Master thesis

The contribution of electronic public service implementation in the Netherlands and Germany on cross-border cooperation in the Euregio-region

by

Anna Schmitz (s1755137)

Profile: Digital Communication

Submitted in partial fulfilment of the requirements for the degree of Master of Science, program Public Administration, University of Twente

Final version: 24th of February 2020

Supervisors:

Dr Veronica Junjan, the first supervisor from the University of Twente

Dr Annika Jaansoo, the second supervisor from the University of Twente

Tom Lamers, deputy managing director from the organisation Euregio

UNIVERSITY OF TWENTE.

Preface

Dear reader,

The basis for this research originally stemmed from the course 'Innovative Digital Public Services' I took during my master studies. The course got me interested in the broad topic of e-government, including electronic public services and its future potential as well as its drawbacks. As I grew up in Germany and decided to follow a bachelor and master programme in the Netherlands, my life became an example case for living across the border and the benefits open borders between EU countries offer. While living abroad I quickly encountered many smaller and bigger cultural differences between Germany and the Netherlands, learned the Dutch language and got in touch with different approaches to handle public services for citizens. At the doctoral thesis defence of Dr Annika Jaansoo, I came to realise what cross-border cooperation entailed. From then on, I have been interested to write my master thesis about the topic's electronic public services and cross-border cooperation. With the support from my supervisors from the University of Twente and the support from the EUREGIO organisation, I have been able to set up research about this topic, one that is relevant for the academic world as well as for practitioners. I hope you enjoy reading my master thesis. Just let me thank some people first!

In truth, I could not have achieved my master's degree without a strong support group. First of all, I would like to thank my first supervisor Dr Veronica Junjan, her guidance and input have helped me enormously in writing the master thesis. In addition, I would like to thank my second supervisor Dr Annika Jaansoo for her input and her detailed and useful feedback. Secondly, I would also like to thank Mr Tom Lamers, the supervisor from the organisation Euregio, for his support, enthusiasm about cross-border cooperation and the interesting talks we had. Last but certainly not least, I would like to thank my parents, who always support me with their love and helping hands. A big thank you also goes out to my friends, especially Sarah who has been my "partner in crime" throughout the entire master thesis project, we can now be both called Master of Science graduates, what an achievement! Lastly, thank you Rick, for your love, support and your belief in me, whenever I felt completely overwhelmed by this challenging project you helped me to move on. Thank you all so much for your unwavering support!

Anna Schmitz

24th of February 2020

Enschede (The Netherlands)

Abstract

The research presented in this thesis is about the contribution of electronic public service implementation on the cross-border cooperation between Germany and the Netherlands in the Euregio-region. The explanatory research question is*: To what extent does the implementation of electronic public services in municipalities contribute to cross-border cooperation in the Euregio-region?* It is crucial to understand which factors hamper and support the implementation process and how the electronic public service development can contribute to the already existing cross-border cooperation between Germany and the Netherlands. The research design is a case study of the cross-border region Euregio. For this thesis, secondary data from policy or strategy papers as well as newly generated primary data from a survey are used to answer the central research question. The secondary data is analysed using the method of a realistic literature review, the data from the survey is analysed by descriptive analysis and statistical tests using the statistical software programme SPSS. The research topic is of scientific relevance as the field of cross-border cooperation is only marginally studied from a public administration point of view and electronic public services are on the rise in EU-countries.

Table of content

1.0 Introduction

This chapter introduces the topic of the master thesis, discusses the central research question and the three sub-questions. The scientific and societal relevance of the thesis is also discussed.

1.1 Topic

The topic addressed in this master thesis is the electronic public service implementation in municipalities and its contribution to the cross-border cooperation within the Euregio-region, a border region including Germany and the Netherlands. The research aims to investigate the contribution electronic public services can make to enhance cross-border cooperation between the public authorities in the Euregio-region. Electronic public services are on the rise in EU countries yet the speed and extension of the development concerning e-government, online identification tools and e-services offered by the municipalities to the citizens differ tremendously among the Member States. As the European Commission states in their 'Digital Economy and Society Index 2019' Finland, Sweden, the Netherlands and Denmark are the most advanced digital economies in the EU, whereas Bulgaria, Romania, Greece and Poland score the lowest. When looking at the overall percentage for the five tested dimensions, being connectivity, human capital, use of internet services, integration of digital technology and digital public services, the Netherlands rank third of the 28 EU member states, whereas Germany ranks on the 12th place (Digital Economy and Society Index Report 2019, p.2). Even though the change from traditional service channels to electronic channels promises to make communication with citizens more efficient, as well as a less costly for the government, the developments in European countries vary. However, in all EU-countries more and more governmental services for citizens become digitalized such as registering the residency at the municipality office. For some citizens this change sounds compelling as arranging an appointment at home on the laptop is quicker than going to the municipality office in person. In the city of Enschede in the Netherlands, it is possible to register the new residency within the same city digitally by logging in with an online Identification tool called DigiD. However, when one moves from another city to Enschede, one has to register the new residency at the municipality office, an appointment can be arranged online, by doing so the processes works more time-efficient for the citizen as well as for the municipality (Gemeente Enschede, 2019).

As strong differences concerning the electronic public service implementation are visible between EU countries, but not all EU member states can be analysed, this thesis focuses on the electronic public service implementation in two countries, by name Germany and the Netherlands. Furthermore, the focus is laid on one specific region, looking at the 124 municipalities in the Euregio-region and their electronic public service implementations. The Euregio-region has originally been set up more than 60 years ago to strengthen cross-border cooperation in that region which composed of a part in the Netherlands and a part in Germany along the Dutch/German border and is chosen as case for this research. Cross-border cooperation is added to this research because it is considered highly relevant by the EU as it fosters European integration and promises economic development of the border regions. In this thesis, it is

being researched *whether electronic public service implementation of municipalities is an opportunity to contribute to the already existing cross-border cooperation*. Furthermore, the following questions are raised in this master thesis: Which obstacle exists when implementing electronic public services? Which factors enable the implementation of electronic public services? Which measures have been taken by public authorities in both countries to strengthen cross-border cooperation? Are online services able to ease the way, when citizens want to register their new residency at the municipality office? What is the current state of implemented electronic public services on the municipal level in Germany and the Netherlands? A few of these questions lead to the sub-research questions of this research, which are explained in detail in the following subchapter. A statement from the EU underlines the importance of the thesis topic: "Many public services such as personal documents, tax claims, company registration or VAT are available online but this is not always the case across borders. Just like digital services in the private sector, cross-border digital public services are building blocks to a connected continent and a real digital single market" (EU Commission, 2018).

This thesis aims to contribute to the already existing studies about electronic public services and cross-border cooperation as more scientific knowledge is still needed in these fields of research. From an academic perspective, it is interesting to investigate the extent to what electronic public services are implemented on the municipality level and which challenges they face in the implementation process. The digital developments in municipalities are foremost relevant for citizens who make use of them, however when municipalities would like to commit to cross-border cooperation with municipalities on the other side of the national border then new challenges appear. When actively practising cross-border cooperation still many stumbling blocks hinder an efficient and effective process. For cross-border organisations all over Europe, such as for example the Euregio organisation, it takes a lot of time and work to realise cross-border cooperation projects as they must deal with two different administrative systems of the neighbouring countries. The inefficiency of processes costs time and effort as sometimes documents must be handed in digitally, or on paper or both, depending on the public authority in charge of the cross-border cooperation project. The differences in administrative systems between the countries have often been experienced as an obstacle by cross-border organisations. These are problems arising when municipalities, companies or cross-border organisations would like to work together and aim to start a project across the border. Differences in administrative systems pose also difficulties for citizens who would like to work, study or move to the neighbouring country. For example, when registering the new residency address at the municipality office, the citizen faces different procedures depending on the municipality regulations. To investigate the current state of electronic public service implementation and its influence on cross-border cooperation between Germany and the Netherlands, the cross-border region named Euregio, has been chosen as a case study. The discussion over the choice for case selection can be found in subchapter 3.3.2. The purpose of this research is to gain new insights about the electronic public service developments in the Netherlands and Germany and eventually provide a clearer picture of the electronic public service potentials for cross-border cooperation. As the electronic public services

are attributed a large potential to revolutionize the communication between public authorities and the citizens (Bekkers & Zouridis, 1999), this topic is perceived as highly interesting to explore within a public administration master thesis.

1.2 Research question and sub-questions

The central research question for the master thesis is:

To what extent does the implementation of electronic public services in municipalities contribute to cross-border cooperation in the Euregio-region?

The central research question is an explanatory question aiming to explain the relation between the 'implementation of electronic public services' and 'cross-border cooperation' in a specific region. The unit of analysis of the central question are the municipalities in the Euregio-region. The unit of observation are the municipalities as well. Moreover, when determining the variables of the main research question, two can be identified. The independent variable is the electronic public service. The dependent variable is cross-border cooperation. The setting deals with time and place of the research, regarding the central research question the place is the Euregio-region and the research uses policy and strategy documents from the past 10 years as well as conducting a survey concerning the topic at stake. The municipalities located in the Euregio-region and their implementation of electronic public services and their cross-border cooperation are in the focus of this research. In the methodology's subchapter 3.3.2 is explained why the Euregio-region has been chosen as case for this study. Based on the central research question and its sub-questions, this thesis aims to provide an analysis of electronic public service implementation in the Netherlands and Germany on the municipal level and the contribution to cross-border cooperation in the Euregio-region. The core concepts used in the central research question and its sub-questions are elaborated on in the conceptual framework subchapter 2.2 of this master thesis.

Three sub-questions have been defined to fully address the central research question. The first sub-question is:

1. *What are the factors that support or hamper the implementation of electronic public services on the municipal level?*

The first sub-question is a theoretical question. The first sub-question will be answered by the literature review in the theory chapter and aims to identify the factors that support or hamper the implementation of electronic public services. The first sub-question focuses specifically on the implementation of such services and therefore contributes to answering the central research question.

The second sub-question reads as follows:

2. *Which measures have been taken by Dutch and German public authorities on the municipal, district/regional and the federal-state/province level to enhance cross-border cooperation?*

The second sub-question is an empirical question and an explanatory research question. This sub-question aims to clarify which measures have already been taken by Dutch and German public authorities on three different administrative levels to enhance the cross-border cooperation between Germany and the Netherlands. The second sub-question will be addressed by conducting a realistic literature review. The literature review discusses cross-border cooperation in different policy fields between Germany and the Netherlands. The focus of this question lays clearly on the cross-border cooperation aspect of this master thesis and therefore helps to answer the central question as well.

The third sub-question is formulated as follows:

3. *Which electronic public service is provided for citizens who need to register their residency in municipalities within the Euregio-region?*

The third sub-question is an empirical question and an explanatory research question. The third sub-question will be answered by conducting a survey. The third question helps as well to answer the central question, as it focuses on one service that is provided by the municipalities on the German and Dutch side of the border. Due to the time limitations of this master thesis project, the decision has been made to pick one service as an example case for this study and not focus on more services. The chosen service is residency registration as the municipalities have a monopoly on the provision of this service. Furthermore, this service is a fundamentally public service, as it can affect every citizen when they move within or across municipalities in the Netherlands or Germany. By choosing an example service this question shall provide more in-depth information about the developments of electronic public service implementation in the Dutch and German part of the Euregio-region.

1.3 Scientific and societal relevance

The research topic is of scientific relevance as the field of cross-border cooperation is only marginally studied from a public administration point of view, therefore the master thesis is a great contribution to already existing literature in other fields of study, other than cross-border cooperation and public administration literature, such as regional studies or European integration studies. This study adds to previous research as it focuses on the electronic public service developments in Germany and the Netherlands in the cross-border region Euregio. This thesis makes it possible to analyse the electronic public service implementation on the municipal level in Germany and the Netherlands, and the contribution of electronic public services to the cross-border cooperation between these countries in the Euregio-region. In order to increase the amount of electronic public services provided, it is important to clarify which factors hamper and support the implementation of electronic public services for researchers in that field as well as for practitioners implementing new electronic public services in

municipalities' in other parts of the Netherlands and Germany or other EU-countries. Ibrahem Zahran et al (2015) confess that the research field of local e-Government needs further research. As cross-border cooperation is a rather new field of study, this thesis aims to broaden the horizon a bit further in this research field. However, the topic of electronic public service contribution to cross-border cooperation is of importance for the academic world as much as for the society. As the provision of electronic public services changes the way public authorities communicate with the citizens and cross-border cooperation is important because it strengthens the relations between countries and paves the way for EU citizens who work or move across the border.

As electronic public services offered by the municipal authorities confront citizens in each municipality with the new technologies whether the citizens or civil servants prefer this way of communication or not. This change in the public service is perceived as a challenge for the entire society as new ways of information, communication and transaction processes within the municipal offices are implemented. However, citizens can benefit from a comprehensive electronic public service implementation in their municipality as it makes the communication with the municipal office flexible, less time consuming and important information is pooled together on one website. Furthermore, the topic of this thesis is regarded as relevant for society as it is crucial to understand what hampers or strengthens electronic public service implementation. As well as which role citizens play in the implementation process and what effects the implementation has on cross-border cooperation between two countries in one specific cross-border region. Moreover, it is of special importance for the citizens who must register their residency in their current country of residence or the new country of residence across the border to be aware of the procedures concerning appointment making, documents required and so forth. It is relevant for society's future and possible new policies to investigate whether the municipalities provide actively information online or still prefer offline communication with the citizens. Additionally, the development of new technologies does not end at a geographical border, it is of general interest to provide more information about the implementation of electronic public service on the German and Dutch border side, which challenges appear along the way and how it can be used to strengthen the cooperation across borders. The insights gathered by this research can be interesting for other European cross-border cooperation organisations, German and Dutch municipalities, national governments and can also contribute to a more successful European society. Finally, the findings of the master thesis are aiming to generate new knowledge about electronic public services, cross-border cooperation and its interplay for the scientific world as well as generate profound knowledge for the society about this topic.

Reading guide

After the introduction in chapter 1.0, the academic literature relevant for the master thesis is discussed in the theory chapter 2.0, also the conceptual framework and the first sub-question are addressed. The methodology used for this research is outlined in chapter 3.0. In chapter 4.0 the realistic literature review is conducted; the results of the literature review and the online survey are discussed, and the

second and third sub-question are addressed. The final chapter, conclusion chapter 5.0, addresses the central research question of this master thesis.

2.0 Theory

In chapter 2.1 the academic literature on electronic public service implementation and cross-border cooperation is reviewed. Next to that, the main concepts of this research are explained in the conceptual framework in subchapter 2.2. In the last subchapter, 2.3, the first research sub-question will be addressed.

2.1 Literature review

In the following subchapter, the academic literature concerning electronic public service implementation and cross-border cooperation is discussed.

Electronic public service implementation

Electronic public services are part of the broad field of e-Government. Different terms are used among international scholars in the field of public administration and information systems, to some scholars, e-Government is described as digital government, one-stop government or online government, however, e-Government is the prevalent term used in Europe (Bojang and Bwando, 2018). Furthermore, the term e-Government can be defined as "the use of ICTs [including internet, telephone, community centres, wireless devices or other communications systems] to promote more efficient and effective government, facilitate more accessible government services, allow greater public access to information, and make government more accountable to citizens" (Bojang and Bwando, 2018, p.5). Ibrahem Zahran, Al-Nuaim, Rutter and Benyon (2015, p.31) critically analyse e-Government evaluation models of national and local governments in their research. They describe that "e-Government reduces travel and waiting time (moving processes from in-line to on-line), eliminates corruption, reforms government, increases transparency, enhances the relationship between government and citizens, and ultimately develops democracy." Furthermore, Ibrahem Zahran et al (2015) claim that e-services are cheaper, faster than their offline counterparts and readily available 24/7. In their research, they underline that the field of local e-Government needs further research, as online services differ from country to country due to significant differences in the political and economic systems.

In Bojang and Bwando's (2018) research, the focus is laid on e-Municipality, considering it as "one of the sub-groups of e-Government that gives e-Services to citizens in a smaller scale in cities" (2018, p.4). Bojang and Bwando (2018, p.5) define e-Municipality "as the organisation which provides its services to citizens rapidly, easily and safely by using ICTs". Their research indicates that several public services can be provided as online services such as "completing and sending forms, administrative affairs such as receiving or extending construction license, saving files and software programs through the sites which are supervised by the municipalities, opinion survey and e-Learning as well as financial interactions such as payment of fines, tax, e-Shopping and even holding governmental bids and auctions" (Bojang and Bwando, 2018, p.7). As municipalities are recognized as one of the main elements of government for providing satisfactory public service to the citizens, Bojang and Bwando see the

development of e-Municipality as the most important aspect of e-Government. Furthermore, they believe that "If some necessary conditions are provided for establishing an e-Municipality, many advantages will be created, such as the reduction of government responsibility in presenting electronic services, delivering the services more accurate and efficient, cost reduction on public sectors, transparent local government and easier access to services for citizens will be provided" (Bojang & Bwando, 2018, p.10).

Whereas, Bekkers and Zouridis (1999) stress in their article how information and communication technology improves the quality and efficiency of service delivery. As Bekkers and Zouridis (1999, p.193) state, "an efficient, business-like public administration" is what leading politicians are promoting. However, other researchers such as van Deursen, van Dijk and Ebbers (2006) address the gap between the potential and actual usage of electronic public services in the Netherlands and use a model of four kinds of access to technologies. They argue that a lack of motivation, physical access and digital skills contribute to the lack of using electronic public services. The authors attest a mismatch between the supply by the government to offer as much as possible online and the demand of the citizens to use online channels instead of traditional service channels. They note as well, that it is interesting that such a gap even exists in a country with top-level internet and broadband connections such as the Netherlands. This implies that access to the internet is not the only thing to consider when offering digital public services. They conclude that the government does not know enough what the citizens want and that a lack of user orientation in the Dutch e-Government services exists. In an article by van Dijk, Peters and Ebbers (2008), the authors agree with the previously discussed article by van Deursen, van Dijk and Ebbers (2006), as they state that the actual use does not increase with the expansion of the service supply. In their research, they identified factors such as access, experience, digital media preference and the knowledge of the availability of these services that explain the gap between supply and actual use of electronic services.

Bertot, Jaeger and McClure (2008) address in their article the expectations about the efficient and effective e-Government on the one hand and on the other hand the citizen-centred e-Government approach. Bertot et al (2008) argue that governments need to actively seek information about the needs and expectations of the citizens about services in order to improve the public services, but that information is hardly available. They found out that citizens are not asked for feedback in order to improve the services. Next to that Bertot et al (2008) identified barriers to e-Government, such as, for example, the complex design of the website, language barriers, the need of resources such as email and online banking. Public librarians explained that people usually seek help because of the lack of a computer, the lack of skills, or they do not understand the website and need assistance in person. Furthermore, Bertot, Jaeger and McClure (2008) conclude that only e-Government services that are used by the citizens are cost-saving and successful in the long-term. Furthermore, van Deursen, van Dijk and Ebbers (2006) clarify that service provision efforts have reached different degrees of sophistication in

European countries. An article by Mergel (2019) attests that Germany, just like the Netherlands, lack user-centricity of online services. In Germany, the Online Access Act[1] initiated a digital transformation in the public sector, including the redesign of internal and external public services at the state, federal-state and municipality level. Based on the Online Access Act all administrative services shall be digitally in Germany by the end of 2022.

Bekkers and Homburg (2007, p. 373) state that "Modern information and communication technologies (ICTs), especially internet and web technologies, are seen as enhancing the access, transparency, efficiency, and quality of public administration." However, they indicate in their research that this vision does not seem to be the reality, as "the goal of integrated electronic service delivery, especially in relation to contact and transaction services, leads in practice to serious integration and coordination problems" (Bekkers and Homburg, 2007, p. 377). The authors describe that the coordination problems appear because of the ambiguous distribution of legally defined competencies and tasks among the back offices. Plus, most actors would not see the necessity to work together which hinders the cooperation. Moreover, integration problems are seen as a technical problem due to incompatibility of data systems or missing service delivery structures, whereas the process of service delivery depends strongly on the institutional design including actors, interests and power of these actors, resources and a common vision (Bekkers and Homburg, 2007). Moreover, they warn that "citizens will demand a public administration that also uses the possibilities of the Internet in *optima forma*: a public administration that enables them to act as empowered and intelligent citizens. These assumptions about the role of the citizen and government are not without risk" (Bekkers and Homburg, 2007, p. 379).

The research from Otjacques, Hitzelberger and Feltz (2007) shows that online identification tools differ between European countries and sometimes there are sector-specific systems. The different systems are a clear obstacle when data shall be shared between organisations. It is troublesome in a cross-border administrative process. Particularly, the exchange of data between organisations in the private and public sector or crossing border becomes more and more important in order to provide integrated business and governmental services. From such integrated systems, the cross-border cooperation organisations situated across European borders would certainly benefit. However, there is no one-fits-all solution for all European countries concerning the identification in e-Government as factors such as national culture, legal aspects, costs and technical-feasibility affect installing such solutions. The extent to what identification tools are implemented is strongly interdependent with data protection, therefore concerns and questions about the privacy of data arise when electronic information systems are implemented. Depending on the kind of organisation and the kind of purpose, the data collected from the citizens can be highly sensitive, for example, medical records, financial transaction, tax documents and so forth. As the information systems collect increasingly person-related sensitive data, the security of such data is of

---

[1] The Online Access Act (Onlinezugangsgesetz-OZG) which came into force in August 2017 and the law obliges the federal states and municipalities to offer administrative services digitally by 2022. The law seeks for better collaboration by creating uniform standards across administrative levels.

the highest importance. The trust into the secure data storage might explain the divergence between countries about what extent identification tools in the public sector are implemented. According to Otjacques, Hitzelberger and Feltz (2007), despite the privacy issues, the collection and processing of personal data in information systems are necessary in order to provide efficient services to citizens and businesses and enable government organisations to work together more efficiently.

Cross-border cooperation

The thesis aims to gather more information about the electronic public service implementation in a specific region and its contribution to cross-border cooperation in this region. At first, the academic literature on cross-border cooperation is discussed, followed by literature on creating cross-border regions to enhance cross-border cooperation. Finally, cross-border regions are discussed in more detail.

The research field of cross-border regions is fragmented in different disciplines such as, for example, Regional studies, European Integration studies or Borderland studies. In this thesis, the approach is taken from a public administration perspective on cross-border cooperation in such a cross-border region. According to Badulescu and Badulescu (2013, p.2), cross-border cooperation can be defined as "establishing neighbourly relations between communities and local authorities on both sides of the border." Concerning the administrative level of cross-border cooperation, Jaansoo (2019, p. 43) states "Cross-border cooperation is a phenomenon that can be found at every administrative level of government – it can be among nation-states, but also among regions and municipalities." When it comes to cross-border cooperation and the provision of services, these are typically cooperative arrangements that seek joint strategies to reorganize the services provided by public authorities (Sousa, 2013).

Sousa (2012) states that cross-border cooperation can not only be used to foster freedom in labour, goods, services and capital exchange but it is also responsible to oversee the impact of these exchanges and how it can strengthen the cultural and linguistic ties and the public service provision in a region that includes two different national jurisdictions. Sousa (2012) identified five drivers of effective cross-border cooperation: economic factors, political leadership, cultural/ identity and state formation as well as geographical factors. Due to the cross-border cooperation activities all over Europe European citizens are coming closer together, however, Sousa (2012, p.4) assesses "still many stumbling blocks to citizens who work, live and go to school across the border, non-visible trade barriers and obstacles to co-operation in various policy sectors (e.g., environmental issues, police co-operation, contingency planning, public transport links, provision of health services and so on)."

Sousa (2012) is not the only author who observes such difficulties, Badulescu and Badulescu (2013) conclude in their research that cross-border cooperation faces many obstacles and includes failures due to specific laws and regulations, the lack of financial resources, bureaucracy, centralisation and hierarchical management in public institutions. Van den Broek and Smulders (2015) state as well that

cross-border settings can be problematic due to divergent laws, norms, values and regulations. Klatt and Herrmann (2011) emphasize that especially the different laws and legal ordinances can be identified as key administrative barriers to cross-border cooperation. In their research, they outlined the differences between the systems on each side of the border and concluded that the German and Dutch tax-and social-security systems are more aligned than the Danish and the German systems. However, concerning the organisation of the labour market, regulations in job protection and the labour milieu including hierarchies, formalities and workplace communication the differences between the Netherlands and Germany turned out to be large. Terlouw (2008) agrees that despite the growth of cross-border cooperation, nation-state borders still hamper cross-border cooperation in several ways. In order to overcome border-related obstacles and enhance cross-border cooperation, cross-border regions have been created across the nation-states all over Europe.

Perkman and Sum (2002) point out that the role of cross-border regions as existing phenomena and as objects of strategic intervention has received attention from academic disciplines such as geography, economic sociology, international relations, political science, public administration and regional and urban studies. Perkman and Sum (2002, p.3) define a cross-border region as a "territorial unit that comprises contiguous sub-national units from two or more nation-states." Whereas, Lina and Bedrule - Grigoruta (2009, p.2) define a cross-border region as: "a cross-border structure established between entities of local or regional government across the border in order to promote their common interests." Furthermore, Lina and Bedrule -Grigoruta (2009) describe in their research, that the cross-border regions are one instrument to foster the social, economic and cultural development of border regions and cross-border cooperation. The European Union, as well as the Council of Europe, view the development of cross-border cooperation as one of the their top priorities, because to them strengthening the developments in cross-border regions not only ensures a balanced development of regions in Europe but also ensures the integration of the European continent (Lina and Bedrule -Grigoruta, 2009).

According to Perkmann (2007, p.65), the role of cross-border regions is predominantly one of an information centre provider, network organizer and support organisation while actual governance of cross-border activities remains low. Perkmann (2007) also says that cross-border regions vary tremendously in structure, finance and commitment and can be comprised very different entities such as municipalities, counties, regions, provinces, federal states but also chambers of commerce, regional trade union offices or foundations. Perkmann and Sum (2002, p.5) explain that cross-border regions are "usually constituted through cooperation among border municipalities, districts or regions. These units typically comprise between one and two million inhabitants and cover areas located within a distance of 50km from both sides of the borders." As mentioned earlier, the European Union, especially the European Commission, actively encouraged public and private actors to create durable cross-border cooperation to enhance the economic development of border regions (Perkmann and Sum, 2002). Van Houtum (1998) assesses that the first incentive to start cross-border cooperation is the stimulation of

economic growth and prosperity for the border region. Often such border regions are testing ground for pilot projects of practical cross-border cooperation, therefore Euregions are also called "laboratories of Europe" or "testing laboratories of European integration" (Wolf, Hollederer and Brand, 2006, p. 667).

Despite the difficulties cross-border cooperation is facing, the field of local public service provision and cross-border cooperation remain an open and interesting area for both researchers and practitioners. Concludingly, even though there is ample literature available on both electronic public services and cross-border integration, there is still little known about the embeddedness of electronic service provision in cross-border cooperation. Coming from this conclusion, this thesis aims to address this gap by providing additional knowledge about this specific topic.

2.2 Conceptual framework

The two main concepts used in the research question and sub-questions are electronic public services and cross-border cooperation. In this subchapter, the main concepts and its dimensions are outlined.

Electronic public service implementation

The concept of electronic public services is in the broad spectrum of e-Government. The concept of e-Government services is defined by van Dijk, Ebbers and van de Wijngaert (2015, p.1) as "online public services delivered by a government or semi-government (partnership) organisation to citizens following the laws and regulations of a nation-state describing rights and duties." For this master thesis, these services are described as electronic public services and not e-Government services in order to avoid confusion with e-governance or e-participation or other e-Government processes. The concept of electronic public services for this master thesis is defined as online public services delivered by a municipal authority to the citizens. For this thesis, three forms of electronic public services are relevant: the first being information service (whether the citizen can retrieve information about residency registration online), the second being communication service (whether the citizen can make an appointment online), and the third being self-service (whether the citizen can change his residency himself by logging in with an online identification tool).

Service implementation can be understood as the implementation of public services, a service provided to all members of a community, like a municipality or a province. Furthermore, public service is defined as "Public services 'serve' members of the public – they provide goods or services to individuals, families and communities" (Spicker, 2009, p. 973). Additionally, Spicker (2009, p. 970) lines out that "public services have four defining characteristics, they exist for reasons of policy, they provide services to the public, they are redistributive, and they act as trust." Moreover, the European Union has framed its policies on the basis that public services are in the public sector: "in principle, public services are the responsibility of public authorities." (European Commission, 2005, p. 25). For this master, the concept

is defined as a service that is provided to serve the members of the public, it must be implemented by a public authority such as a municipality.

Cross-border cooperation

The concept of cross-border cooperation can be defined in several ways. Perkmann (2003) defines cross-border cooperation as "a more or less institutionalized collaboration between contiguous subnational authorities across a national border." (Perkmann, 2003, p. 156) Getfert (2009, p.10) defines it as follows "Cross-border cooperation is a form of international cooperation exercised bilaterally or multilaterally between countries or regions across shared and non-shared borders to yield benefits or reach common goals" (Gerfert, 2009, p.10). The master thesis addresses direct cross-border cooperation defined as a form of collaboration of different countries, regions and/or municipalities sharing the same border intended to yield benefits and reach common goals. As the case of this thesis is the Euregio-region, the countries involved in the cooperation are Germany and the Netherlands. The commitment of the municipalities in the Euregio-region, being for example a member of the Euregio council, indicates their interest in working together for a common purpose or benefit.

2.3 Addressing the first sub-question

In this subchapter, the first sub-question will be addressed based on the literature discussed in the theory subchapter 2.1. The first sub-question is as follows: *What are the factors that support or hamper the implementation of electronic public services on the municipal level?* The question is a theoretical research question and its relevance for the central research question has been outlined in subchapter 1.2. It is hardly possible to present all factors that support and/or hamper the implementation of electronic public services on the municipal level, however, this thesis aims to cover the most important factors according to the presented literature. At first, the factors that support the implementation of electronic public services are addressed, secondly, the factors that hamper the implementation of electronic public services are discussed.

The article by Carter and Belanger (2005) and Becker et al (2004) focus on supporting factors. Carter and Belanger (2005) developed in their research a new model of e-Government adoption. Furthermore, they tested whether the following five factors are supporting the use of electronic public services: political support, bureaucratic support, citizens trust including compatibility and trustworthiness of the systems and the ease of use of the e-services provided. The results of their research indicate that "perceived ease of use, compatibility and trustworthiness are significant indicators of citizens' intention to use state e-Government services" (Carter and Belanger, 2005, p.22). Becker et al (2004) identified in their research, the following three potential success factors of e-Government initiatives: e-Government awareness, budgetary funding and organisational change. Whereas other authors, such as Bojang and Bwando (2018), focus on hampering factors. Bojang and Bwando (2018, p.3) underline in their research that "delivering services to citizens is one of the most important responsibilities of local governments and involves information exchange, it easily fits the profile of a main target field in terms of e-

Governance." In their research, Bojang and Bwando describe five of the most common challenges to the successful implementation of e-Government services and eventually the establishment of an e-Municipality. The first challenge is e-Readiness, Bojang and Bwando (2018, p.7) describe it as "the realisation of goals in order to establish e-Municipality depends on the examination of conditions and the amount of readiness in the country, the region, the area, the city from the ICT perspective which is called e-Readiness." Another factor that challenges the implementation is an effective and efficient digital infrastructure. Setting up such an infrastructure needs time, effort and commitment from the national and local government as substantial changes in the organisation and administration are needed. Another hampering factor is human resource development, government employees should be trained to regularly keep up with the recent ICT innovations. Two other factors hampering the implementation of electronic public services have been identified by Bojang and Bwando, the legal framework and the digital divide.

Pieterson, Ebbers and van Dijk (2007) describe in their research obstacles that may possibly hinder the implementation of personalized e-Government services. Their research split the obstacles into two categories, the organisational and the user obstacles. "The organisational obstacles are the internal obstacles governments have to deal with while implementing personalized electronic government services. The user obstacles are the obstacles user face when engaging in personalized e-services" (Pieterson, Ebbers and van Dijk, 2007, p.149). As this master thesis is viewing the implementation of electronic public services from an organisational and not from a citizen perspective, only the five organisational obstacles identified by Pieterson, Ebbers and van Dijk are discussed. The first obstacle is called process-based, meaning that the redesign of processes and organisations are complicated and costly in terms of time and money. The second obstacle is of financial type if there is not enough funding supplied then it can slow down the implementation of e-Government services. Another obstacle is governance-based, raising the question of what department, administration, ministry is responsible for which development. The fourth obstacle is of technical matter, meaning that many legacy information systems are not, or not sufficiently enough, interoperable, which makes it harder to add a new e-Government service application on top of the existing information systems (Pieterson, Ebbers and van Dijk, 2007, p.154). The last obstacle is the legal framework, which has been mentioned by Bojang and Bwando (2018) as well. Governments face legal obstacles as legislation has to be adapted due to the implementation of e-Government services. Pieterson, Ebbers and van Dijk (2007, p.153) give the examples, that "In Austria, for instance, several new laws had to be passed in order to manage e-Government services. In Germany, approximately 3.700 (articles of) laws had to be adapted to the Internet."

Whether the terms barriers, challenges or obstacles are used in the literature, for answering the first sub-question they are all considered as factors that hinder the implementation process of electronic public services. On the last note, every country has a different administrative system, the factors that hamper

and support the implementation of electronic public services may differ per country. Furthermore, the factors supporting, or hampering are not restricted to the municipal level, a country's national strategy concerning the digitalisation of the public administration and the implementation of e-Government services play a crucial role in the process. A country's government is in charge to provide sufficient funding, to set in motion organisational change and to be aware of e-Government opportunities. For these reasons a country's government can either push or slow down the implementation process of electronic public services. The literature indicates that it is not only up to the municipal administrators to diminish the factors that hamper the implementation and strengthen the factors that support the implementation of electronic public services. The theory chapter shows that there is ample literature about the contribution of electronic public services on cross-border cooperation, but the topic is not yet well researched through by academia. Nonetheless, the first sub-question has been able to address, according to literature the main incentives to implement electronic public services are that e-Government provides efficiency both on the side of the government and for citizens. Obstacles that can be seen are the availability of funding, awareness of e-Government, both from governments and citizens, and organisational change e-Government requires. Besides that, the theory chapter discussed relevant scientific literature and presented the conceptual framework. The following chapter addresses the methodology used for this master thesis project.

3.0 Methodology

This chapter includes the methodological steps necessary to conduct the research for this master thesis. At first, the research design is described, followed by the selection of the research case, then the data collection method is explained. This chapter then outlines how the data is analysed, followed by the operationalisation. The last two subchapters address the limits of the research design and research methods as well as the ethical issue of such research.

3.1 Research design

The research question, as well as the sub-questions, are empirical questions. The central research question posed in this master thesis is an explanatory one and is answered by a mix of qualitative and quantitative data analysis. The research design for this thesis is a case study of the Euregio-region. The case study comprises a time span from 2011 up until 2019, to research the recent developments in the past years. It has been chosen to investigate the developments of roughly the past ten years as that increases the chances to find more useful data, however, the data can still be considered as actual.

A combination of two data collection methods is used to conduct the research. One research method is a realistic literature review, following the criteria set by Pawson et al (2005). In this review, secondary data such as policy or strategy papers regarding cross-border cooperation published by the municipalities or districts within the Euregio-region are analysed. The other research method is a statistical analysis of primary data collected via an online survey. The survey is sent to the 124 municipalities in the Euregio-region where two policy officers, who engage in public service delivery or cross-border cooperation of the municipality, are asked to answer the survey questions about the topic at stake. The choice to combine two research methods for this thesis has been made to provide a more comprehensive picture of the current state. Finally, it enables a comparison between second data information from the policy and strategy papers with the primary data information retrieved from the survey.

3.2 Research case

This subchapter introduces the case of the Euregio-region, it outlines why the respective case has been chosen and which kind of case study is conducted in this research. To obtain a better overview of the geographic location, a map of the Euregio-region is provided in figure 1 below.

Figure 1: Map of the Euregio-region

3.2.1 Case description

Along the border between the Netherlands and Germany (the federal state North Rhine-Westphalia and the federal state Niedersachsen) four Euregios are located which play an important role in the cross-border cooperation along this border: the Euregio with its headquarters in Gronau, Euregio Rhein-Waal with its headquarters in Kleve, Euregio Rhein-Maas-Nord with its headquarters in Mönchengladbach and the trilateral Euregio Maas-Rhein with its two headquarters in Eupen and Maastricht. Euregios act as a hub and platform for intercommunal and interregional cooperation to promote the social and economic development of their region. To this end, they also dispose of and administer Interreg funding from the EU, which can also be used to take account of regionally specific characteristics (Staatskanzlei des Landes Nordrhein-Westfalen, 2019). The Euregio case chosen for this research is the first official cross-border region in Europe, which has been founded in 1958 on the Dutch-German border. Today, the Euregio consists of 129 municipalities, towns and administrative districts who work together across the border. The Euregio organisation has a long history and already spent more than 50 years building and reinforcing cross-border structures, in economic, social and other domains (Euregio Organisation, 2019). The name Euregio stands for European region. The Euregio-region includes geographically in the Netherlands parts of the Province Overijssel, Province Gelderland and Province Drenthe and parts of the German federal states Lower-Saxony and North-Rhine – Westphalia. The region spans some 13,000km^2 and has about 3,37 million inhabitants (About Euregio, 2019).

According to Perkmann (2007, p.258), the Euregio "has established itself as a legitimate and competent agency responsible for cross-border matters in this specific geographic area." He further describes how the Euregio is governed, the executive board composes the key member authorities and a cross-border 'parliament' the Euregio Council. The Euregio has been part of a study conducted by Getfert (2009). Getfert (2009) has identified in her research a list of characteristics of public cross-border cooperation in order to compare different kinds of cross-border cooperation. Those characteristics are for example direct or indirect cooperation, a top-down or bottom-up strategy, number of countries, number of actors, whether the institutional set up is federal or central, how the cooperation is funded and at which stages it acts on, such as the information, consultation, cooperation or integration stage. Next to other kinds of cross-border cooperation, such as the U.S.-Mexico Binational Commission (BNC) or the France-Vaud, Geneva Conurbation, she categorized the Euregio organisation according to her characteristics in her research. The Euregio has been set up to increase the chances of prosperity and peaceful relations in the border regions more than 60 years ago. The cooperation takes place over a shared border, so it is a direct form of cross-border cooperation. Furthermore, Euregio has a bottom-up strategy as the cooperation resolves from municipal and regional interest and has not been initiated by the national governments. The actors involved in the cooperation are located both on the municipal and regional level. Public entities cooperate on common goals to increase their capacities and influence on EU policies. Furthermore, the Euregio has created a network that supports private entities who aim to strengthen the integration of the private sector in the border region. The main goals tackled by the Euregio are practical ones, focussing on the facilitation of cross-border cooperation in general.

Furthermore, Klatt and Herrmann (2011) compared four different cross-border regions with each other along the Dutch-German and Danish-German border, one of these cases has been the Euregio. In their research, they describe the history of the cross-border regions, explain the extent of responsibilities of Euroregions today and outline the difficulties cross-border cooperation faces. Concerning the Euregio Klatt and Herrmann (2011,p.69) point out that "With its institutional network stretching from small municipalities to the European Commission, the Euregio has successfully spread a narrative of being a model cross-border region linking the local via the regional to the European level and thus being an important institutional entrepreneur within European multi-level governance." As the Euregio can be anticipated as a relatively advanced case of cross-border cooperation, the choice has been made to use this region as a case for this research.

3.2.2. Case selection

The case of Euregio has been chosen for numerous reasons which are discussed in this paragraph in greater detail. The Euregio-region includes Dutch and German municipalities which enable a closer look at the electronic public service implementation in both countries along the border. However, the research

especially focuses on the municipal level as at the local level the citizens interact much more with the municipal offices than they do with national authorities. In addition, the municipal offices are the place where most fundamental public services are provided to the citizens. From European commission data (Digital Economy and Society Index Report 2019) appears that the Netherlands and Germany are implementing electronic public services on different paces. It is particularly interesting to see how the differences in the development of electronic public services might impact the cross-border cooperation in the border area. The Euregio-region has a long history in cross-border cooperation which ensures a commitment of the municipalities to work with municipalities across the border and not only with municipalities in their own country. Plus, two rather practical reasons have contributed to the choice. Firstly, the University of Twente is located within the Euregio-region which makes it easier to generate primary data via the survey as the addressed municipalities are close by to the University. Secondly, the researcher conducting this thesis speaks Dutch and German which enables her to understand policy and strategy papers in Dutch and in German. For the listed reasons, the choice has been made to focus on the cross-border region Euregio.

Moreover, the Euregio-region has been chosen for a case study instead of an experiment or a cross-sectional study as time and resources are limited. According to Zainal (2007), a case study allows the exploration and understanding of complex issues and can be considered a robust research method particularly when an investigation is required. The intention of the master thesis is to investigate the contribution of electronic public services on cross-border cooperation, therefore, a case study is considered as the most appropriate research design. The case can be categorized as an embedded single-case design including multiple units of analysis according to Yin (2014) as it is a single case of the Euregio-region. However, attention is given to the several subunits, by name the municipalities within the region and their implementation of electronic public service. Yin (2014, p. 56) states in his book that "The subunits can often add significant opportunities for extensive analysis, enhancing the insights into the single case". Because one goal of the research is to gain a clearer picture of the implementation state of electronic public service in the municipalities in the Euregio-region, this case design is considered as the most adequate choice. The case of the Euregio-region can be considered as a typical case, as the electronic public service development in Germany and the Netherlands is comparable to those in other EU countries. However, because of the cross-border element in this research, the case can be categorized as an influential case following the criteria set by Seawright and Gerring (2008). The specific context of the cross-border region makes the case not generalizable for other countries or regions, that aligns with Seawright and Gerring (2008) categorisations of cases in cross-case studies. For example, one criterion of influential cases is that "an influential case is typically not representative" (2008, p.297). Finally, the theoretical dimension of interest can lead to the conclusion that the case is an influential case, as it analyses cross-border cooperation between countries with different levels of e-Government service provision.

3.3 Data collection methods

For this research, a mix of data collection methods is applied. The choice to use a mix of qualitative and quantitative data for the analysis has been made to get a more comprehensive picture and analyse similarities or differences in the results. Within the time frame of the master thesis assignment, it seems feasible to use two data collection methods and conduct qualitative and quantitative data analysis. Using two different methods for the analyses offers the chance to obtain more results and generate new knowledge. As one analysis uses secondary data and the other one generates primary data, the data collection methods complement each other by providing different data to answer the research questions. First, the data collection method for the realistic literature review is discussed, secondly, the description of the data collection method for the survey is outlined.

The secondary data collection for the realistic literature review is conducted through desk research. The secondary data needed for the research are policy and strategy papers about cross-border cooperation. These papers are derived online from municipal websites or have been sent to the researcher by the municipality, district or province/federal state itself. A request via email has been sent to 308 contacts from the Euregio organisation, including the municipalities in the area, asking for an eligible policy or strategy papers helping the researcher to gather more data. As the response from the German side of the border was lower than from the Dutch side of the border, another email has been sent from the researcher herself to the federal state governments in Germany asking for strategy and policy papers about cross-border cooperation in the Euregio-region. An example of such policy or strategy papers is the "Ambities voor samenwerking met Duitsland 2019-2027" from the City of Enschede, one of the larger cities in the Euregio-area located in the Netherlands. In table 1a and 1b, which can be found in the appendices of this master thesis, it is laid out in more detail which and when municipalities responded to the email requests. In these tables, all responses have been documented, regardless of whether their response helped to find or provided policy or strategy papers eligible for the realistic literature review. Overall, it can be summarized that the Dutch municipalities sent their responses quickly, mostly with papers attached to their email, whereas German municipalities replied slowly with mostly reference to a link in their email.

To analyse the papers a realistic literature review following the criteria of Pawson et al (2005) is conducted. A minimum of twelve relevant policy or strategy papers need to be collected in order to perform the review properly, otherwise, it is not possible to identify similarities and difference in the findings and draw a representative picture. The papers are chosen based on the relevance for the topic of the thesis, their availability online, the issuing authority and the date of publication. However, in the design of the realistic literature review method, Pawson et al (2005) ensured that the policy and strategy papers are suitable by applying the inclusion and exclusion criteria. A realistic literature review has been chosen over a systematic literature review, as the structure of this review provides guidance without being too stringent, a framework that is considered to fit better within this thesis.

The second data collection method used in this research is an online survey. This is a primary data collection method and the data is conducted by field research. The great opportunity for field research offers is the generation of new data. While constructing the survey much is taken into consideration such as, for example, different types of questions, the content of the questions, the wording of the question and in what format the questions shall be answered. The 'Qualtrics' online survey tool of the BMS faculty of the University of Twente is used to construct the survey. The survey generates quantitative data, these are measures of counts and are expressed as numbers. The survey in the form of a questionnaire has been sent early December to each municipality in the Euregio-region plus other public entities that are located within the Euregio-region. The total number of email contacts the survey has been sent to is 308. In total 105 fully answered responses were collected, this entails 34% of the total of 308 contacts. Next to that 59 incomplete responses were identified in the data set, totalling 19%. In the data analysis, only the fully answered and not the incomplete responses to the survey are used. After almost two weeks, before Christmas, a first reminder to fill in the survey has been sent out. At the beginning of January, a second reminder to fill in the survey has been sent aiming for a few more responses. The connections of the Euregio and its external network helped tremendously spread the survey with those who are the target group of the survey. Their effort helped to increase the response rate of the survey.

3.3.1 Selection criteria and selection process

The policy papers serve as evidence in the realistic literature review with what the programme theories are tested. The programme theories used for this realistic literature review are elaborated on in subchapter 4.1.1. According to the logic of Pawson et al (2005), the evidence is gathered by selective sampling and not by random sampling. Four inclusion and exclusion criteria have been determined for the selection process of the policy papers. The first criterion was to pick policy and/or strategy papers and exclude scientific articles, government declarations, texts of law and so forth. The second criterion, used to select relevant papers for the realistic literature review, was that the policy or strategy paper had to be published by municipalities or districts (Kreise in Germany or Region in the Netherlands) or federal state governments in Germany or provincial governments in the Netherlands. The first step was to get an overview of the Euregio members therefore a list of municipalities, districts, provinces and federal states has been retrieved from the Euregio website. The researcher examined the municipality and the federal-state and provincial governments' websites for eligible papers and then contacted the Euregio members via email in order to receive more papers relevant for the analysis. The third selection criterion is the language of the documents, the documents should be written in German or Dutch or English, as those are the only relevant languages regarding this case study. The fourth and last criterion for selecting the policy or strategy papers was the topic addressed in the papers: the papers have to address fields of cross-border cooperation or measures taken or measures planned by the previously mentioned publishers to enhance cross-border cooperation across German-Dutch border. Policy or strategy papers which do not meet these criteria are excluded from the analysis. Also were excluded papers which only address

Interreg programmes. The inclusion and exclusion criteria for the selected policy papers can be found in table 2 below. The list of the chosen policy papers is presented in Table 3 in the appendix.

Table 2: Inclusion and exclusion criteria for policy papers

	Inclusion Criteria	Exclusion Criteria
1	Policy papers, strategy papers	Scientific articles, government declarations, texts of law etc.
2	Policy or strategy papers stemming from the municipalities or districts (Kreise in Germany and Regios in the Netherlands) or from the federal state government in Germany or provincial government in the Netherlands within the Euregio-region	Papers stemming from the national government in the Netherlands, Germany, the EU, or international organisations or institutions
3	Papers are written in German, Dutch or English	Papers that are written in any other language
4	Policy or strategy papers addressing fields of cross-border cooperation or measures to enhance cross-border cooperation across German-Dutch border	Policy or strategy papers not addressing cross-border cooperation Policy or strategy papers only addressing Interreg-programmes

After applying the inclusion and exclusion criteria, 12 policy or strategy papers have been selected for the analysis. Those papers are published by various administrative levels, such as municipality, region or province in the Netherlands and districts or federal state level in Germany. Despite the inclusion and exclusion criteria, eventually, a decision about which papers to include and which to exclude from the analysis, had to be made, as more than twelve papers fulfilled the inclusion criteria. By making a choice, selection bias is inevitable, however, the analysis aims to reflect on the cross-border cooperation efforts across the Dutch-German border, therefore six German papers and six Dutch papers have been picked. Furthermore, papers from different administrative levels have been picked on purpose in order to draw conclusions from a broader picture. See table 3 in appendix 1, where a list of the analysed policy and strategy papers is provided including the title of the paper, the publisher and publication year.

3.3.2 Relevance and rigour

The relevance and rigour are important elements of the realistic literature review method. According to Pawson et al (2005) relevance in a realist review is not about whether the empirical study covers one specific topic but whether it addresses the programme theories under test. Thus, the programme theories are considered as most relevant in the realistic literature review. This definition distinct the relevance of the literature review clearly from the societal and scientific relevance of the study discussed in section 1.3. The second element is rigour, which is according to Pawson et al (2005) whether a particular

inference drawn by the original researcher has sufficient weight to make a methodologically credible contribution to the test of a particular intervention theory. In simple phrase, rigour means whether the research conducted supports the conclusions drawn from it by the researcher.

3.4 Data Analysis

The research aims to review the policy papers concerning cross-border cooperation and compare those results with the results of the survey. For clarification, the first sub-question is addressed by the theoretical chapter of this master thesis, whereas the second sub-question is addressed by the realistic literature review and the third sub-question addressed with the results of the survey. Based on the results from the realistic literature review and the survey the central research question is addressed. Within this section, at first, is described how the data analysis was executed in conducting the realistic literature review, followed by a description of how the survey data is analysed.

To analyse the secondary data from the policy and strategy papers, the method of a realistic literature review following the criteria of Pawson et al (2005) is executed. This research method has an unfolding design, evolving within the analysis of the data. The research method of a realistic literature review works by organizing, structuring and coding policy papers. The coding of the documents is done with the help of the software 'atlas.ti,', a computer program for qualitative data analysis. The process of a realistic literature review following the criteria of Pawson et al (2005) was executed as follows. Firstly, adequate policy or strategy papers are selected, due to the unfolding design of the research method, the content of the papers is evaluated regarding its relevance and rigour. Then, programme theories are constructed including criteria to test in the analysis. For clarification, according to Pawson et al (2005) programme theories are the underlying assumptions about how an intervention (e.g. policy, strategy, programme or project) is meant to work and what impacts it is expected to have. Then the data is extracted from the policy papers, followed by synthesizing the data by checking the data extraction table again for similarities and differences in the findings. Based on this process the programme theories can be refined. The conclusion of this analysis is drawn based on the data extraction and the synthesizing process, leading to the refined programme theories which illustrate the results of the realistic literature review. To address the central research question the results of the review and the statistical results of the survey are used.

To analyse the data gathered by means of a survey a quantitative analysis is conducted. With the help of the software 'SPSS', a computer program for statistical analysis, descriptive analysis and statistical tests have been conducted with the survey data. Next to these tests, frequency tables, cross-tabs and 'other descriptive analyses' have been run in SPSS to investigate the available data. The survey data contains 105 fully fulfilled surveys and 59 partly fulfilled surveys. However, the 105 cases had to be cleaned in order to only test responses which the study aimed to test. This means that surveys where respondents did not fill in their position have been deleted. It is because due to the anonymity of the survey, it was not possible to track whether the respondents work for a municipality or for another public

entity. Additionally, other respondents who indicated with their position that they are currently not employed at a municipality or another public entity, have been deleted from the data set. Data, where the position of the respondent was not mentioned, was not included in the analysis, as a result 78 cases remained. This data has been split into two groups: those who, according to their position title, work for a municipality (62 cases in total), and those who work for a different public entity (16 cases in total). The data allows the researcher to distinguish between two different groups what is considered beneficial, as then the perceptions from both groups about electronic public services can be compared.

3.5 Operationalisation

The following paragraph discusses how the independent variable electronic public service implementation and the dependent variable cross-border cooperation of the central research question; *To what extent does the implementation of electronic public services in municipalities contribute to cross-border cooperation in the Euregio-region?* are measured. The first sub-question is a theoretical question and therefore no operationalisation is needed. The second sub-question addresses the dependent variable of the central research question, by name cross-border cooperation. The third sub-question addresses the independent variable of the central research question, by name electronic public service implementation. To obtain a better overview of the theoretical concepts, variables, measurement and data collection method used in this research, see table 4.

Table 4: Operationalisation table

Theoretical concepts	Variables	Definition (context related)	Measurement	Data collection method
Electronic public services	Electronic public services	"Online public services delivered by a municipal authority to citizens"	Agreement of existence of such services by the policy officers	Survey (Question 5-6)
	Public service implementation	"A service that is provided to serve the members of the public, which must be implemented by a public authority"	Agreement of existence of residency service implementation by the policy officers	Survey (Question 11-13)
	Cross-border cooperation	"A form of collaboration of	Explicit statement that they are partners in a	Documents

Cross-border cooperation	different countries, regions sharing the same border intended to yield benefits and reach common goals."	cross-border cooperation	
	Policy fields of cooperation	Explicit policy area, they engage in a particular service sector/industry	Existence of cross-border cooperation policy fields	Documents
	Measures	"A plan or course of action taken to achieve a particular purpose"	Explicit indication of using an instrument to achieve cooperation	Documents

For the quantitative data analysis, the concept of electronic public service implementation and its respective variables are relevant. The variable 'electronic public service' can be defined as "Online public services delivered by a municipal authority to citizens" and measured by the agreement of the existence of such services by the policy officers in the survey, i.e. whether electronic public service has been implemented in their municipality or not. Because it can be answered by yes or no, it was defined as a dichotomous variable. The other variable 'public service implementation' can be defined as "A service that is provided to serve the members of the public, which must be implemented by a public authority" and measured by the agreement of the existence of residency service implementation by the policy officers in the survey. Therefore, again it is a dichotomous variable.

For the qualitative data analysis a realistic literature review is conducted and the operationalisation, therefore, follows a specific procedure. The context of this study is the Euregio-region, the mechanism at work in this analysis are the programme theories and their refinement. The outcome is the result of the analysis providing insight about what works, what does not work and what has been done so far. The data must be tested by using criteria derived from the programme theories. The data extraction procedure has been executed according to Pawson et al (2005) as follows: the data is extracted by note-taking and keywords and not by extracting data as such. This procedure supports the evaluative framework with evidence when data is extracted from different documents. Followed by the data extraction and the data synthesis, the programme theories can be refined, and the conclusion can be drawn from it. The criteria used in the programme theories are explained in table 5 below and are tested in the analysis. The extraction of the data is completed by filtering the eligible papers by keywords, using the following ten ones: cross-border cooperation, measures, infrastructure, energy, labour market,

tourism, health care, public service, culture, education. In the data extraction table 7a, which can be found in appendix 3, is also stated whether those criteria are present or not in each of the selected policy papers.

Table 5: Explanation of four criteria used in programme theories

Criteria:	Explanation:
Cross-border cooperation	Explicit statement that they are partners in a cross-border cooperation
Measures	Explicit indication of using an instrument to achieve cooperation
Policy fields of cooperation	Existence of cross-border cooperation in different policy fields

Another important aspect of research is the validity and reliability of the measurements. Concerning the validity, the measurements used in this research cover the concepts, dimensions and variables relevant for this research. In other words, the measurements measure what is desired to assess in this study. The second element is reliability: when the same methods and measurements are applied again, the same results should be obtained again. Concerning the reliability of this study, the coding used in the realistic literature review provides reliability, as well as the survey does for the inter-item correlation.

3.6 Limits of the research design and research method

In all research designs and methods are potential threats and limitations involved. The threat regarding statistical analysis of survey data is the lack of sufficient data to carry out statistical tests. The other research method, a realistic literature review, involves threats as well. There might be a lack of sufficient data available or a strong variation in the quality of the data available. Another threat can be the researcher itself, a research bias can occur by, for example, prioritizing certain papers and leaving out other papers in the analysis. Furthermore, the validity of the answers to the research questions for more cross-border regions than the Euregio-region and for more policy fields than the electronic public service implementation is limited due to the single-case study design. Another limitation is the limited possibility to generalize the results because of the context-specific nature of the results regarding the case of the Euregio. Despite the possible threats and limits, the chosen research design and research methods are considered the most appropriate.

3.7 Ethical issues

In order to conduct research within the University of Twente BMS faculty involving humans indirectly or directly, it is necessary to fill in an ethical approval form. The ethics committee is responsible to approve the intended research and to monitor the ethical conduct of all research involving human beings within the faculty. Because for this research, a survey is conducted, which is considered as direct involvement with human beings, the researcher is required to request approval from the ethics committee and from her supervisors. The approval was granted under number 191138 by the ethics committee.

Next to the ethical issues of such a master thesis project, the methodology chapter addressed the following subjects in its subchapters: the research design, case selection, data collection, data analysis, operationalisation, the limits of the research design, research method and ethical issues of such research. To conclude, a case study is conducted using the case of the Euregio-region. Secondary data is analysed with a qualitative data analysis using the research method of a realistic literature review following the criteria of Pawson et al (2005). Furthermore, a survey is conducted generating primary data which is analysed by using the computer software SPSS. In the following chapter, being the analysis chapter, the realistic literature review will be discussed, and the results of the survey will be described and discussed.

4.0 Analysis

The first part of the analysis chapter addresses the realistic literature review. The analysis methodology follows the criteria set by Pawson et al (2005) and is outlined step by step in this chapter. Based on the results of the review the second sub-question is addressed and a discussion of the results is presented. In the second part of the analysis chapter the survey is addressed, the descriptive analysis and statistical tests carried out are explained. Based on the survey results the third research question is addressed, and a discussion of the results is presented.

4.1 Realistic literature review

Following the criteria set by Pawson et al (2005), at first, the policy papers are selected based on selection criteria, followed by evaluating the papers regarding their relevance and rigour. Thirdly, the programme theories are formulated, followed by the data extraction lastly, the data synthesis is conducted leading to a refinement of the programme theories.

4.1.1 Programme theories

This section discusses the programme theories which provides the basis for the realistic literature review. Programme theories are according to Pawson et al (2005) the underlying assumptions about how an intervention is meant to work and what impacts it is expected to have. For this review, the underlying assumptions named as programme theories are derived from the second sub-question of the central research. It is common to test several programme theories within a realistic literature review. In this thesis, two programme theories are tested, what is considered sufficient, as another analysis is conducted by doing a survey. The concepts used in the research questions of this master thesis are derived from scientific literature and elaborated further in the theory chapter 2.0

Programme theory 1

In the realistic literature review, two programme theories are tested following the guidelines of Pawson et al (2005). The first programme theory illustrates one underlying assumption of the second sub-question, which has been formulated in section 1.2 as follows: *Which measures have been taken by Dutch and German public authorities on the municipal, district/regional and the federal-state/province level to enhance cross-border cooperation?* Hence, programme theory 1 focuses on the cross-border cooperation policy fields and is defined as follows: Explicitly mentioned policy fields of cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level. The criteria used to test programme theory 1 are cross-border cooperation and policy fields of cooperation with their assigned keywords to analyse the papers.

Programme theory 2

The second programme theory illustrates another underlying assumption of the second sub-question. Programme theory 2 focuses on the measures taken to enhance cross-border cooperation and is defined

as follows: Explicitly named measures to enhance cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level. The criteria used to test programme theory 2 are cross-border cooperation and measures with their assigned keywords to test the policy or strategy papers. The following table 6 displays a summary of the two programme theories and the criteria used to test the programme theories.

Table 6: Summary of Programme theories

	Programme theory 1	**Programme theory 2**
Assumption:	Explicitly mentioned policy fields of cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.	Explicitly named measures to enhance cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.
Criteria of programme theory:	Cross-border cooperation, policy fields of cooperation	Cross-border cooperation, measures

4.1.2 Data extraction

For the analysis, twelve policy or strategy papers are reviewed. The selection procedure of the papers is described in subchapter 3.3.1 'selection criteria and selection process' of the master thesis. Based on inclusion and exclusion criteria, six papers from Germany and six papers from the Netherlands addressing cross-border cooperation have been selected. These papers are from different administrative levels such as the municipality, region and province level in the Netherlands and district and federal-state level in Germany. The extraction of the data is completed by sorting the papers by keywords such as cross-border cooperation, measures, infrastructure, energy, labour market, tourism, health care, public service, culture, education. The keyword cross-border cooperation has been derived from the criterion cross-border cooperation, the keyword measures has been derived from the criterion measures, whereas the other eight keywords infrastructure, energy, labour market, tourism, health care, public service, culture and education are assigned to the criterion policy fields of cooperation. In the data extraction table 7a, which can be found in appendix 3, is stated whether those criteria are present or not present for each of the selected policy papers.

To provide a comprehensive picture, the data extraction table 7a is divided into four categories and set up as follows: The name of all twelve policy or strategy papers are listed in a column, each of the criteria cross-border cooperation, measures and fields of cross-border cooperation has a column. The executed data extraction including the criteria can be found in table 7a in appendix 3. A more detailed version including all keywords of the data extraction can be found in table 7b in appendix 3. An overview of the

number of keywords used in total is provided in table 7c, showing how often a keyword has been extracted in the papers altogether. The data extraction includes three different tables as only then a clear view on the extraction procedure and its results can be provided.

4.1.3 Data synthesis

The data synthesis is about reviewing the data extraction tables and identifying similarities and differences of the findings in the policy or strategy papers. Based on the data synthesis, the programme theories can be refined. Table 8 below summarizes the identified similarities and differences.

Table 8: Data Synthesis

	Programme theory 1: Explicitly mentioned policy fields of cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.	Programme theory 2: Explicitly named measures to enhance cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.
Similarities of findings in policy papers	o Cross-border cooperation is important to all public authorities analysed o The policy field of culture has been named in 11 of 12 (179 in total) and education in 12 out of 12 papers (398 in total), indicating its importance to all public authorities analysed, as well as the policy fields Labour Market (106 times in total) and Energy (190 in total) are named very often o Health care and public service are the policy fields the public authorities are engaging the least according to the results	o The keyword measures is named 52 times in total o Non-tangible measures are named more often than tangible measures o Cross-border cooperation is important to all public authorities analysed; it is in total named 71 times
Differences of findings in policy papers	o In the Dutch papers the keyword public services has been named in 4 out of 6 papers, whereas in the German papers it has not been mentioned at all	o Measures have only been mentioned explicitly in 7 out of 12 papers o Tangible measures were only mentioned in three documents,

	o Health care is named in 3 out of 6 German papers whereas it is not named in any of the Dutch papers	the 'Benelux Strategie NRW', the 'Gros Arbeitsliste Niedersachsen-Niederlande' and the 'Drentse Duitslandagenda'
	o Tourism is named in 8 out of 12 papers, in a total of 54 times, and the keyword infrastructure has been mentioned in 9 out of 12 papers, in a total of 83 times	

Refinement of programme theory 1

Following the data extraction, the data synthesis has been conducted leading to a refinement of the two programme theories. Through the data synthesizing process, it is possible to make a more specific assumption about the cross-border cooperation policy fields between German and Dutch authorities in the Euregio-region. The refined programme theory 1 is: *The policy fields of education, culture, labour market and energy are mentioned the most for cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.* Cross-border cooperation policy fields where German and Dutch public authorities most actively engage in have been identified in the analysis leading to a refinement of the programme theory.

Refinement of programme theory 2

Through the data synthesizing process, it is possible to make a more specific assumption about the measures used by German and Dutch public authorities to enhance cross-border cooperation in the Euregio-region. The refined programme theory 2 is: *Building up networks, exchanging knowledge, develop working and monitoring lists are named as measures to enhance cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.* In table 9 below a summary of the first assumption and the refined assumption of programme theory 1 and programme theory 2 is provided.

Table 9: Summary of refined Programme theories

	Programme theory 1 :	**Programme theory 2:**
First assumption:	Explicitly mentioned policy fields of cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.	Explicitly named measures to enhance cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.

Refined assumption:	The policy fields of education, culture, labour market and energy are mentioned most for cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.	Building up networks, exchanging knowledge, and develop working and monitoring lists are named as measures to enhance cross-border cooperation by Dutch and German public authorities on the municipal, the district/regional and the federal-state/province level.

4.1.4 What is it about this programme that works, for whom, and in what circumstances?

The final step of synthesizing the data to refine the theories is done with the intention to determine what works for whom and under what circumstances. According to Pawson et al (2005, p.22): "In systematic reviews, the basic evaluative question is: 'what works?', whereas in realist reviews, the question changes to: 'what is it about this programme that works, for whom, and in what circumstances?'" According to the results, for the public authorities under test cross-border cooperation is especially strong in four policy fields: education, culture, energy and labour market. In the case of cross-border cooperation what works best depends a lot on the circumstances including the cross-border cooperation partners, the policy field they would like to cooperate in plus other factors such as project size, budget, previous projects together and more.

4.1.5 Addressing the second sub-question

In this subchapter, the second sub-question will be addressed based on the realistic literature review discussed in subchapter 4.1. The first sub-question is as follows: *Which measures have been taken by Dutch and German public authorities on the municipal, district/regional and the federal-state/province level to enhance cross-border cooperation?* The question is an empirical research question and its relevance for the central research question has been outlined in subchapter 1.2. The refinement of the programme theories helps to answer the second sub-question. Based on the refinement of programme theory 1 it can be stated that cross-border cooperation is strong in the policy fields of education, culture, energy and labour market. Primarily, based on the refined programme theory 2 an answer can be given to the second sub-question as it focuses more specifically on the measures to enhance the cross-border cooperation. The data extraction tables show that the keyword 'measures' has been named in 7 out of 12 papers, 52 times in total. In order to provide an answer to the second sub-question a more detailed review of the keyword 'measures' has been necessary. The analysis showed that only a few instruments have been mentioned to achieve cooperation in Dutch and German papers. Furthermore, some papers provide tangible measures whereas other papers remain vague on describing measures. The explicit instruments used to achieve cross-border cooperation are discussed in further detail below.

Firstly, measures that already have been taken to actively cooperate across the border, have been described in papers published by the states of Lower-Saxony and North-Rhine Westphalia. They both

developed working lists for different policy fields to solve problems in the cross-border region. The first working papers have already been developed, others are still in the process. Working groups are entitled to work on these lists, if necessary, the working groups are accompanied by meetings on the political level. In addition, monitoring lists, observing and reviewing previous cross-border activities have been developed. Moreover, several actions have been taken in different policy agendas such as infrastructure, health care, labour market and education to enhance cross-border cooperation.

Secondly, measures that according to the 'Duitslandstrategie' paper published by Oost-Nederland (Province Gelderland and Overijssel) are taken to enhance cross-border cooperation in the future are for example building up networks or strengthen already existing networks. Besides that, their aim is to make more new contacts in the neighbouring country and make more active use of the already existing contacts on the administrative and political level. Their approach has been described in the paper as follows "The basis of our approach is to invest in sustainable relationships. A sustainable relationship with your neighbours is necessary in order to be able to work on policy issues in a structured way. That is why this is the backbone of our strategy. Building and maintaining the network from existing relationships, making use of each other's contacts at the official, administrative and political levels and working from meetings towards a future-proof relationship of trust" (Duitslandstrategie, Oost Nederland, n.d., p.6).

Thirdly, another paper, the 'Drentse Duitslandagenda' published by the Province Drenthe also puts an emphasis on strengthening already existing ties and networks with cross-border partners in different cross-border policy fields such as labour market, water management, infrastructure, education and more. One important aspect of cross-border cooperation is exchanging knowledge in order to benefit from it on both sides of the border. Another important instrument for cross-border cooperation is to start developing projects together, such as for example the "Europapark Coevoerden-Emlichheim". Another instrument, mentioned in the paper, is to develop marketing campaigns, especially relevant for tourism in the cross-border area, developing marketing strategies on how can tourists from the neighbouring country be attracted to visit for a day, an event or even a vacation.

In conclusion, the analysed papers indicate that the Dutch and German public authorities in the Euregio-region take measures to enhance cross-border cooperation. The most important instruments mentioned in the papers have been building up or strengthening networks and exchanging knowledge and contacts, i.e. not tangible measures. Whereas developing marketing campaigns or projects together and developing working lists and monitoring lists to strengthen activities in certain policy fields or solving problems emerging in the cross-border area are existent as well, these are considered tangible measures.

4.1.6 Discussion of realistic literature review results

In this subchapter, the results of the realistic literature review are discussed. The results are reviewed based on the theoretical insights discussed in theory chapter 2.0. As a general observation, it must be said that the papers analysed in the realistic literature review varied in focus: some papers were focussing

primarily on cross-border cooperation, whereas other papers discussed a general strategy for their municipality, region or province and only a small part of the strategy was dedicated to cross-border cooperation. Also, the length of the analysed papers varies from 2 to 99 pages (see table 7b about data extraction with keywords in appendix 3). Furthermore, it needs to be mentioned that due to the lack of data, it has not been possible to analyse a document from a German municipality. Whereas several Dutch municipalities provided such a policy or strategy paper, even particularly about cross-border cooperation only, no German municipality did provide such a paper. This is interesting, considering that there are more German municipalities in the Euregio-region than Dutch municipalities. With this in mind, one would expect to receive documents from a number of German municipalities. The differences in availability of data on the German side can either result from simply not having such papers, from not having them publicly available or from the different administrative systems in Germany and the Netherlands, meaning that the responsibility lays with the districts or federal states and not the municipalities. In making conclusions about the papers, it needs to be clarified that the papers have been sorted strictly according to the ten keywords, meaning that the specific term 'cross-border cooperation' has been picked and not related words such as, for example, 'cross-border area' or 'cross-border workplace'. The same procedure has been used for other keywords. Using the same data but being less strict with the keywords or following a different literature review process, the results can be different.

Secondly, the results of the realistic literature review are discussed in more detail. All the analysed papers mention the keyword 'cross-border cooperation', of course, this topic has been one of the criteria to include the paper in the first place. However, it is satisfying to review that it actually plays a role for the public authorities under test. The analysed papers confirm that cross-border cooperation structures and activities are already installed in the Euregio-region. The results of the realistic literature review provide clarification about the policy fields for which cross-border cooperation is desired. The Dutch documents focused more on public services than the German documents. Whereas the German documents focused more on health care, yet both are mainly interested in the same fields such as education, energy, labour market and culture. The strong cooperation in these aforementioned policy fields can be explained by their high potential for both cooperation partners or the political interest to cooperate in these fields compared to other policy fields. As the master thesis project aims to address whether the implementation of electronic public services contributes to cross-border cooperation, a closer look is taken at the keyword 'public services'. Public services are not mentioned in most of the analysed documents, it is only mentioned in 4 out of 6 Dutch papers. It is not mentioned in the German papers, indicating that cross-border cooperation is not yet taking place much in this policy field. Another reason might be that the administrative responsibilities on the different levels are too different between Germany and the Netherlands to cooperate successfully or the interest is not there to put effort into cooperating in cross-border public service provision. However, exchanging knowledge about public service provision can be extremely helpful, as the handling of public services is of high relevance for citizens. Especially for those who work in the bordering country or even move to the neighbouring

country for work or study. Certainly, a policy field that needs more attention when it comes to cross-border cooperation.

Another striking observation is that especially on federal-state and province-level tangible measures have been named compared to papers on other administrative levels. Most papers named not tangible measures, however, the following three documents also described tangible measures in greater detail: the 'Benelux Strategie NRW', the 'Gros Arbeitsliste Niedersachsen-Niederlande' and the 'Drentse Duitslandagenda'. This indicates that Dutch, as well as German public authorities, are active in cross-border cooperation, moreover, it can be stated that tangible measures are a sign for intensive cross-border cooperation. Furthermore, it has been interesting to review that there are many different approaches to initiate and strengthen cross-border cooperation. Not only the Euregio organisation or Interreg funded projects are used but also own initiatives are found such as, for example, a project named 'Grenzhoppers' - a cooperation between the region Achterhoek in the Netherlands and the district Borken in Germany. When comparing the institutional structures of cross-border cooperation described in the policy and strategy papers with the definition of a cross-border region from the academic literature, then the Euregio-region can certainly be identified as a cross-border region. This means that Euregio-region is a cross-border region because, following Lina and Bedrule – Grigoruta (2009, p.2) definition, Euregio is "a cross-border structure established between entities of local or regional government across the border in order to promote their common interests."

4.2 Survey

The following subchapters discuss the survey conducted and the descriptive analysis and statistical tests used to analyse the survey data. By doing so this section will address the third sub-question of this research.

In order to obtain a high response rate, there have been taken the following measures. Firstly, the survey has been sent to all municipalities within the Euregio-region asking two policy officers working there to respond to the survey. Secondly, the survey has been translated to both German and Dutch to gain more responses, as most respondents are more comfortable to answer a survey in their mother tongue. Thirdly, the survey has been distributed through e-mail as that is the easiest and quickest way to communicate with the respondents from distance. Finally, the questions are multiple-choice questions so that the respondent can respond quickly.

As the Euregio organisation sent out the survey link through the general contact list, the respondents of the survey stem from municipalities, other public entities and from non-public entities. There were in total 164 replies from which 105 were fully fulfilled. After sorting the data - position title of the respondents indicated that they work for a municipality or another public entity - 78 cases are left. These responses were split into two groups: respondents from municipalities, 62 cases in total, and respondents from other public entities, 16 cases in total. The splitting has been made based on the position title they

filled in the survey. The municipality group consists of 43 Dutch and 19 German cases, the public entity group consists of 2 Dutch and 14 German cases. Having two groups enables to not only compare responses between Germany and the Netherlands but also between respondents from municipalities and other public entities. Despite the different amount of cases, one can assume that the two countries, as well as the two groups, are comparable within this research. When looking at the following data, one should keep in mind that multiple responses could come from one municipality.

Survey questions 11, 12 and 13 address sub-question 3: *Which electronic public service is provided for citizens who need to register their residency in municipalities within the Euregio-region*? The independent samples test has been conducted to compare the advancement of the specific service in Germany and the Netherlands and to find out is the difference between the countries in electronic service provision significant. Firstly, survey question 11 asks: Is it possible as a citizen to retrieve information about registering your new residency online on the municipality website? In table 10 are presented the results of the t-test conducted with the data from question 11.

Table 10: Statistical test on retrieving information from the municipality website

Independent samples test								
		Levene's Test for Equality of Variances		t-test for equality of means				
Survey question 11:		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Is it possible as a citizen to retrieve information about register your new residency online on the municipality website?	**Equal variances assumed**	21,794	,000	-2,023	47	,049	-,118	,058
	Equal variances not assumed			-1,461	16,000	,163	-,118	,081

Table 10 shows that the Levene's test for equality of variances is lower than 0.05, therefore one looks at the row 'equal variance not assumed'. The significance (2-tailed) is 0,163 and therefore higher than 0.05 indicating that it is not significant. There is a no significant difference between the municipalities in the Netherlands and in Germany on the possibility of retrieving information on the municipality website about residency registration.

Secondly, survey question 12 asks: Is it possible for a citizen to make an appointment online on the municipality website to register the new residency at the municipality office? In table 11 are presented the results of the t-test conducted with the data from question 12.

Table 11: Statistical test on making an appointment online

Independent samples test

Survey question 12:		Levene's Test for Equality of Variances		t-test for equality of means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Is it possible for a citizen to make an appointment online on the municipality website to register the new residency at the municipality office?	**Equal variances assumed**	2773,333	,000	-6,583	52	,000	-,556	,084
	Equal variances not assumed			-4,610	17,000	,000	-,556	,121

Table 11 shows that the Levene's test for equality of variances is lower than 0,05. The significance 2-tailed column in the equal variances not assumed row is 0.00 and therefore lower than 0.05 indicating that it is significant. There one can state that there is a significant difference between the municipalities in the Netherlands and in Germany on the possibility of making an appointment online on the municipality website to register the new residency at the municipality office.

Thirdly, survey question 13 asks: Is it possible for a citizen to register the new residency by logging in with an online identification tool on the municipality website when moving within the same city? In the following table 12, are presented the results of the t-test with the data from question 13.

Table 12: Statistical test on logging in with an online identification tool

Independent samples test

Survey question 13:		Levene's Test for Equality of Variances		t-test for equality of means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Is it possible for a citizen to register the new residency by logging in with an online	**Equal variances assumed**	14,050	,001	-8,881	43	,000	-,778	,088
	Equal variances			-7,304	18,581	,000	-,778	,107

identification tool on the municipality website when moving within the same city?	**not assumed**

Table 12 shows that the significance of Levene's test for equality of variances is also lower than 0.05. The significance 2-tailed column in the equal variances not assumed row is 0.00 and therefore lower than 0.05 indicating that it is significant. There is a significant difference between the municipalities in the Netherlands and Germany on the possibility of registering the new residency by logging in with an online identification tool on the municipality website when moving within the same city.

To address the central research question: *To what extent does the implementation of electronic public services in municipalities contribute to cross-border cooperation in the Euregio-region?* The data from question 17, a crosstabulation of the municipality group, see table 13 below, and of the public entity group, see table 14 below, has been analysed. The results show that the opinion whether the implementation of electronic public services would contribute to stronger cross-border cooperation are spread quite evenly from 'very much' to 'not at all' in the municipality group. From the Dutch respondents, 46,5% respondents say that it would 'somewhat' strengthen cross-border cooperation. Whereas most German respondents, 31,6%, indicate that they are 'undecided' about whether the implementation of electronic public services would contribute to stronger cross-border cooperation. For comparison, the results of the public entity do not indicate a clear opinion about the contribution of electronic public services to stronger cross-border cooperation. The two Dutch respondents state 'undecided' or 'not really', whereas one German respondent states 'very much', but equally four respondents state 'somewhat', 'undecided' or 'not really'. The results of both groups show that neither most respondents see a strong contribution of electronic public services to cross-border cooperation nor do they see a very low contribution between the two.

Table 13: Municipality group: Contribution to cross-border cooperation

To what extent do you think that the implementation of electronic public services would contribute to a stronger cross-border cooperation? * The municipality you are working for is located in: Crosstabulation				
		The municipality you are working for is located in:		
Survey question 17:	**Count**	**Netherlands**	**Germany**	**Total**
To what extent do	Very much	6 (14%)	5 (26,3%)	11 (17,7%)
you think that the	Somewhat	20 (46,5%)	5 (26,3%)	25 (40,3%)
implementation of	Undecided	9 (20,9%)	6 (31,6%)	15 (24,2%)
electronic public	Not really	7 (16,3%)	3 (15,8%)	10 (16,1%)
services would	Not at all	1 (2,3%)	0 (0%)	1 (1,6%)
contribute to a				

		stronger cross-border cooperation?		
	Total	43 (100%)	19 (100%)	62 (100%)

Municipal or public entity group = Municipal.

Table 14: Public entity group: contribution to cross-border cooperation

To what extent do you think that the implementation of electronic public services would contribute to a stronger cross-border cooperation? * The municipality you are working for is located in: Crosstabulation

		The municipality you are working for is located in:		
Survey question 17:	**Count**	**Netherlands**	**Germany**	**Total**
To what extent do you think that the implementation of electronic public services would contribute to a stronger cross-border cooperation?	Very much	0 (0%)	1 (7,7%)	1 (6,7%)
	Somewhat	0 (0%)	4 (30,8%)	4 (26,7%)
	Undecided	1 (50%)	4 (30,8%)	5 (33,3%)
	Not really	1 (50%)	4 (30,8%)	5 (33,3%)
	Total	2 (100%)	13 (100%)	15 (100%)

Municipal or public entity group = Public entity.

Descriptive analysis have also been carried out for survey questions 5, 7 and 15. For analysing question 5: To what extent does your municipality provide any public services online? A crosstabulation analysis has been conducted showing the results from Dutch and German municipalities. The response possibilities were to give a score from 0 (very little) to 10 (very much) for the electronic public service provision of the municipality. The Dutch respondents gave mostly high scores, 32,6% of the respondents gave a 7, 27,9% of the respondents gave an 8, and 18,6% of the respondents gave a 9. The German respondents gave much lower scores, 31,6% of them gave a 3, and 31,6% of other German respondents gave a 5, and 5,3% gave an 8, which was the highest score of the German responses. See table 15 below for the results of the crosstabulation.

Table 15: Municipality group: Provision of online public services

Electronic public services at the local level: To what extent does your municipality provide any public services online? * The municipality you are working for is located in: Crosstabulation

		The municipality you are working for is located in:		
Survey question 5:	**Count**	**Netherlands**	**Germany**	**Total**
Electronic public services at the local level: To what extent does your	1	0 (0%)	0 (0%)	0 (0%)
	2	0 (0%)	3 (15,8%)	3 (4,8%)
	3	0 (0%)	6 (31,6%)	6 (9,7%)
	4	1 (2,3%)	2 (10,5%)	3 (4,8%)

municipality provide	5	3 (7,0%)	6 (31,6%)	9 (14,5%)
any public services	6	2 (4,7%)	1 (5,3%)	3 (4,8%)
online?	7	14 (32,6%)	0 (0%)	14 (22,6%)
	8	12 (27,9%)	1 (5,3%)	13 (21,0%)
	9	8 (18,6%)	0 (0%)	8(12,9%)
	10	3 (7,0%)	0 (0%)	3 (4,8%)
	Total	43 (100%)	19 (100%)	62 (100%)

Municipal or public entity group = Municipal.

Survey question 7 asks: What are the main barriers for increasing the number of online services for citizens? The respondents were asked to rank 10 statements from most important to least important. Table 16 below shows the responses from the municipality group and table 17 below from the public entity group.

Table 16: Municipality group: Main barriers for implementation

Survey question 7: **What are the main barriers for increasing the number of online services for citizens? Please drag the options in the order from most important to least important.**	N				
	Valid	**Missing**	**Mean**	**Median**	**Mode**
Providing online services is not a political priority	60	2	5,38	5	9
Some citizens prefer personal contact instead of online services	60	2	2,83	2	1
Internet access and usage is not yet high enough	60	2	5,55	6	6
Not all users have yet adequate ICT skills	60	2	4,23	4	4
Online service delivery is not yet of sufficient quality	60	2	4,7	5	5
Effective and efficient digital infrastructure is not yet enough developed	60	2	5,07	5	7
Employees are not yet enough trained for working with online services	60	2	6,68	7	8
Financial obstacles hinder implementation of online services	60	2	5,67	5,5	9
Privacy concerns are a main barrier to implement online services	60	2	5,48	6	9
Other, please specify:	60	2	9,4	10	10

Municipal or public entity group = Municipal.

Table 17: Public entity group: Main barriers for implementation

Survey question 7: **What are the main barriers for increasing the number of online services for citizens? Please drag the options in the order from most important to least important.**	N				
	Valid	**Missing**	**Mean**	**Median**	**Mode**
Providing online services is not a political priority	14	2	5,79	6,50	2

Some citizens prefer personal contact instead of online services	14	2	5,36	5,50	3[b]
Internet access and usage is not yet high enough	14	2	6,29	6,50	9
Not all users have yet adequate ICT skills	14	2	5,57	6,00	6
Online service delivery is not yet of sufficient quality	14	2	3,07	1,50	1
Effective and efficient digital infrastructure is not yet enough developed	14	2	3,50	3,00	1
Employees are not yet enough trained for working with online services	14	2	5,43	5,00	5[b]
Financial obstacles hinder implementation of online services	14	2	5,64	6,00	9
Privacy concerns are a main barrier to implement online services	14	2	4,93	4,00	4[b]
Other, please specify:	14	2	9,43	10,00	10

Municipal or public entity group = Public entity.

The results of the descriptive analysis show that the municipality group found that 'some citizens prefer personal contact instead of online services' to be the highest barrier for the increment of online public services (mean 2,83). Whereas the public entity group found that 'Online service delivery is not yet of sufficient quality' (mean 3,07) and 'efficient digital infrastructure is not yet enough developed' (mean 3,50) to be the two highest barriers to implementing more electronic public services. On the other end of the scale, the municipality group shows the highest mean 6,68 at the statement 'Employees are not yet trained for working with online services', indicating that most respondents view this as the lowest barrier for implementing electronic public services. The public entity group perceives the 'internet access and usage is not yet high enough' as the lowest barrier for the increment of online public services with a mean of 6,29. In comparing the opinions of the municipality and public entity group about the most important and least important barriers of the increment of electronic public services, it is important to bear the N of the groups in mind. The public entity group has an N of 14, which is much lower than the N of the municipality group which has 60 respondents; therefore, the responses of the public entity group count more than their municipal counterparts.

The responses to the survey question 15: From your professional point of view, should your national government more electronic public services for citizens? are brought out in table 18. As seen from the table, 72,6 % of the respondents from the municipality group would like their national government to implement more electronic public services opposite to 27,4 % of the respondents who do not want more electronic public services to be implemented.

Table 18: Municipality group: National government on electronic public services

Survey question 15:
From your professional point of view, should your national government implement more electronic public services for citizens?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	45	72,6	72,6	72,6
	No	17	27,4	27,4	100,0
	Total	62	100,0	100,0	

Municipal or public entity group = Municipal group.

In table 19 is shown the crosstabulation analysis for survey question 15 showing the results for the municipality group of both the Netherlands and Germany. Tables 18 and 19 show that most respondents would like their government to implement more electronic public services for citizens as 45 respondents answer the question with a yes, whereas 17 respondents answer the question with a no. Table 19 also shows that comparably more Dutch than German respondents answer the question with a no, indicating that they would not like to have any more electronic public services.

Table 19: Municipal group: National government on electronic public services

The municipality you are working for is located in: * From your professional point of view, should your national government implement more electronic public services for citizens? Crosstabulation				
		The municipality you are working for is located in:		
Survey question 15:	**Count**	**Netherlands**	**Germany**	**Total**
From your	Yes	28 (62,2%)	17 (37,8%)	45 (100%)
professional point	No	15 (88,2%)	2 (11,8%)	17 (100%)
of view, should	Total	43 (69,4%)	19 (69,4%)	62 (100%)
your national				
government				
implement more				
electronic public				
services for				
citizens?				

Municipal or public entity group = Municipal.

The pre-discussed questions are addressing the central research question and therefore have been chosen to be thoroughly analysed, by means of descriptive analysis or statistical tests, in this chapter.

4.2.1 Addressing the third sub-question

In this subchapter, the third sub-question *Which electronic public service is provided for citizens who need to register their residency in municipalities within the Euregio-region?* will be addressed based on the survey results. The third sub-question is as follows: The question is an empirical research question and its relevance for the central research question has been outlined in subchapter 1.2. To address the third sub-question, primarily the results of the statistical tests -independent samples tests, which have been carried out with the data of the survey questions 11, 12 and 13 - are used. These three survey questions are considered to be relevant because they are concerning the service residency registration

and the extent to what services are provided online for citizens. The independent samples test of question 11 shows that there is a no significant difference between the Dutch and German municipalities on the possibility to retrieve information on the municipality website about residency registration. Whereas, the independent samples test on the results of survey question 12 shows that there is a significant difference between the municipalities in the Netherlands and in Germany on the possibility of making an appointment online on the municipality website to register the new residency at the municipality office. The independent samples test of question 13 shows that there is a significant difference between the municipalities in the Netherlands and Germany on the possibility of registering the new residency by logging in with an online identification tool on the municipality website when moving within the same city. These results show that it is possible to use different types of electronic public services for residency registration in Dutch and German municipalities. The results show that in Dutch and in German municipalities it is possible to retrieve information online on the municipality website about residency registration. But it is in significantly more Dutch than German municipalities possible to make an appointment online to change the address at the municipality office and to change the address electronically with the help of an online identification tool.

The results of the tests, conducted with the survey data of question 5, support the conclusions drawn by the results of question 12 and 13 that electronic public services are provided in more Dutch than German municipalities. Survey question 5 asks the respondent: To what extent does your municipality provide any public services online? The test results show that Dutch respondents give high scores, indicating that the municipality the respondents are employed at is providing a fair amount of public services online to citizens. Whereas, the German respondents give mostly low scores, indicating that not many services are offered online to the citizens in the municipality they are working for. It is important to clarify that the third sub-question cannot be answered for each municipality in the Euregio-region individually as that data is not available. To address the third sub-question can be said that all discussed types of electronic public service provision, including information on the municipality website, making appointments online and logging in with an online-identification are provided to citizens who need to register their residency in municipalities within the Euregio-region. Yet, the test results of several survey questions clearly indicate that the availability of electronic public services to register the residency varies between German and Dutch municipalities. Moreover, not all three types of electronic public services are offered at all municipalities in the Euregio-region, indicating that the municipalities are at different implementation stages of electronic public services. At some, it is only possible to retrieve information online at the municipality website, which is the most basic of all three analysed types. Whereas in others it is already possible to make an appointment online to register the residency at the municipality office, an electronic service that increases the efficiency of the registration process for citizens and civil servants at the municipal office. Again, in other municipalities, it is even possible to register the residency fully online with an online identification tool when moving within the same municipality, this however is an advanced electronic public service, as a secure online identification tool needs to be

established first. Conclusively, based on the results on survey question 11,12 and 13, it can be assumed that it is possible to organize the residency registration mostly electronically more in Dutch than German municipalities.

4.2.2 Discussion of survey results

In this subchapter, the results of the descriptive analysis and statistical tests are discussed and reviewed regarding the theoretical insights discussed in theory chapter 2.0. Based on the responses on the third survey question (population size of the municipality) becomes clear that multiple responses are from one municipality, i.e. 7 respondents are stemming from a municipality with a population size that only one municipality has in the Euregio-region. This observation indicates that not each response equals a different municipality. This observation must be kept in mind when discussing the survey results. One expectation about the survey responses has been that more German municipalities than Dutch municipalities would reply to the survey, as the Euregio-region is comprised of a larger German part and a smaller Dutch part. This expectation has not been fulfilled by the results, as more employees from Dutch municipalities replied to the survey than employees from German municipalities. However, when looking at the group of 'other public entities', then more respondents from German districts replied to the survey. Another expectation was concerning the fourth question of the survey about whether the respondent would characterize the location of the municipality to which the respondent works as rural or urban. The descriptive analysis shows that 43 municipalities consider themselves as rural whereas 18 consider themselves as urban. These results reflect well the Euregio-region, which is primarily a rural area with only a few bigger cities.

Survey question 7 asked the respondent to order based on their importance ten statements about barriers for implementing electronic public services. Comparing the article by Bojang and Bwando (2018) who name five main challenges for the implementation of electronic public services at municipal level: e-readiness, effective and efficient digital infrastructure, human resource development, legal framework and the digital divide, with the results of question 7 then the following can be seen. The survey results show that the public entity group names 'efficient digital infrastructure is not yet enough developed' as one of the highest barriers for implementing more electronic public service. The same barrier has been named by Bojang and Bwando (2018) as well. Another challenge mentioned by Bojang and Bwando (2018) is human resource development. Respondents of the municipality group considered 'employees are not yet trained for working with online services' as the lowest barrier to overcome when implementing electronic public services. This difference in anticipation might depend on the respondents asked by the survey, as those were employees from municipalities, they would most probably not consider themselves as a high barrier to the implementation process. Furthermore, from the survey responses occur that the public entity group blames the information and communication technology development with not yet sufficient quality of online service delivery and not enough developed efficient digital infrastructure as the main barrier to the implementation process. Whereas the

municipality group blames the citizens for the slow increment of electronic public services, as according to them citizens prefer personal contact instead of online services.

Another interesting finding has been made concerning question 15, 72,6 % of municipality group respondents stated that their national government should implement more electronic public services for the citizens whereas 27,4% of municipality group respondents who do not want more electronic public services to be implemented for the citizens. This question shows some interesting results as 15 of the 43 Dutch respondents state 'no' indicating that they do not want their national government to implement more electronic public services, see table 19 in chapter 2.4. The relatively high 'no' responses might be explained by the amount of already existing electronic public services at Dutch municipalities for citizens or the dissatisfaction of the employees with electronic public services. Only, 2 German respondents said 'no' compared to 17 German respondents who would like their national government to implement more electronic public services.

The follow-up survey question, question 15.1, asked the respondents who agreed that their national government should implement more electronic public services for the citizens about which electronic public services they would like to see in the near future. The responses given by the Dutch and Germany municipality employees cover a broad spectrum. For example, passport application, car registration, registration of dogs, an online citizens portal, e-voting, request publicly available government information, land sale, the possibility of a live-chat, permit applications. A few also call for uniformity of online services across municipalities and other public institutions. Moreover, the public entity respondents proposed services that they desired to have online in the future, such as, for example, an eID identification tool, register the birth of a child, car registration, open data, to have the possibility to chat or skype with the citizens, passport or driver's license applications or making appointments online for services at the municipality offices. As can be seen, the municipality and public entity group share some ideas about possible electronic public services, showing a desire for more online services in the near future. Conclusively, the subchapter discussed the core insights acquired from the survey results and reviewed the results with the theoretical insights discussed in theory chapter 2.0 of the master thesis project. Additionally, based on the analysis of the survey results this subchapter addressed the third sub-question. Furthermore, the analysis chapter has carried out the realistic literature review, discussed its results and addressed the second sub-question. The following chapter is the conclusion chapter, primarily providing an answer to the central research question.

5.0 Conclusion

The final chapter addresses the central research question, outlines the limits and strengths of the study, its practical implications for practitioners and researchers and recommendations for future research. The results of the realistic literature review show that cross-border cooperation is of importance. However, the policy field of public service provision only plays a role for a few public authorities within the Euregio-region, as it was mentioned in only 4 out of 12 analysed papers. All these four papers were from the Netherlands. The analysis also showed that the policy fields of education, energy, labour market and culture are of importance when it comes to cross-border cooperation between Germany and the Netherlands in the Euregio-region. The realistic literature review identified tangible measures such as creating concrete working lists and monitoring lists to solve problems occurring in the border region or developing campaigns and projects together. Yet, most analysed papers demonstrate that the instruments used to enhance cross-border cooperation are not tangible such as building up networks, exchanging knowledge, making use of each other contacts and such.

A survey was conducted among employees in the municipality and other public entities located in the Euregio region. The analysis of the survey data is discussed in the analysis chapter 4.2. The most important results are as follows. The survey results showed that it is possible to use electronic public services in municipalities in both Germany and the Netherlands as it is possible to retrieve information online on the municipality website about residency registration. The survey results also showed that it is in significantly more Dutch than German municipalities possible to make an appointment online with the municipality for changing the registration address or to change the registration address electronically with the help of an online identification tool. Furthermore, the survey results show that the municipality respondent group identified the statement 'some citizens prefer personal contact instead of online services' as the highest barrier for the increment of online public services. The respondent group of public entities shared a different opinion. They identified the statements 'online service delivery is not yet of sufficient quality' and 'efficient digital infrastructure is not yet enough developed' as the highest barriers when it comes to implementing more electronic public services.

Next to the central research question, three sub-questions have been raised in subchapter 1.2. The first sub-question: *What are the factors that support or hamper the implementation of electronic public services on the municipal level?* has been addressed in subchapter 2.3. Based on the literature, the factors that support the implementation are public funding, organisational change and e-Government awareness, from both governments and citizens, whereas the lack of these factors can hamper the implementation, the digital divide is considered as another challenge to the electronic public service implementation. The second sub-question: *Which measures have been taken by Dutch and German public authorities on the municipal, district/regional and the federal-state/province level to enhance cross-border cooperation?* has been addressed in subchapter 4.1.5. The results of the realistic literature review provided an answer to the second sub-question, the analysed papers indicate that the Dutch and German public authorities

in the Euregio-region take measures to enhance cross-border cooperation. Building up or strengthening networks, exchanging knowledge and contacts are instruments to strengthen cross-border activities, as well as tangible measures such as developing marketing campaigns, working and monitoring list to improve the cooperation or solve problems together emerging in the cross-border area. The third sub-questions: *Which electronic public service is provided for citizens who need to register their residency in municipalities within the Euregio-region?* has been addressed in subchapter 4.2.1. Based on the survey results, the following answer has been given to the third sub-question. All analysed types of electronic public service provision, including information on the municipality website, making appointments online and logging in with an online-identification are provided to citizens who need to register their residency in municipalities within the Euregio-region, however not all types are offered at each municipality. The survey results also indicate that it is possible to organize the residency registration mostly electronically more in Dutch than in German municipalities.

5.1 Answering the central research question

In addition to the central research question, the three sub-questions have been raised and answered to provide a more comprehensive picture of electronic public service implementation and its influence on cross-border cooperation in the Euregio region. Eventually, based on the three sub-questions an answer can be given to the central research question of this study. The central research question of this Master thesis is: *To what extent does the implementation of electronic public services in municipalities contribute to cross-border cooperation in the Euregio-region?* The survey results of question 17: *To what extent do you think that the implementation of electronic public services would contribute to a stronger cross-border cooperation?* show that the responses are spread over all the response options, varying from 'very much' to 'not at all'. In the municipality group, 14% of the Dutch respondents' state that is would strengthen 'very much' the cross-border cooperation, 46,5% of the Dutch respondents state that it would 'somewhat' contribute. Whereas 20,9% of the Dutch respondents are 'undecided' and 16,3% of the Dutch respondents' state 'not really'. On the German response side, 26,3% of the German respondents' state 'very much and also 26,3 % state 'somewhat', 31,6% of the German respondents are 'undecided' and 15,8% states that it would 'not really' contribute to cross-border cooperation. When looking at the total number of respondents per response option, then most respondents (40,3%) state 'somewhat', followed by stating 'undecided' (24,2%). However, the other options were often selected as well, 17,7% of the 62 respondents stated 'very much', and 16,1% stated 'not really' when they were asked, whether the implementation of electronic public services would strengthen the cross-border cooperation. See table 13 in chapter 4.2 for the descriptive analysis results. For comparison, the results of the public entity group have been analysed as well, but the results did not deviate very much from those of the municipality group. Looking at the total number of respondents per response option, then 26,7% of the respondents state 'somewhat', whereas equally 33,3% state 'undecided' and 'not really'. The public entity group is slightly more negative about the contribution of electronic public service implementation on cross-border cooperation than the municipality group. See table 14 in chapter 4.2 for

the results of the public entity group. Conclusively, the survey results do not provide a clear outcome, whether most respondents think it either contributes to a very large or very small extent to cross-border cooperation. However, the results show that most respondents (40,3%) of the municipality group stated 'somewhat' as their response to the question. Therefore, the answer to the central research question reads as follows: the implementation of electronic public services in Dutch and German municipalities does not to a noteworthy large extent contribute to cross-border cooperation in the Euregio-region. Concludingly, the research shows low embeddedness of electronic public service provision in cross-border cooperation.

5.2 Limits and strengths of the study

There are several limitations to this study that have to be pointed out. The Netherlands is a decentralized unitary state, whereas Germany is a decentralized federal state, leading to different governmental layers and responsibilities. These differences aggravate a comparison between the implementation of electronic public services in the Netherlands and Germany. A second limitation of the study is the representativeness of the entire Euregio-region, as only documents from a few Dutch and German public authorities have been analysed, due to the availability of the data, the question is whether the results represent the entire Euregio-region. A third limitation of the study is the availability of data. More Dutch than Germany policy or strategy papers have been available for the realistic literature review. This might be because fewer papers might be publicly available via website or email or less policy or strategy papers have been dedicated to cross-border cooperation in Germany than in the Netherlands. When contacting the public authorities in Germany and in the Netherlands asking for policy or strategy papers about their cross-border cooperation ambitions with the neighbouring county, it has been striking that more Dutch than German public authorities replied. Additionally, the Dutch authorities replied quickly adding papers or links to their email reply, whereas the German authorities took longer to reply if they replied at all. For more information about the response timeline, see table 1a and 1b in appendix 1. Finally, a limitation to this study is also the set-up of the survey. Due to its anonymity of the survey respondents, it was not possible to trace back all responses to the survey. As the survey has been sent via an email contact list including municipalities but also other public organisations or persons who were not the target of the survey, the survey led to different results than intended.

Even though there were several limitations to this study, there are also strengths. The combination of two research methods - a qualitative and quantitative research method - is considered as a strength to this study. This is because this combination enables to use both the first and secondary data to address the central research question and sub-questions. Another strong aspect of this master thesis is the use of paper published in Dutch and German by the respective public authorities, due to language abilities of the researcher it has been possible to analyse Dutch and German papers, and not only English papers, within the framework of the realistic literature review. A big asset of this survey is that the relatively high response rate to the survey allowed to conduct statistical tests thoroughly and enabled to address

the third sub-question and the central research question. Finally, the combination of the research about cross-border cooperation with e-Government studies enables to research whether there is a connection between these policy fields.

5.3 Recommendations for future research

This study is of value not only for practitioners but also for academics, as new insights have been gathered and literature on electronic public services and cross-border cooperation has been carefully reviewed. This study contributes to e-Government research by exploring the differences between the German and Dutch implementation of electronic public services and the extent to what electronic public services of residency registration are available in municipalities within the Euregio-region. However, the research has the potential to be built upon in future research. The research can be extended in the future by a multi-case study of more European cross-border regions and it can be extended to a comparative analysis. Moreover, this research discusses electronic public service implementation from an organisational perspective. Other views on governments, such as citizen-centred or data-driven perspective, can be integrated into future research, extending the research conducted in this study.

5.4 Practical implications of the study

This study is of value for practitioners in the field of electronic public services and the field of cross-border cooperation for several reasons. Firstly, it outlines the current challenges for the implementation of such services as well as the current state of cross-border cooperation, however, it must be kept in mind that the results are only applicable to the Euregio cross-border region. Secondly, for practitioners in the public authorities of the different administrative levels in Germany and the Netherlands, this study can help to plan the implementation process of electronic public services. Which barriers are considered as high and low has been outlined in the analysis chapter of this master thesis project. Thirdly, the results might encourage practitioners in the field of electronic public services to acquire knowledge from the bordering countries or other EU-countries on how to successfully implement public services online on the municipal, district/regional or federal-state/province level. Fourthly, the study clarifies which online public services are desired to have by employees of municipalities within the Euregio-region, this might be a limited group of civil servants, regarding the size of the Netherlands and Germany, however, the public services are probably desired by more people in either of the countries. Moreover, the results of the study showed which tangible and not tangible measures have already been taken to enhance cross-border cooperation in the Euregio-region. Finally, the Euregio organisation and its members can learn from the results of the study as well, as it shows in which policy field already cooperation takes places and which policy fields the cooperation is not strong yet.

References

Academic literature

Badulescu, A. & Badulescu, D. (2013). Assessing the Effectiveness of Cross-Border Cooperation in Joint Public Services. Conference paper.

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information Systems Journal*, *15*(1), 5–25.

Becker, J., Niehaves, B., Algermissen, L., Delfmann, P., & Falk, T. (2004). e-Government Success Factors. *Lecture Notes in Computer Science Electronic Government*, 503–506.

Bekkers, V., & Homburg, V. (2007). The Myths of E-Government: Looking Beyond the Assumptions of a New and Better Government. *The Information Society*, *23*(5), 373–382.

Bekkers, V. J., & Zouridis, S. (1999). Electronic service delivery in public administration: Some trends and issues. *International review of administrative sciences*, *65*(2), 183-195.

Bertot, J.C., Jaeger, P.T., & McClure, C.R. (2008). Citizen-Centered E-Government Services: Benefits, Costs, and Research Needs. *The Proceedings of the 9th Annual International Digital Government Research Conference:* 137-142.Montreal, Canada, May 18-211, 2008.

Broek, J. V. D., & Smulders, H. (2015). Institutional hindrances in cross-border regional innovation systems. *Regional Studies, Regional Science*, *2*(1), 116–122.

Bojang, M., & Bwando, W. (2018). *E-municipality applications in local government: prospects and challenges*. Paper presented at 3600 with youth 4th international student conference, Manisa, Turkey.

DeLeon, P., & DeLeon, L. (2002). What ever happened to policy implementation? An alternative approach. *Journal of public administration research and theory*, *12*(4), 467-492.

Deursen, A. V., Dijk, J. V., & Ebbers, W. (2006). Why E-government Usage Lags Behind: Explaining the Gap Between Potential and Actual Usage of Electronic Public Services in the Netherlands. *Lecture Notes in Computer Science Electronic Government,* 269-280.

Dijk, J. V., Ebbers, W., & Wijngaert, L. V. D. (2015). e-Government. *The International Encyclopedia of Digital Communication and Society*, 1–10.

Gerfert, S. (2009). Cross-border cooperation, transforming borders overcoming obstacles. University of Twente.

Ibrahem Zahran, D., Al-Nuaim, H. A., Rutter, M. J., & Benyon, D. (2015). A Critical Analysis of M-Government Evaluation Models at National and Local Municipal Levels. *Electronic Journal of e-Government*, *13*(1).

Jaansoo, A. (2019). *Provision of Services Across International Borders: Factors Driving Cooperation of Subnational Governments in Europe*. University of Twente.

Lina, D. M., & Bedrule-Grigoruta, M. V. (2009). Cross-Border Cooperation - A Tool for Regional Development in Europe. *SSRN Electronic Journal*.

Mergel, I. (2019). Digitale Transformation als Reformvorhaben der deutschen öffentlichen Verwaltung. dms – der moderne staat – Zeitschrift für Public Policy, Recht und Management, 12(1-2019), 162-171.

Otjacques, B., Hitzelberger, P., & Feltz, F. (2007). Interoperability of E-Government Information Systems: Issues of Identification and Data Sharing. *Journal of Management Information Systems*, *23*(4), 29–51.

Pawson, R., Greenhalgh, T., Harvey, G. & Walshe, K. (2005). *Realist review – a new method of systematic review designed for complex policy interventions.* Journal of Health Research and Policy.

Perkmann, M. & Sum, N, (2002). Globalization, regionalization and cross-border regions: scales, discourses and governance. In: Perkmann and Sum (eds), Globalization, regionalization, and cross-border regions. Basingstoke: Palgrave Macmillan

Pieterson, W., Ebbers, W., & Dijk, J. V. (2007). Personalization in the public sector. *Government Information Quarterly*, *24*(1), 148–164.

Robert K. Yin. (2014). Case Study Research Design and Methods (5th ed.).Thousand Oaks, CA: Sage. 282 pages.

Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options. *Political Research Quarterly, Volume 61 No. 2.,* 294-308. University of Utah.

Sousa, de L. (2013). Understanding European Cross – Border Cooperation: A Framework for Analysis, *Journal of European Integration*, 35(6): 669-687.

Spicker, P. (2009). The Nature of a Public Service. *International Journal of Public Administration*, *32*(11), 970–991.

Terlouw, K. (2008). The discrepancy in PAMINA between the European image of a cross-border region and cross-border behaviour. GeoJournal, 73, 103–116.

Van Dijk, J. A., Peters, O., & Ebbers, W. (2008). Explaining the acceptance and use of government Internet services: A multivariate analysis of 2006 survey data in the Netherlands. *Government Information Quarterly*, *25*(3), 379-399.

van Houtum, H. J. (1998). The development of cross-border economic relations. Tilburg: CentER, Center for Economic Research.

Wolf, U., Hollederer, A. & Brand, H. (2006). Grenzübergreifende Zusammenarbeit in Europa: Was sind Euregios? Gesundheitswesen 2006; 68: 667-673, Georg Thieme Verlag KG Stuttgart.

Zainal, Z. (2007). *Case study as a research method.* Universiti Teknologi Malaysia.

Websites

Carstens, N. (25th of April 2019). Digital Transformation in German Multi-Level Governance – The Case of Digitalisation Labs on "Immigration and Emigration". Retrieved on February, 8th, 2020 from http://tropico-project.eu/cases/administration-costs-for-bureaucracy/digital-transformation-in-german-multi-level-governance-the-case-of-digitalisation-labs-on-immigration-and-emigration/

EU Commission (2018). Digital Single Market Policy Cross-border pilots. Retrieved on September 30th, 2019 from https://ec.europa.eu/digital-single-market/en/cross-border-pilots

Euregio (2019). About Euregio. Retrieved on September 10th, 2019 from https://www.euregio.eu/de/node/7

Euregio (2019). Organisation. Retrieved on September 10th, 2019 from https://www.euregio.eu/de/node/181

Staatskanzlei des Landes Nordrhein-Westfalen (2019). Kooperation mit den Benelux-Staaten. Retrieved on November 19th, 2019 from https://www.mbei.nrw/de/kooperation-mit-den-benelux-staaten

Policy papers and reports

European Commission, 2019, Digital Economy and Society Index Report 2019 – Digital Public Services.

European Commission, n.d., Digital Government Factsheet 2019 Germany.
https://joinup.ec.europa.eu/sites/default/files/inline/files/Digital_Government_Factsheets_Germany_2019.pdf

European Commission, n.d., Digital Government Factsheet 2019 The Netherlands.
https://joinup.ec.europa.eu/sites/default/files/inline/files/Digital_Government_Factsheets_Netherlands_2019_0.pdf

European Commission, 2005, Report on the public consultation on the Green Paper on Public-Private Partnerships and Community law on public contracts and concessions, SEC (2005) 629
http://ec.europa.eu/internal_market/publicprocurement/docs/ppp/ppp-report_en.pdf

European Commission, May 2018, eGovernment in Germany.
https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Germany_2018_0.pdf

Appendices

Appendix 1: Tables Data collection response timeline

Table 1a: Data collection response timeline – Municipalities in Euregio-Area

Number of respondents	Respondent	Date of reply
1	Gemeente Aalten	4th of November 2019
2	Gemeente Doetinchem	4th of November 2019
3	Stadt Gronau	5th of November 2019
4	Gemeente Hengelo	5th of November 2019
5	Gemeente Enschede	5th of November 2019
6	Gemeente Hardenberg	5th of November 2019
7	Stadt Bocholt	7th of November 2019
8	Stadt Emsdetten	21st of November 2019

Table 1b: Data collection response timeline – federal state governments Germany

Number of respondents	Respondent	Date of reply
1	Netwerkadviseur Duitsland, Provincie Gelderland	7th of November
2	Pressestelle des Niedersächsischen Ministeriums für Bundes- und Europaangelegenheiten und Regionale Entwicklung	8th of November
3	Niedersachsen: Amt für regionale Landesentwicklung Weser - Ems	11th of November 2019
4	Ministerium für Bundes-und Europaangelegenheiten und Regionale Entwicklung Niedersachsen	15th of November 2019
5	Staatskanzlei des Landes Nordrhein-Westfalen, Benelux-Kooperation, grenzüberschreitende Zusammenarbeit, EFTA-Staaten	19th of Novermber 2019
6	Bezirksregierung Düsseldorf	25th of November 2019

Appendix 2: List of policy or strategy papers
Table 3: List of policy or strategy papers

	Paper	Publisher	Publication year
1	Grensoverschrijdende samenwerking gemeente Aalten 2019-2023	Gemeente Aalten	July 2019
2	Enschede, meest Duitse stad van Nederland - Ambities voor samenwerking met Duitsland 2019 -2027	Gemeente Enschede	June 2019
3	Regionale samenwerkingsagenda. Werkprogramma Regio Twente 2017-2020	Regio Twente	-
4	Duitslandstrategie 'Grenzenloos Noaberschap'	Oost-Nederland (Provincie Overijssel/ Provincie Gelderland)	-
5	Drentse Duitslandagenda 2017 -2020. Mensen verbinden. Samen groeien.	Provincie Drenthe	-
6	Ambitiedocument Grensoverschrijdende samenwerking Achterhoek – Duitsland 2017-2020	Regio Achterhoek	-
7	Strategiedokument Grenzüberschreitende Zusammenarbeit im Achterhoek und im Kreis Borken 2017-2020	Grenzhopper (Kreis Borken/ Regio Achterhoek)	September 2018
8	Kompass 2025 – Entwicklungsstrategie für den Kreis Borken	Kreis Borken	Oktober 2011
9	Benelux-Strategie der Landesregierung Nordrhein-Westfalen	Ministerin für Bundesangelegenheiten, Europa und Medien des Landes Nordrhein-Westfalen	-
10	Strategiepapier zur grenzüberschreitenden Zusammenarbeit in der Raumordnung zwischen den Niederlanden und Nordrhein-Westfalen	Bezirksregierung Düsseldorf	-
11	Konzept Kooperationsagenda Niederlande – Niedersachsen	Niedersächsisches Ministerium für Bundes- und Europaangelegenheiten	-

		und Regionale Entwicklung		
12	Grenzüberschreitende Zusammenarbeit Arbeitsliste Niedersachsen – Niederlande zur Lösung von grenzüberschreitenden Fragen	-		Januar 2014

Appendix 3: Data extraction tables

Table 7a: Data extraction results

	Policy or strategy paper	Cross-border cooperation	Measures	Cross-border cooperation fields
1	Kompass 2025 – Entwicklungsstrategie für den Kreis Borken	Present	Present	Present (Infrastructure, energy, labour market, tourism, health care, culture, education)
2	Strategiedokument Grenzüberschreitende Zusammenarbeit im Achterhoek und im Kreis Borken 2017-2020	Present	Not present	Present (Labour market, tourism, culture, education)
3	Benelux-Strategie der Landesregierung Nordrhein-Westfalen	Present	Present	Present (Infrastructure, energy, labour market, health care, culture, education)
4	Strategiepapier zur grenzüberschreitenden Zusammenarbeit in der Raumordnung zwischen den Niederlanden und Nordrhein-Westfalen	Present	Present	Present (Infrastructure, energy, tourism, culture, education)
5	Zusammenarbeit Arbeitsliste Niedersachsen – Niederlande zur Lösung von grenzüberschreitenden Fragen	Present	Present	Present (Infrastructure, energy, labour market, health care, education)

6	Konzept Kooperationsagenda Niederlande – Niedersachsen	Present	Not present	Present (Infrastructure, energy, labour market, culture, education)
7	Enschede, meest Duitse stad van Nederland -Ambities voor samenwerking met Duitsland 2019 -2027	Present	Not present	Present (Infrastructure, energy, labour market, tourism culture, education)
8	Grensoverschrijdende samenwerking gemeente Aalten 2019-2023	Present	Not present	Present (Energy, labour market, tourism, public service, culture, education)
9	Ambitiedocument Grensoverschrijdende samenwerking Achterhoek – Duitsland 2016-2020	Present	Not present	Present (Labour Market, culture, education)
10	Regionale samenwerkingsagenda. Werkprogramma Regio Twente 2017-2020	Present	Present	Present (Infrastructure, energy, labour market, tourism, public service, culture, education)
11	Duitslandstrategie 'Grenzenloos Noaberschap'	Present	Present	Present (Infrastructure, energy, labour market, tourism, public service, culture, education)
12	Drentse Duitslandagenda 2017 - 2020. Mensen verbinden. Samen groeien	Present	Present	Present (Infrastructure, energy, labour market, tourism, public service, culture, education)

Table 7b: Data extraction by keywords

	Policy or strategy papers	Length of paper	Cross-border cooperation	Measures	Infrastructure	Energy	Labour market	Tourism	Health care	Public service	Culture	Education
1	*Kompass 2025 – Entwicklungsstrategie für den Kreis Borken*	99 pages	2 times	41 times	53 times	60 times	14 times	40 time	1 time	---------	91 times	322 times
2	*Strategiedokument Grenzüberschreitende Zusammenarbeit im Achterhoek und im Kreis Borken 2017-2020*	3 pages	4 times	-----------	---------	---------	2 times		----------	---------	9 times	5 times
3	*Benelux-Strategie der Landesregierung Nordrhein-Westfalen*	26 pages	6 times	4 times	9 times	28 times	12 times	------------	2 times	----------	29 times	25 times
4	*Strategiepapier zur grenzüberschreitenden Zusammenarbeit in der Raumordnung zwischen den Niederlanden und Nordrhein-Westfalen*	16 pages	3 times	2 times	4 times	1 time	---------	2 times	-------	----------	9 times	2 times

#	Document											
5	*Grenzüberschreitende Zusammenarbeit Arbeitsliste Niedersachsen – Niederlande zur Lösung von grenzüberschreitenden Fragen*	17 pages	5 times	4 times	7 times	14 times	4 times	--------	2 times	---------	----------	9 times
6	*Konzept Kooperationsagenda Niederlande – Niedersachsen*	4 pages	3 times	-----------	3 times	9 times	3 times	-------	--------	----------	1 time	2 times
7	*Enschede, meest Duitse stad van Nederland -Ambities voor samenwerking met Duitsland 2019 -2027*	36 pages	4 times	----------	1 time	18 times	22 times	4 times	------	----------	34 times	43 times
8	*Grensoverschrijdende samenwerking gemeente Aalten 2019-2023*	21 pages	33 times	-----------	----------	1 time	10 times	6 times	--------	2 times	7 times	16 times
9	*Ambitiedocument Grensoverschrijdende samenwerking Achterhoek – Duitsland 2016-2020*	2 pages	2 times	-----------	----------	.------	2 times	-----------	----------	----------	2 times	4 times

10	*Regionale samenwerkingsagenda. Werkprogramma Regio Twente 2017-2020*	36 pages	1 time	1 time	4 times	3 times	6 times	3 times	----------	1 time	1 time	14 times
11	*Duitslandstrategie 'Grenzenloos Noaberschap'*	18 pages	19 times	8 times	4 times	19 times	12 times	3 times	------------	3 times	22 times	18 times
12	*Drentse Duitslandagenda 2017-2020. Mensen verbinden. Samen groeien*	31 pages	10 times	6 times	21 times	51 times	26 times	8 times	---------	1 time	27 times	29 times

Table 7c: Overview of numbers of keywords used in Dutch and Germany papers

	German keywords	Number of keywords	Dutch keywords	Number of keywords	English translation of keywords	Amount in total
1	Grenzüberschreitende Zusammenarbeit	15	Grensoverschrijdende samenwerking	56	cross-border cooperation	71
2	Maßnahmen	37	maatregelen	15	measures	52
3	Infrastruktur	51	infrastructuur	32	infrastructure	83
4	Energie	95	energie	95	energy	190
5	Arbeitsmarkt	23	arbeidsmarkt	83	labour market	106
6	Tourismus	34	toerisme	20	tourism	54
7	Gesundheitswesen	4	gezondheidszorg	0	health care	4
8	Öffentliche Dienstleistungen	0	dienstverlening	9	public service	9
9	Kultur	87	cultuur	92	culture	179
10	Bildung	272	onderwijs	126	education	398

Appendix 4: Survey

English version of the survey:

Welcome to this research study

On behalf of the University of Twente and the Euregio we are interested in understanding the electronic public service implementation in Dutch and German municipalities in the Euregio - region, you will be asked to answer some questions from your professional point of view about it. Please be assured that your responses will be processed and reported completely anonymously. We do not collect identifying information such as your name, email address or IP address. All data is stored in a password protected electronic format according to the legal requirements in place at the EU level. The results of this survey will be used for scholarly purposes only.

The survey should take you maximum 5 minutes to complete and is available in English, German and Dutch. Choosing your preferred language is done by selecting it from the drop-down menu in the top right corner. Please choose the language you are most comfortable with answering in.

Your participation in this research is voluntary. You have the right to withdraw at any point during the survey, for any reason, and without any prejudice. If you have any questions about the survey, then

please contact the researcher Anna Schmitz from the University of Twente via email (a.schmitz-1@student.utwente.nl).

By clicking the button below, you acknowledge that your participation in the survey is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the survey at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less visible on a mobile device.

- o I consent, begin the survey
- o I do not consent, I do not wish to participate

General information

1. Please fill in your position title *(text entry question)*

   (If you wish to not answer this question you can skip this question by clicking on the arrow)

2. The municipality you are working for is located in: *(multiple choice – single answer)*
   - o The Netherlands
   - o Germany

3. What is the population size of the municipality you are working for? *(multiple choice – single answer)*
   - o Less than 30 000 inhabitants
   - o 30 000 to 49 999 inhabitants
   - o 50 000 to 99 999 inhabitants
   - o 100 000 to 199 999 inhabitants
   - o More than 200 000 inhabitants

4. Would you characterize the location of the municipality you are working for as being:
   (multiple choice – single answer)
   - o Rural
   - o Urban

Electronic public services at the local level

5. To what extent does your municipality provide any public services online? *(net promoter score question)*

   o   0 (very little)
   o   1
   o   2
   o   3
   o   4
   o   5
   o   6
   o   7
   o   8
   o   9
   o   10 (very much)

6. Is it a government priority to increase the number of online services aimed at citizens? *(multiple choice – single answer)*

   o   Yes
   o   No
   o   I do not know

7. What are the main barriers for increasing the number of online services for citizens? *(rank order question)*

   Please drag the options in the order from most important to least important.

   o   Providing online services is not a political priority
   o   Some citizens prefer personal contact instead of online services
   o   Internet access and usage is not yet high enough
   o   Not all users have yet adequate ICT skills
   o   Online service delivery is not yet of sufficient quality
   o   Effective and efficient digital infrastructure is not yet enough developed
   o   Employees are not yet enough trained for working with online services
   o   Financial obstacles hinder implementation of online services
   o   Privacy concerns are a main barrier to implement online services
   o   Other, please specify:

8. Do you have training for civil servants/employees on how to use newly implemented electronic public services at your government agency? *(multiple choice – single answer)*
   o Yes
   o No
   o I do not know

9. Does your municipality develop a strategy to attract ICT-skilled civil servants/employees in your government agency? *(multiple choice – single answer)*
   o Yes
   o No
   o I do not know

10. To what extent to you agree with the following statement? *(matrix table – single answer)*

    The process from traditional face to face public services to public services online could improve customer service to the citizens.

    o Strongly agree
    o Agree
    o Neither agree nor disagree
    o Disagree
    o Strongly disagree

11. Is it possible as a citizen to retrieve information about register your new residency online on the municipality website? *(multiple choice – single answer)*
    o Yes
    o No
    o I do not know

12. Is it possible for a citizen to make an appointment online on the municipality website to register the new residency at the municipality office? *(multiple choice – single answer)*
    o Yes
    o No
    o I do not know

13. Is it possible for a citizen to register the new residency by logging in with an online identification tool on the municipality website when moving within the same city? *(multiple choice – single answer)*
    o Yes
    o No
    o I do not know

Experience as a professional

14. How often do you personally in your professional environment use any electronic public services provided by the Government? *(multiple choice – single answer)*
    o Daily
    o Weekly
    o Monthly
    o Yearly
    o Never

15. From your professional point of view, should your national government implement more electronic public services for citizens? *(multiple choice – single answer)*
    o Yes
    o No

15.1 If yes, please write down the name of those electronic public services that you would like to see in the near future: *(text entry question)*

16. Please answer the following statements: *(matrix table question – single answer)*

    To what extent are you satisfied with the development pace of electronic public service implementation in your country from your professional point of view?

    o Completely satisfied
    o Satisfied
    o Neither satisfied nor unsatisfied
    o Unsatisfied
    o Very unsatisfied

To what extent are you satisfied with the electronic public service supply your municipality already offers to citizens from your professional point of view?

o Completely satisfied

o Satisfied

o Neither satisfied nor unsatisfied

o Unsatisfied

o Very unsatisfied

17. To what extent do you think that the implementation of electronic public services would contribute to a stronger cross-border cooperation? *(multiple choice – single answer)*

o Very much

o Somewhat

o Undecided

o Not really

o Not at all

18. Please select whichever applies: *(multiple choice question – multiple answer)*

o I did have the full information to respond to this survey

o I did not have the full information to respond to this survey

o This survey did not apply to my municipality but I did my best to respond most questions

o I mostly provided my own opinion/assessment rather than official information

o Other: