retrieved from: http://www.ctg.albany.edu/media/pubs/pdfs/realizing_the_promise.pdf
- United Nations. (2018). *UN E-Government Knowledgebase*. Retrieved from: <https://publicadministration.un.org/>: <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>
- Welch, E. W. (2004). Linking Citizen Satisfaction with E-Government and Trust in Government. *Journal of Public Administration Research and Theory*, 15(3), 371–391. Retrieved from: <https://academic.oup.com/jpart/article-abstract/15/3/371/941130>