Institutions in digital government transformation: Do different administrative cultures affect e-government?

A comparative study analysis of Estonia and Slovenia

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SUMMARY

In times of rapid change and increased demand for digitization of government services, the theoretical endeavour of understanding e-government implementation is more relevant than ever. In particular, among the debates in the literature, one determinant force that is yet to gather enough attention is administrative culture, and the administrative dynamics which ultimately constrain and shape the behaviour on the provider side of e-services. In this context, the present thesis focuses on understanding how administrative culture may affect e-government implementation, with a particular focus on Central and Eastern European countries. Four key dimensions of influence are identified: bureaucratic culture, normative culture, professionalism, and shared attitudes and vision. Through a comparative case study of Slovenia and Estonia, the present thesis evaluates which dimensions of administrative culture may be deemed relevant to explain e-government implementation, further contributing to the literature of Public Management, while at the same time showing that CEE present heterogeneity in their administrative culture and post-communist transition.

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LIST OF ABBREVIATIONS

R1	Respondent 1
R2	Respondent 2
R3	Respondent 3
R4	Respondent 4
R5	Respondent 5
R6	Respondent 6
R7	Respondent 7
R8	Respondent 8
R9	Respondent 9
R10	Respondent 10
EC	European Commission
UN	United Nations
ITU	International Telecommunications Union
ICT	Information and Communications Technology
CEE	Central and Eastern Europe(an)
AI	Artificial Intelligence
IS	Information Science
IT	Information Technology
BRM	Business Reference Models
COV	Co-variational
MSSD	Most Similar Systems Design
GDP	Gross Domestic Product
NRI	Network Readiness Index
EGDI	E-Government Development Index
PPP	Purchasing Power Parity

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Chapter 1: Introduction

"Digitization must be the heart of a sustainable recovery from the Covid-19 pandemic.
Through joined partnerships and investments, we will bridge the
digital divide and grow our digital economies."
- European Commissioner Urpilainen at the e-Governance Conference (2021)

1.1.   Problem statement

The concept of 'digitization' can be considered a buzzword today across the private sector, as the incorporation of technology in business is often seen as an all-encompassing strategy for transformation and innovation. This idea has extended also to the public sector, where the process of transformation of public administration through Information and Communication Technology (ICT) is being increasingly pushed as a fundamental policy agenda across countries. In the public sector, however, the process of digitization of government takes a different meaning, as ICTs are taken up to improve the efficiency of government services for all actors of society, from citizens, to employees and businesses (Carter and Bélanger, 2005). More precisely, the digitization of government, otherwise referred to as e-government, can be defined as "the use of ICTs to more effectively and efficiently deliver government services to citizens and businesses. It is the application of ICT in government operations, achieving public ends by digital means" (UN, 2020a). E-government has an equalizer potential, bringing services to any individual and remote location, but it also favours digital inclusion and literacy (UN, 2020b). The field, however, has gained particular momentum following the Covid-19 pandemic, which accelerated the demand for contact-free e-services, as citizens and employees demand for seamless, fast public services, such as unemployment benefit provision (McKinsey, 2020).

E-government is considered one of the key public administration reform trends of today (Agus-Prahono, 2015; Greve & Ejersbo, 2016). Following the efficiency-oriented and private sector inspired reforms of New Public Management (NPM), which had a radical impact from the 1990s across the world, some scholars have announced its slow demise in favour of Digital Era Governance (DEG) (Dunleavy, 2005; Denhardt & Denhardt, 2011; Margetts & Dunleavy, 2013). The strong influence NPM had in moving public sector reform to decentralization and competition, in order to reform rigid bureaucracies, can be seen today as being challenged by the emergent paradigm of DEG, of which e-government implementation and digital transformation are the key paradigms (Pollitt, 2011). Indeed, the

digitization of government processes has brought countries to re-evaluate the role and tasks of public administrators, bringing the citizens (or the users) at the forefront of reform objectives. In the European Union (EU), e-Government is seen to provide "a wide variety of benefits including more efficiency and savings for governments and businesses, increased transparency, and greater participation of citizens in political life" (European Commission, 2019a). Therefore, e-government becomes in itself a tool for public sector transformation, where the use of ICTs in government can deliver better services for citizens and business, but also empowering the citizens to participate in public sector development (OECD, 2020).

The promising field of e-Government has been engulfed, in a way, by a technological enthusiasm which is often reflected by the extensive research in Information Systems and ICT Management focusing on the technical infrastructure needed and cyber-security considerations. At the same time, significant empirical benchmark studies have been developed in order to assess data for measuring progress of nations and municipalities in e-government implementation. In particular, the European Commission (EC) developed the "eGovernment Benchmark" assessment in 2012, with the aim of developing a monitoring instrument for ICT developments in the public sector. However, as underlined by the EC itself, the arguments for implementing e-government at a European level imply not only a shift to greater cost savings, estimated to be of 50 billion euros, but also implies a radical rethinking of organisations and processes (European Commission, 2020a). This statement can be related to the idea that institutions themselves determine how e-government takes form, according to existing norms, practices and culture. This type of theoretical consideration on the organizational and administrative processes has been briefly touched in the literature, but different scholars have called for a more in-depth exploration of the institutional determinants of e-government implementation (Bolgherini, 2007; Weerakkoddy, 2012; Zhang & Feeney, 2020). Most crucially, an institutional approach to e-government seeks to remind policy-makers and practitioners that the implementation of e-government occurs through the existing norms and culture influencing organizations. Therefore, the digital transformation of government does not occur in a vacuum, but should be clearly explored in relation to the existing administrative environment and culture, in order to identify how to best implement and transform e-government.

This is precisely the focus of this thesis, as different e-government implementation levels across the countries may be explained by different factors, of which I identify four key categories, following Apriliyanti et al. (2020): Technological factors, Institutional factors, Organizational and Leadership factors. However, the e-government implementation studies have a large focus on Information Systems and Technology adoption theories, presenting a gap in in-depth research on the administrative dynamics through which government organizations may affect the outcome of e-government implementation, with consequences on the provision of services to citizens and businesses. Therefore, the first objective of this thesis is to delve into institutional explanations of e-government implementation, with a particular focus on the role of different administrative cultures in explaining variations in take-up across European Member States. Administrative culture refers to the attitudes, beliefs and norms of public servants (civil servants and public sector employees).

Administrative culture was chosen as a research endeavour because it allows me to shift the attention of the literature back to institutional determinants of e-government, while at the same time shedding light on the trajectory in public management reform taken by Central and Eastern European (CEE) countries. Indeed, the geographical focus of this thesis is CEE countries which, while the definition of this category may vary according to historical or cultural focus, are defined by the OECD (2001), as 11 European member states which used to belong to the former Eastern bloc, and are located in Central-Eastern Europe.[1] This thesis delves into a comparative case study of Estonia and Slovenia, which I characterize as countries with distinct levels of e-government implementation. By focusing on these two countries, this thesis seeks to identify variation in their administrative culture, allowing me to further contribute to the literature that distinguishes the CEE as separate countries in terms of their public reform trajectory, which can be analysed as a varying and non-monolithic group, despite their legacy of the communist past.

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[1] The countries considered are: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Slovenia, Romania, Bulgaria, and Croatia.

1.2.   Research Question

Therefore, following the problem statement, the objective of this thesis is to assess what is the influence of administrative culture on e-government implementation, in particular looking at CEE countries. More specifically, this study seeks to underline the importance of administrative culture as a variable in e-government research, arguing that an understanding of institutional contexts and determinants is crucial to implement innovative e-government applications, it is not an exclusively technology-driven process. For this reason, a comparative case study approach is chosen, where in-depth analysis of the administrative culture and e-government implementation in Estonia and Slovenia is presented. In this study, given the lack of research on administrative culture, I present four key dimensions through which it is expected to affect e-government: bureaucratic culture, normative culture, professionalism, and shared attitudes and vision. This thesis presents therefore multiple objectives, which will be attempted to be explored through the following research question:

How does administrative culture affect e-government implementation across Eastern European Member States?

In order to break down the empirical endeavours of this study, the following-sub-questions allow to structure the research in different chapters:

1. *What is administrative culture?*
2. *Are there administrative culture differences between Estonia and Slovenia?*
3. *Does administrative culture have an impact on e-gov. implementation levels?*
4. *Which dimensions of administrative culture are most relevant for explaining e-government implementation levels?*

1.3.   Relevance

The scientific relevance of this thesis relates to two key dimensions. On one hand, a review of the literature highlights why more research is needed in understanding *how* e-government is implemented and diffused, allowing for a nuanced an in-depth analysis of its diffusion mechanisms. In relation to this, this study adopted the suggestions from Weerakkoddy (2012) and Zhang and Feeney (2020) to delve deeper into the role of institutional factors, through a

comparative case study. Specifically, the present research endeavour of focusing on administrative culture is strongly relevant today, in a context where NPM reforms are seen to be being taken over by a new prospect of Digital Era Governance. Here, the idea of a digitized and possibly AI-based public sector ought not to be seen as a substitute for human-centered public management. In this regard, it is crucial to underline that the technology only goes to enhance, if not replicate, the existing administrative and institutional system in place in a country. Therefore, it is crucial to determine what the interaction is between the existent administrative culture within organizations, with processes of e-government implementation.

On the other hand, the societal relevance of this research is that, by understanding which dimensions of administrative culture may impact e-government implementation, policy-makers and middle-level public organization managers may have an increased awareness and assessment of organizational processes in place. With greater awareness, employees may be place greater efforts on those aspects of administration that can drive successful reform and e-government implementation. The consequences at an organizational level may be considered quite tangible and of more practical nature. This might have a direct impact on the quality and improvement of e-services, for which the Covid-19 pandemic has enhanced the demand. Indeed, the aims of this research fit the historical period of the current pandemic, that has catapulted governments almost a century forward in terms of digitization (E-Governance Academy, 2021).

Chapter 2: Literature Review

This chapter reviews the literature for e-government thematically, first reviewing its key definition. The identified focus of this literature review, and also of this thesis, is that of the "provider" side of e-government: therefore the *implementation* of e-government, which is fundamentally considered "an internal public administration issue" (Wirtz et al. 2015, p.102). The implementation of e-government services represents a key area worth exploring, as different studies underline that there is often a gap between the initial governmental goals and the effective implementation rates of e-services (UN, 2012; Wirtz et al. 2015; Wang, 2014). In turn, the successful e-government implementation is ultimately tied to a complex set of factors, which will be reviewed in section 2.2. I then turn to institutionalist theory, where administrative culture emerges as a key variable to understand e-government implementation across countries. The final section presents the literature gap.

2.1. Context of e-government

The e-government literature has emerged and flourished since the 1990s across a variety of fields, including information science, management, business, public administration studies and political science (Hu et al, 2010; Nixon, 2010). There is no universal conception for e-government however, according to Hu et al. (2010, p.590), who conduct a rigorous literature study of its distinctive lexicon, a summary can be identified in the following definition:

> "E-*Government is (a) the strategic initiatives of all levels of government (b) to develop, use, and manage applications, projects, and technology (c) of enhancing secure and effective processing, administrating, and provision of information and e-services (d) through websites in order to meet the citizens' and businesses' needs (e) or to provide an approach for citizens and businesses (f) to access secure and effective information (data, knowledge, policy) and e-services (e-democracy, communication) online*"

An equivalent, yet less exhaustive, definition is also provided by Carter and Bélanger (2005, p. 5), defining e-government as "the use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, business and agencies". In my study I will largely refer to this conception of e-government, as it provides a more open version of e-government, which extends beyond the use of websites to several different applications, as online voting or e-ID (digital identity).

2.2.   E-government implementation factors

It is not easy to identify the causal mechanisms, the enablers, and the drivers in e-government implementation. There is in fact a broad literature exploring such drivers which span different disciplines such as sociology, Information Systems (IS) management, political science and public administration (PA). Apriliyanti et al. (2020) provide an effective summary of the four key macro-dimensions which affect e-government implementation. These are technological, institutional, organizational and leadership factors, that include further influential dimensions for e-government identified by different scholars (Fidler et al. 2011; Wirtz et al. 2015; Ingrams et al. 2020; Vassilakis et al. 2005; McIvor et al. 2002; Bolgherini, 2007).

A systematic review of the literature through the Web of Science e-library, together with journal articles and conference papers, allows to identify the four key dimensions as relevant for understanding the enablers or barriers of e-government implementation. The first, key internal determinant is "Technology", which largely refers to the availability, quality and maturity of IT infrastructure, as Vassilakis et al. (2005) point out. Alternatively, authors such as Fidler et al. (2011) and McIVor et al. (2002) identify technological barriers such as a lack of shared implementation standards across departments and software maintenance costs. While Technological factors have largely been a concern of Information Systems scholars and Government Information technicians, the Management literature has also underlined the role of Leadership in e-government implementation, especially among government bodies, where the role of political actors and top level managers is deemed crucial for a horizontal, successful e-government implementation (Ingrams et al. 2020). The role of an effective leader has previously been researched, as Norris and Moon (2005) find that organizations lacking a leader with inadequate technology and web skills experience, face barriers in adopting e-government applications. These characteristics are usually adhering to the leadership of a Chief Information Officer (CIO) (Ingrams et al. 2020).

Moreover, a key debate exists in the literature between, on one hand, researchers and IT consultancies interested in the technical components of e-government, while on the other hand, institutionalist researchers arguing that variation in e-government depends on national state structures (Eom, 2012; Fountain, 2007; Hassan & Gil-García, 2008). Andersen and Henriksen (2005), conduct a review of the e-government literature up to 2003, within which emerges that a large part of e-government research is still focused on the IT determinants

and infrastructure leading to e-government implementation, rather than focusing on the governmental role in technology diffusion. This phenomenon has been studied extensively by Bolgherini (2007: 271) according to whom a "technological determinism" can be found in the literature for e-government. This refers to the argument that the main determinant for e-government implementation is the level and employment of IT-related factors, which requires a technical expertise and significant investment in infrastructure.

Bolgherini (2007) explains how there is a strong focus of IS and IT studies on the insufficient level of infrastructure and IT-specific expertise among administration employees, which is causally related to poor e-government performance. The analytical importance given to the technological factor often overshadows, according to Bolgherini (2007) the social, cognitive, and cultural components, that can actually be determinant to explain e-government failure or success, together with varying implementation levels. To this end, the author finds three key variables related to e-government implementation: the role of political elites, the role of administrative sectors, and the legacy of political culture and administrative traditions. Future studies are suggested to delve into qualitative in-depth case study, in order to adequately understand technology and the institutional contexts in which it is shaped. This point requires further clarification, revealing an important literature gap, which the next section seeks to expand upon.

2.3.   Institutionalist theory

This section builds on Bolgherini's (2007) claims, delving into the foundations of institutionalist theory. Institutions can be defined, in a summarized way, as the formal and informal rules and procedures, also referred to as the rules of the game of political processes and policy outcomes (Schmidt, 2010; Campbell, 2004). In this context, there are three key currents of institutionalism identified (Hall and Taylor, 1996). Rational choice institutionalism focuses on rational actors, pursuing preferences through incentives following the "logic of calculation" in political institutions (Schmidt, 2010, p.1). Historical institutionalism focuses on the routinized patterns shaping the development of institutions that are seen to follow a logic of 'path dependence', where past structures and decision-making processes constrain how policy is formulated. On the other hand, sociological institutionalism focuses on "the forms and procedures of organizational life stemming from culturally specific practices", and thus following a logic where institutions are socially and culturally framed through rules and norms

(Schmidt, 2010: 18; March and Olsen, 1989). For the purposes of my research, the choice of sociological institutionalism is particularly apt, as it adopts the lens of cultural frames shaping the rules of the game of political phenomena. Indeed, the path-dependency lens of historical institutionalism, is precisely the argument from which this thesis departs, as the geographical focus on Eastern European Countries seeks to shed some light on their public administration reforms which, since post-communist reconstruction, can now be seen as having their own distinctive characteristics and thus, path-departing.

Following this introduction, I will now turn to four key papers investigating e-government implementation, placing a particular emphasis on institutionalist explanations. The paper by Eom (2012) takes such a perspective on e-government implementation, arguing that the same e-government practices do not produce the same outcome across countries. The study has a cross-national perspective of the e-government application of Business Reference Models (BRM) initiatives in the United States and Korea. The study finds the stronger implementation of a function-oriented BRM in the US, in contrast to the weaker Korean BRM, is associated with the higher concentration of authority, the use of powerful managerial tools for control and strong leadership from the federal agencies (Eom, 2012: 897). The study contributed to the literature by emphasizing the role of strong institutional arrangements as a key enabler for e-government applications, particularly of inter-agency institutional arrangements.

The paper by Fidler et al. (2011) highlights a different aspect of institutionalist arguments, which is that of the rule of culture influencing e-government implementation. Through a case study of Jordan, the authors show that "Wasta", which can be considered a form of corruption, is a cultural barrier for e-government implementation, as it leads to the over-staffing of unqualified personnel, wrong contractors winning bids and creating a low priority for e-government. The identification of this cultural barrier is considered an important factor which in turn affects other dimensions, as Feng (2003) describes culture as being "the principal reason for the difficulties faced in e-government implementation".

The relevance of a focus on culture can still be relevant today, as the recent paper by Zhang and Feeney (2020) also investigate the role of culture, more specifically investigating how the administrative culture and formal institutions may promote the use of ICTs. Of particular interest to the present study, their framework studies two dimensions of administrative culture, bureaucratic and participatory culture, relating them to the extent to

which ICTs are adopted in the public sector and, moreover, how formal mandates and legislation can affect these dynamics. According to Zhang and Feeney (2020), legal mandates crucially shape the adoption of ICTs, but most importantly this is determined by administrative culture, which can further influence whether ICTs are adopted and whether for citizen participation purposes. They show that administrative orientation is important in the adoption of ICTs and that a bureaucracy-oriented administrative culture is less likely to adopt ICTs and less likely to do so for participation purposes.

An additional paper that takes an institutionalist perspective, is that of Weerakkoddy (2012), who compares e-government in the United Kingdom and Slovakia, with the aim of understanding the difference in e-government between developed and "transition" economies in Europe. While the research it is not able to generalize its findings to other countries, largely due to empirical reasons. An important issue that emerges here, however, is the concept of 'transition' economies used in Weerakkoddy's study. In fact, according to this paper, the post-communist Central and Eastern European (CEE) countries are classified and studied in the same group of transitioning country. However, there is a growing literature in public administration studies, among which stands out Meyer-Sahling (2009), that underlines that CEE countries ought to be studied through their unique reforms of public management. The correlation of features between post-communist administrations does not mean that there is a strong enough causal link between past configurations and present administrative reform. This particular point paves the way for one of my key research aims.

2.4.   Literature Gap

This chapter has reviewed the literature for e-government implementation, first defining it and then identifying its key determinant categories. Different studies have explored the Technical, Institutional, Organizational and Leadership determinants of e-government, yet a particular point of contention in the literature emerges between the technical determinants and the institution-oriented explanatory factors, where institutionalist research is deemed to require greater research. While Eom (2012, p. 877) argues that "Institutions matter" in IS/IT research and provide tangible evidence for this, Bannister (2007, p.186) encourages future researchers to "supplement benchmarks with a small number of in-depth case studies", as case studies may allow to study the implementation of e-government in a more dynamic way and through the study of elements that may be less easily quantifiable. Therefore, a first gap

that can be identified for studying e-government implementation is a focus on the internal institutional dynamics that shape change. This thesis aims to contribute to such a gap, while at the same time taking a cross-national focus on CEE countries. Indeed, the path-dependent arguments surrounding the communist legacy of said countries, can be deemed outdated, and requires, as underlined by Meyer-Sahling (2009), a new focus on the public management reforms implemented, among which e-government stands out as a truly revolutionary force. Therefore the second aim of this research is to contribute to the body of literature characterizing CEE countries as heterogenous and path-departing countries, through which an analysis of their institutional contexts may help explain their implementation of e-government.

Chapter 3: Theoretical framework

This chapter presents the theoretical framework of the present research, through which I will explain the empirical focus of my thesis. Following the emphasis on institutionalism from the literature review, section 3.1. answers the first sub-question "what is administrative culture?", presenting the independent variable of *administrative culture* as a potential determinant of e-government implementation. In turn, section 3.2. presents the theory and expectations on the sub-question of the effect of administrative culture on e-government implementation levels.

Prior to doing so, however, I ought to provide a specification for the dependent variable of e-government. As underlined in the literature review, the focus of this research will be on the internal administrative workings and culture which may determine e-government. Therefore, the current thesis' focus on e-government relates to its *implementation*, and not its *output* on citizens and business. Indeed, the dimension of citizen take-up of e-government requires a different analysis of potential demographic and psychological factors determining the take-up of e-services as a society, and therefore extend beyond the scope of this research. E-government implementation, on the other hand, refers to the government's take-up and implementation of digital transformation of public services through ICT facilities. For example, this may take the form of cloud-based communications, the electronic filing of tax returns, together with e-ID (Digital Identity) or the creation of government portals for communications and provision of e-services. Therefore, the next sections will present the key theoretical underpinnings of this study and formulating the hypotheses to be tested in the Analysis.

3.1.   Administrative culture

The literature review has highlighted the need for going beyond technological determinism in e-government, calling instead for a more contextualized understanding of its implementation. This endeavour allows institutionalist theory to be particularly apt for capturing in a dynamic manner how IT initiatives in public organizations are "complex and emergent phenomena that are shaped by both technical-rational and institutional issues" (Hassan & Gil-Garcia, 2008, p.352). One variable that has emerged in institutionalism is the role of culture as a key determinant of e-government implementation levels, particularly in

cross-country studies of e-government (Feng, 2003; Alsheri & Drew, 2010; Davison & Martinsons, 2003; Chang, 2002; Shwartz, 2003). However, often quantitative e-government studies superficially present the variable of culture, as underlined by Nurdin et al. (2010), and do not identify how and what specific dimensions of culture influence e-government implementation. This endeavour is not facilitated by the fact that academically there are more than 200 definitions of culture according to Sørnes et al. (2004). If we take the general definition from Alsheri and Drew (2010) culture refers to the assumptions, beliefs and values that all members of a society share in common.

Given the complexity of this concept, the present research has a two-fold objective: on the one hand, to understand culture in e-government in a context-sensitive manner, using therefore the case study approach to fulfill the greater need for depth. Fidler et al. (2011), for example, develop a case study in Jordan, identifying "*wasta*" (corruption) as a crucial cultural barrier to e-government implementation, that in turn can reinforce other barriers to e-government. On the other hand, the second aim of the present research is to narrow down the focus of culture, to the particular trait of *administrative* culture. The selection of this independent variable will be explained in the next sections and underlined its expected relation with e-government.

3.1.1. Definition of administrative culture

Generally, administrative culture can be understood as the pattern of values, attitudes, beliefs and norms characterizing an administrative system. It is often identified as "the common beliefs and attitudes of officials and bureaucrats" and researchers have mostly focused on top-level administrators in order to determine administrative culture (Yun, 2006, p.495; Jamil et al. 2013; Zhang and Feeney, 2020). Often the concept is "overshadowed" by organizational culture and political culture, that refer to the legal and organizational structure of public administration (Marcheva, 2013, p.963). Beyond these factors, however, public administrations are also affected by the values, orientations and perceptions of its top-level administrators, an element which has not been explored extensively in the literature. To this extent, this thesis additionally defines administrative culture as a public interest, linked to its legal and managerial constraints, where the values and standards of public administrators are important variables to identify and to keep in check (Pečarič, 2011, p. 385).

Like all cultures, whether national, occupational or organizational, "administrative culture is the result of a process of immersion, acculturation, and socialization, whose structural drivers are both implicit as well as induced and explicit" (Dwivedi, 2005, p.21). For the purposes of the present research, administrative culture is relevant in understanding more in-depth the behaviour of state apparatus, which in turn is crucial to understand how e-government can be implemented differently across countries. This occurs because the policies and administrative decisions implemented by the state apparatus, together with the distribution of resources in a state, are deemed to be intrinsically affected by the administrative culture prevailing in a country (Dwiwedi, 2005). Pečarič (2011, p. 405) emphasizes strongly the role of administrative culture in a Post-NPM paradigm, where neutrality of public administrators as machines does not exist, but the accountability and promotion of values and norms among public administrators can lead people to "retain trust in public administration that will lead the nations towards better future".

3.1.2. Dimensions of administrative culture

The dimensions of administrative culture used in the present study originate from the definitions of Riggs (2002) and the more recent research by Suzuki & Demircioglu (2019). It is not easy to narrowly define administrative culture, as it is a variable evolving with the fast-paced changes of the culture and innovation of each society. However, the dimensions identified in accordance with the literature allow for a broad enough delineation of some key, determinant characteristics of administrative culture. Fred Riggs is one of the leading scholars in public administration in the United States, known for his work in comparative studies of public administration. Riggs (2002) defines administrative culture as a complex umbrella term that includes the dimensions of Knowledge, Shared Beliefs and Practices (also associated to Bureaucratic culture), Shared Attitudes, and Normative administrative culture. Such dimensions are presented and explained in Table 1 together with Professionalism and Impartiality, which have been identified too by Suzuki & Demircioglu, 2019).

Dimension	Characteristics	Definition
Bureaucratic culture	Shared beliefs and values of public administrators and an organization	The orientation of the civil servants and government organizations towards bureaucracy can be understood as bureaucratic culture. A more bureaucracy-oriented organization is characterized by a high degree of top-down communication, a strict management style, allowing for limited initiatives and favouring an adherence to norms and rules (Hendryadi et al. 2019). An organization with greater bureaucratic culture searches for stability, however it is also often perceived from surveys as favouring "unnecessary and complicated procedures when completing government transactions" (Alawadhi & Morris, 2009: 587).
Professionalism	Focus on public administrators and personnel	The extent to which public administrators exercise government power and authority adhering to the rule of law. This in turn ensures that the ease of conducting government affairs remains credible and trustworthy to citizens but also private actors, which in turn may attract greater investment in innovative activity from the private sector (Suzuki & Demircioglu, 2019; Rothstein & Teorell, 2008).
Normative culture	Institutionally and legally driven	Administratively, this can take the form of in-service training and we might understand normative administrative culture as the orientation towards improving the efficiency and quality of public administration through research, education and training (Riggs 2002). It results from efforts by political leaders and top bureaucrats to reform organizational structure and guidelines in order to achieve more efficiency and responsible governance.
Shared vision and goals	The cultural attitudes that can be identified within an organization	The variable refers at a broader level to the cultural attitudes and communication climate which can be identified within an organization. This can be associated to an open or closed system organization, where in the former, the information and knowledge flows easily within the organization and among administrative levels, whilst in a closed system it is more hierarchical (Cabrera et al. 2001).

Table 1: Dimensions and definitions of administrative culture

3.2. The effect of administrative culture on e-government

I now turn to the relevance of administrative culture to explain e-government implementation levels. Indeed, the purpose of the present research is to understand better such relation, in order to assess whether an extended definition of administrative culture that

includes professionalism, low bureaucratic culture, favourable normative culture and open vision and shared attitudes can explain higher levels of e-government implementation across countries. Indeed, taking a neoinstitutionalist approach, the structure of a government organization is seen as creating a distinct pattern of constraints and incentives for state and societal actors, which in turn generates a particular administrative practice and culture (Mochi, 2012). This can vary across countries, making administrative culture a variable varying according to "different kinds of relatively long lasting patterns of administrative behaviour" (Mochi, 2012, p.618).

The following sections explain the identified relationships between the four dimensions of administrative culture and e-government implementation, explaining why the focus for such variables has been chosen and formulating the relevant hypotheses. Given the lack of existing theoretical frameworks exploring this relation, I present my own expectation and conceptual framework, supported by the literature on e-government and culture, particularly building upon those of Nurdin et al. (2010) and more recently Zhang and Feeney (2020).

Bureaucratic culture

In the anthropological sense, administrative culture can include the distinctive attitudes and shared beliefs of a community (Riggs, 2002, P.61). This, according to Riggs (2002), can take the form of a *bureaucratic culture* among public administrators referring to their orientation towards bureaucratic ideals. A more bureaucratic culture focuses on saving costs, minimizing public participation, top-down communication and centralized decision-making (Zhang and Feeney, 2020; Hendryadi et al. 2019). Alternatively, public officials may be characterized by a less bureaucratic culture, deemed instead more participatory in nature, where they demonstrate an open systems attitude in government work, often entailing a results-oriented approach to the organization and less bound by following rules strictly (Zhang and Feeney, 2017; Zhang and Feeney, 2020). Initially this valence of bureaucracy was mainly positive, particularly in context where civil servants would abuse power and clear regulations would reduce corruption. However, over time, and particularly during the birth of the NPM paradigm, the increasingly rapid bureaucratization of government systems was seen negatively, as it would lead to inefficient and slow administrative processes (Pečarič, 2011). While Pečarič relates this to general public sector efficiency, Nurdin et al. (2010) identify more

specifically how bureaucratic culture, but also shared attitudes, are relevant variables for explaining e-government implementation.

Nurdin et al. (2010) present an inductive study of cultural factors that may be relevant to explain e-government implementation, allowing me to formulate expectations relating to bureaucratic culture and shared attitudes and vision. Nurdin et al. (2010) argue that bureaucratic orientation in administrative culture can have a positive relation with the level of e-government implementation, particularly in developing countries that may need regulations to prevent corruption. The issue, however, is that high levels of bureaucratic culture, especially in developed countries, may slow down organizational processes favourable to innovation adoption. In that regard, Zhang and Feeney's (2020) framework consider organizations with bureaucratic-oriented cultures less likely to implement ICT successfully. While this finding is not explicitly related to e-government, Azad et al. (2010) argue that "the similarities between ICT/Internet and e-Government both technologically and institutionally are far greater than potential differences" (Azad et al. 2010, p.88). Therefore, similarly to Azad et al. (2010) I will take the expectations of Zhang and Feeney (2020), who relate administrative culture with ICT take-up in the public sector, and extend them to e-government, in order to observe which dimensions may be potential drivers.

H1: Bureaucratic-oriented administrative cultures are less likely to have a higher level of e-government implementation.

Shared attitudes and vision

Following the theoretical framework of Nurdin et al. (2010) previously mentioned, the authors expect a greater cohesion of goals and shared visions in the culture of a government organization to be associated to greater levels of e-government adoption. Moreover, the characterization of an open system organization, where information flows easily and in a networked manner, may further allow to understand this dimension As the authors only provide a theoretical framework, but do not test such hypothesis, this dimension is picked up in the present research, to be tested in the analysis. Therefore, this hypothesis follows:

H2: An administrative culture characterized by shared attitudes that are flexible and open to change may lead to higher levels of e-government implementation.

Normative administrative culture

Administratively, this can take the form of in-service training and we might understand normative administrative culture as activities that improve the efficiency and quality of public administration through research, education and training. Normative administrative culture results from efforts by political leaders and top bureaucrats to reform (or 're-invent') organizational structure and guidelines in order to achieve more efficiency and responsible governance (Riggs 2002). Indeed, normative considerations have been traditionally present for the civil service sector, as civil servants are seen to require general guiding principles, usually associated to Codes of Ethics or Public Service Acts (Palidauskaite et al. 2010). Conscentious public servants also seek to improve their own performance. In this sense administrative culture involves the enhancement of administrative performance, and through the empowerment of employees through best practices and IT literacy, also the level of e-government is expected to be more efficient.

H3: **Normative administrative culture favouring in-service training availability is expected to be related to a higher level of e-government implementation.**

Professionalism

Firstly, the dimensions of Prefessionalism present in the administrative apparatus refers to administrative characteristics concerned with the rule of law (Suzuki and Demircioglu, 2019). This concept impacts the logic of administrative structures, as Van der Wal (2017) argues that more professional, ethical and proactive public administrators and bureaucrats promote more innovative activity in their own departments but also in society. In turn, professionalism can be considered therefore a precondition for successful public sector coordination. Therefore, from such a formulation, it can be expected that a greater administrative culture of professionalism is related to greater levels of e-government implementation.

H4: **An administrative culture characterized by professionalism is more likely to have a higher level of e-government implementation.**

3.3. Conceptual framework.

Overall, this chapter presented the definition of the independent variable of administrative culture. Moreover, given the absence of a precise characterization and definition of administrative culture from the literature, I presented four dimensions through which administrative culture can be studied. This paves the way for an empirical assessment of how the variables may impact e-government, shown in the conceptual framework in figure 1, which brings together the dimensions expected to affect e-government implementation (in dark blue), together with the control variables (in lighter shade).

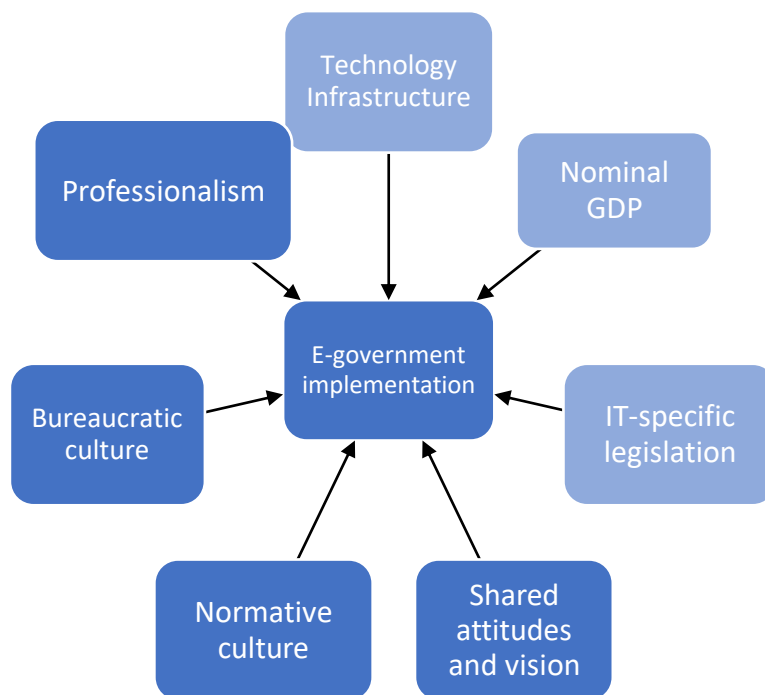**Figure 1: Conceptual framework of variables**

Following the theoretical framework presented in this chapter, administrative culture is expected to affect e-government implementation, more specifically articulating the variable through its four identified dimensions. These are shown in Figure 2, which summarises the central endeavour of this research.

Figure 2: Conceptual model for this thesis

Chapter 4: Research design and Methods

This chapter outlines the research design and methods used in this study. The co-variational (COV) approach is chosen, following which I explain the research strategy through case selection. A summary of the key variables is presented, in order to then inform the case selection of the present research. Following an explanation of the data collection, the chapter then concludes with considerations on the validity and reliability of the study.

4.1. Research approach

This section looks at the research strategy and design chosen that allows to study the problem question adequately. The research strategy for this thesis is that of a small-N comparative case study research built on qualitative analysis, which is often applied in Public Administration research attempting to understand better a particular social issue (Van Thiel, 2014). In these cases, the researcher seeks to evaluate in-depth a particular phenomenon and uses therefore extensive descriptions and "finely grained empirical evidence" of the phenomenon it is studying (Blatter & Haverland, 2012: 8). This already presents a limitation to the external validity of the research, as it cannot be easily replicated due to the nature of context-sensitive information collected. However, an advantage of small-N research is that, while it is a rich research strategy in itself, it can also give insight into relationships among variables as a starting point for future quantitative analysis large-N analysis (Lieberman, 2005). Therefore, I am delving into a small-N comparative case study, mainly based on mixed qualitative data such as semi-structured interviews, content analysis of reports and legislation, secondary source analysis, and interpretation of data from an e-government conference of experts organized by the e-Government Academy in Estonia. In regards to the research design, there exist three main types of designs for small-N case study research: co-variational analysis, causal-process tracing, and congruence analysis.

4.2. Research Design: Co-variational study

The chosen design for the present research is the co-variational approach, which is well suited for my research question as it tries to explain whether a specific variable makes a difference on a specified outcome (Blatter & Haverland, 2012). Indeed, the present study is X-oriented as it looks at the effect of the specific dimensions of the independent variable of

administrative culture (X) on e-government implementation (Y). The focus, moreover, is on the relationship between different dimensions of administrative culture, and to understand whether e-government is implemented more successfully when there is a favourable administrative culture, characterized by adaptable, impartial, results-oriented public administrators, who act in an environment where shared vision and innovation-oriented normative culture is presented. This is a relevant endeavour particularly in the Central and Eastern European countries, where there is a great need for research investigating their administrative processes and culture, which no longer can be measured against the benchmark of post-communist legacy.

In relation to this, the research takes a cross-sectional design, which means that spatial variation is measured across different cases in the same period. The time period selected Is 2001-2020, from the years of the accession of CEE countries to the European Union (EU) in the early 2000s, and up to the implementation of e-government directives (such as the 2016-2020 e-government action plan) with more recent data available (2020). According to Blatter and Haverland (2012) cross-sectional observation is used especially when comparing countries in one specific geographical area, as is the present case with CEE.

4.2.1. Most Similar Systems Design

The co-variational design achieves internal validity through deliberate case selection, which is the ordered and non-random selection of cases. At the core of this approach is the rule for causal inference, which is achieved when co-variation exists over time or space between the causal variable of interest (such as X) and the dependent variable (Y), following which we can infer that X has caused Y (Blatter & Haverland, 2012; Van Thiel, 2014). In order to achieve this, there are different designs which can be selected, of which the Most Similar Systems Design (MSSD) is particularly relevant for this thesis. This design originates from the principle developed by Mill (1843: p.463) in his *A System of Logic*:

"If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance save one in common, that one occurring only in the former; the circumstance in which alone the two instances differ, is the effect, or cause, or a necessary part of the cause, of the phenomenon".

This same condition is not easy to find in the social realm and, for this reason, Przeworski and Henry (1970) devised an alternative design of 'most similar system' or 'most different system' cases which allows for a small set of variables to vary concurrently with the outcome.

Indeed, this thesis seeks to understand the different characteristics of similar countries, in order to explain an observed outcome, such as e-government implementation. This characterizes the present research endeavour as case-oriented because, as identified by Landman (2000), a researcher has less control over the values of the independent variables of interest, but it does have more over the other variables, such as dependent and control variables. Therefore, Landman (2000, p.28) suggests two types of research for comparison across two or more countries: the comparison of "different outcomes across similar countries, which is known as Most Similar Systems Design (MSSD)", or alternatively the comparison of "similar outcomes across different countries, which is known as the Most Different Systems Design (MDSD)". The objective of both designs is to uncover what is common in each country that may explain the observed political outcome (Landman, 2000). Following this reasoning, cases may be selected based on the value of the independent or dependent variable of interest, as long as the control variables are similar between the cases, in order to avoid selection bias. Therefore, in order to assess whether administrative culture has an impact on e-government implementation the present research evaluates whether other related factors may explain the observed outcome. This thesis follows Landman's (2000) research, adopting a case selection according to the similarity of control variables and variation in scores of the dependent variable.

4.3.   Operationalization of key variables

Researchers using the COV approach construct their analysis on a case selection that is deliberate and non-random, and thus fundamentally depends on the definition and measurement given to the variables selected. Indeed, measurement of the variables is so crucial that Blatter and Haverland (2012) suggest considering measurement issues prior to the case selection. Therefore, this chapter takes a structured order: it first looks at how to operationalize the dependent variable, the independent variable, and the key control variables. I then turn to case selection.

4.3.1. Dependent variable measure: E-government implementation

The dependent variable for this thesis is e-government implementation. Following the theoretical definition, e-government implementation is the provision and implementation of e-services and refers therefore to the provider perspective of e-government. E-government implementation presents multiple dimensions, as it can refer to e-services provision but also qualitative features of how efficient is the service provision. For this reason, adopting maturity evaluation models may capture e-government implementation appropriately. The present study develops a categorization following the UN's (2020b) e-government maturity model, which presents four stages of evaluation: (1) Online presence; (2) Transactional; (3) Connected; and (4) Transformative. These first, 'Online presence' represents the starting point of e-government implementation, the Transactional phase . The third phase refers to a fully integrated service delivery, where interactive communication seeks to include some elements of democracy in e-government. The Transformative phase refers to joined-up e-governance, where service are horizontally integrated between ministries and various for a for interactive democracy are provided. Following the UN's model, there are nine dimensions which define the four stages of e-government, as shown in Appendix 5. For the purposes of this thesis, I will focus on four key dimensions to evaluate the maturity level, (1) Systems thinking and integration; (2) Data management; (3) ICT Infrastructure, affordability and access; (4) Capacity of capacity developers.

In addition, in order to select and examine multiple cases across a specific time period of 2001-2020, the use of an index may help to provide clear cut-off points. In particular, in order to operationalize the implementation capability and adoption of ICTs within government, two different indices are used to determine the *outreach* of e-government implementation:

(1) The Online Services Index (OSI), which is a sub-index of the UN's E-government Development Index (EGDI) that measures a government's capability and willingness to provide services and communicate with its citizens electronically.

(2) The Network Readiness Index (NRI), developed by the World Economic Forum, has four sub-indices: Environment, Readiness, Usage and Impact. The sub-index of Government usage pillar (GU), assesses the leadership and success of the government in developing and implementing strategies for ICT development. This is measured by the availability and quality of government online services and is therefore most relevant.

4.3.2. Independent variable measure: administrative culture

The independent variable of interest for this research is administrative culture, which can be defined as the combination of attitudes, norms and beliefs characterizing an administrative system, operationalized through the common beliefs and attitudes of public servants and bureaucrats. The theoretical framework underlined four key dimensions through which administrative culture can be studied, which are defined and operationalized in table 2. For all dimensions, qualitative indicators are used, which through the interviews and documents can be more tangibly defined. The coding scheme with the more specific values characterizing each dimension can be found in Appendix 4. It is important to however give clear values to each variable, as this has an effect on the method in empirical analysis (Van Thiel, 2014).

Variable	Administrative culture			
Definition	The common beliefs and attitudes of public servants and bureaucrats surrounding the role of their organization and towards the state administration.			
Dimension	**Bureaucratic culture**	**Normative culture**	**Professionalism**	**Shared attitudes and vision**
Definition	Bureaucratic culture is defined as the distinctive attitudes and shared beliefs of public administrators towards bureaucratic ideals (Zhang and Feeney, 2020; Hendryadi et al. 2019).	Normative culture can be operationalized through the availability of in-service training, which allows an organization to reform and innovate in order to achieve more efficiency and responsible governance (Riggs, 2002).	Professionalism is operationalized as the extent to which a public servant adheres to the rule of law. This can further take different characteristics according to administrative procedures or ethics code.	
Indicators	(1) **Regulation-oriented**; Adhering to more bureaucratic procedures. (2) **Participatory nature**; Focused on results and less bureaucratic oriented	Availability of in-service training.	Respect of the rule of law.	To be defined inductively.

Table 2: Definition of administrative culture and its four dimensions.

4.3.3. Control variables

A crucial part of the COV analysis with MSSD design is to select the cases according to the similarity of values of the control variables, which are variables that may potentially influence the analysis (Van Thiel, 2014; Blatter & Haverland, 2012). Moreover, identifying the control variables, this limits their ability to potentially interfere in explaining the level of e-government implementation, increasing the internal validity of the research. This section presents the four control variables: (1) GDP per capita; (2) IT Infrastructure Maturity;(3) Year of accession to the EU; (4) IT-specific legislation; (5) Communist past.

GDP per capita

The work of Norris (2001) established that higher levels of economic development are correlated with more sophisticated ICT and Internet environments worldwide. In turn, following Singh et al. (2007), as countries develop economically, also the ICT has greater material channels of access to be embedded in organizational structures, and therefore e-government can be implemented more easily (Azad et al. 2010). The economic capacity of countries is operationalized through GDP per capita adjusted for Purchasing Power Parity (PPP), defined as the value added created through the production of goods and services in a country during a certain period (OECD, 2021). Ingrams et al. (2020) find that at a general level, GDP is influential on e-government implementation, although variation exists between smaller and bigger countries.

IT infrastructure maturity

A higher level of ICT infrastructure maturity can be considered a factor, similarly to higher GDP, positively shaping the overall environment in which e-government can be implemented (Azad et al., 2010; Holzer & Manoharan, 2012; Stier, 2015). The maturity and availability of ICT infrastructure can be positively associated to the shaping of ICT and Internet decision making, and therefore provide the access and expertise for a successful e-government implementation, from a technical perspective. Consistent with prior research, the level of Technology Infrastructure Maturity is operationalized through the rate of Internet Penetration (Norris, 2001). The level of internet penetration is included as a control variable using the data provided from the International Telecommunication Union (World Bank).

Year of accession to the EU

The role of EU accession can be considered relevant as different scholars underline that EU accession is associated to a facilitating of institutional convergence, which is then reflected in the policy outcomes across countries (Böwer & Turrini, 2009;). The year of accession can also act as a signpost to distinguishing between the Member States which implemented earlier the *acquis communautaire* conditionality (Plümper et al., 2005). In that sense this variable can be considered a facilitator, as it distinguishes between those Member States that joined the EU earlier or later, and in particular for distinguishing which countries adhered to the common frameworks of Internet connectivity ("eEurope 2002", "eEurope 2005") that set the foundation for e-government frameworks across the countries (Nixon, 2007). This will be operationalized through the year of accession to the EU.

IT-specific legislation

Legislation is important in regulating the applications of e-government, such as regarding privacy, electronc signatures and data security. IT-specific legislation therefore is considered a pre-condition for ensuring privacy and security standards on government websites. A clear communication and policy allows the foundations for trust and a willingness to develop e-government applications, making it a key control variable (Aljujran and Cahtfield, 2008).

Communist past

Meyer-Sahling (2009) underlines how it is too simplistic to reduce all modern practices to the legacy of communist past, as many countries decided to radically depart from that legacy. In this sense, the administrative culture differences that developed from the 'cut-off' point of the post-communist transition, did not adopt the same characteristics between the countries. Therefore, it is important to distinguish the countries which were part of the former Soviet Union, in order to identify that legacy of the communist past. In turn, the analysis of this thesis may shed some light on whether and how a transition to distinctively separate features of administrative culture may have developed.

4.4.   Case Selection

As specified in the research question, this thesis is interested in the role of administrative cultures in explaining e-government implementation across Central and Eastern European (CEE) countries. These countries were chosen as there is a growing body of literature underlining that CEE countries have undergone an large amount of administrative reforms since their post-communist development, generating new administrative structures and cultures that require greater exploration (Kitschelt, 2003; Goetz, 2001; Meyer-Sahling, 2009). Indeed, those countries that were formerly part of the Soviet Union, did not face as much the question of reforming state organizations, but building them up from scratch (Sarapuu, 2011). The CEE countries inherited bureaucracies dominated by a single party system, with the additional pressure of meeting the accession requirements for joining the European Union. Therefore, most post-communist countries faced similar pressures of economic and political pressures to reform.

However, the end of the 1980s and early 1990s represented a critical juncture for CEE countries, as the politico-administrative development of the countries undertook several changes, to such an extent that some countries' trajectories are said to have diverged from each other (Meyer-Sahling, 2009a). Meyer-Sahling (2009b, p.524), in particular, underlines that arguments of communist legacy explaining present reforms requires a perspective that also "accommodates the diversity in the region", as each country faced reform according to their own local administrative traditions, combined with lessons from abroad and domestic crises. Amidst the process of post-communist reform, some countries are expected to have developed features of their administrative culture that may have revealed more or less favourable for implementing e-government successfully. Therefore, the present thesis will explore whether the administrative cultures for the identified cases do in fact vary, in order to be able to say that the independent variable has an effect on e-government implementation. This will then be related to the existent theory in order to demonstrate whether the two variables do indeed co-vary, controlling for other potentially influencing variables.

4.4.1. Selection of countries

Out of the 11 CEE countries, this thesis focuses on Estonia and Slovenia, who both became EU Member States in 2004. The selection of cases follows the MSSD case selection criteria, where the cases selected present similarities in the control variables, shown in table 3.

Variable	Characteristic	Country 1	Country 2
Control variable	Legacy of communist past	Yes	Yes
Control variable	Year of accession to the EU	Same (2004)	Same (2004)
Control variable	GDP (per capita)	High	High
Control variable	IT-specific legislation	Medium-high	Medium-high
Control variable	ICT infrastructure	Developed	Developed
Independent Variable of interest	*Administrative culture*	?	?
Dependent variable	*E-government implementation*	**Higher**	**Lower**

Table 3: MSSD design from Blatter & Haverland (2012) adapted to the present study

Both countries present a legacy of communist past, and present similarities in their GDP per capita (in euros), which in 2020 was of 32,177 for Estonia and 32,485 for Slovenia (OECD, 2021). In this regard, both countries can be considered relatively small countries and their size of the economy is similar. In terms of ICT Infrastructure, following INSEAD's Network Readiness Index, comparing the values of the Technology pillar, which includes access to IT infrastructure, digital participation and availability of latest technologies, the countries present relatively homogeneous values: 64.34 for Estonia and 64.86 for Slovenia (Dutta & Lanvin, 2019). Comparing the different variables, particularly GDP and ICT infrastructure, it emerges that Estonia and Slovenia present the highest similarities in terms of control variables. Therefore, this study focuses on the two countries for the period between 2004 and 2020. The two countries, moreover, have been previously compared in terms of their size, socio-economic background and history (Janeska-Sarkanjac, 2012).

In order to check for selection bias, the dependent variable for Estonia and Slovenia is compared, following the OSI - Online Services Index (sub-index of the EGDI) and together with the Government Usage from the Network Readiness Index (NRI), revealing that Estonia is the

highest ranking country for e-government in Europe, and amongst the highest in the world. The Estonian values for the OSI (0.9941) and NRI (99.39) reach almost the maximum scores, and Slovenia on the other hand, is ranked slightly lower from Estonia, with an OSI value of 0.8526 and NRI of 84.84. Moreover, the e-government study developed by the European Commission finds that Estonia is ranked among the three highest in e-government implementation, and Slovenia ranks slightly below the European average. Therefore, variation in the dependent variable can be observed, allowing for the cases of Estonia and Slovenia to be the most relevant and appropriate for this study.

4.5.   Data collection and analysis

The data collection methods used in this study include semi-structured interviews, document and secondary source analysis, in order to identify and conceptualise how e-government is implemented in Estonia and Slovenia, with a focus on analysing their administrative culture identified, and its relation with e-government implementation. The present section outlines: (1) how the interviews were selected and conducted; (2) which documents were used to triangulate the data; (3) the analysis of the interviews.

4.5.1. Interviews

In order to collect data, semi-structured interviews were conducted, where the individual respondent from each case country represents a "unit of analysis" (Yin, 2003, p.22). The interviews were conducted with one respondent at a time, employing both open-ended and closed-ended questions. This allowed the conversation to flow easily, mediated through the use of "how" and follow-up questions. The interviews were conducted in order to capture broader perceptions and insights from the respondents, who were selected according to a two-fold approach. Firstly, the interview sampling frame targeted the employees and civil servants of the Estonian or Slovenian public sector, as they presented the most direct channel to gather insights into the administrative culture in the public sector. The second criterion was to complement the data with the perspectives of academics and, in the case of Estonia, the experts from the E-governance Academy, which is a non-profit foundation advising the EU in its Digital Single Market but also countries around the world in matters of e-government. This approach proved particularly useful as it was much harder to get in contact

and find available respondents from the public sector. Over a period of three months, in total 102 invitations were sent, and out of these, only 29 responded, with 10 interviews having been arranged successfully, as highlighted in table 6. In order to find respondents, different channels were used, including e-mail, Embassy contact, Linkedin, as well as personal contacts. The final respondents were interviewed online, given the Covid-19 health restrictions. Moreover, by invitation of one of the interviewees, I had access to the virtual e-Governance academy Conference in Tallin, that took place on 18-20 May 2021. This was an additional source of information and further triangulation of data through its three-day line-up of speakers presenting speeches and expert opinions.

Respondent	Country	Background
Respondent 1	Estonia	Expert from the e-Governance Academy and worked in the creation of Estonian e-government strategy
Respondent 2	Estonia	Academic and lecturer on Information Science (IS)
Respondent 3	Estonia	Analyst for the public sector
Respondent 4	Estonia	Civil servant and responsible for e-government development i
Respondent 5	Slovenia	Civil servant and responsible for e-government in their ministry
Respondent 6	Slovenia	Academic in IS and e-government
Respondent 7	Slovenia	Academic in public administration
Respondent 8	Slovenia	Academic in public administration, collaborated on different projects in e-government with the public sector
Respondent 9	Slovenia	Academic in public administration, has published previously on e-government
Respondent 10	Slovenia	Academic and lectured on e-government

Table 4: Interview respondents for each country

The interview protocols and questions are shown in Appendix 1 and Appendix 2, differentiated for experts and public servants (which includes civil servants and public sector employees). Moreover, as part of the informed consent guidelines for ethical research, different steps were taken in order to ensure that the data privacy of the respondents (Boeije, 2014). Prior to participating in the research, clear information about the scope and aims of the research were provided, through the information sheet and consent form attached in Appendix 3. Each respondent was then invited to sign the consent form and during the interview a solicitation was further provided.

4.5.2. Documents

Moreover, through desk research different secondary sources were examined, including policy documents, national legislation (often with necessary online translation), and academic papers. The consultation of these sources were important to assess the norms and existent practices which might not have been underlined by the public administrators for professional etiquette, and to triangulate the opinions provided. In the case of professionalism, two surveys were consulted for Estonia (respectively from 2009 and 2018): the State Chancellery's survey on values and attitudes of Estonian civil service (Lagerspetz and Rikmann, 2009) and the Survey of Civil Servants and Employees (2018). The latter collects the results and views on civil service management practices, as part of a wider project with ten countries from Eastern Europe. The survey helps to gather further insight into the attitudes and behaviour of civil servants and employees, with 3522 responses from 53 institutions (Meyer-Sahling et al., 2018). Moreover, in order to assess the variables of normative culture and professionalism, the interview data was triangulated with the Public Service Act for Estonia and the Civil Service Code of Ethics for Slovenia.

4.5.3. Analysis and coding

In order to analyse the data from the interviews, each transcript from the interview was coded according to the coding scheme in Appendix 4. Following an automated transcription of the interview, I adopted the software ATLAS.ti to conduct the coding process, which was initially conducted by establishing the key pre-determined groups of codes I was interested in. This allowed me to systematically test my expectations through the qualitative data then encountered. A coding tree for each country was established, in order to separate the findings, together with a separate coding tree for comparison among the findings and general insights provided. In turn, each coding group was eventually re-grouped according to the thematic relevance and the new inductive findings added under "additional variables" or "additional dimension" for administrative culture.

Throughout the coding process, I adopted 'network' representations and reports from the software, allowing me to make connections between the codes and the subcodes. Once all transcripts were analysed and coded, the coding groups were revisited in light of the expectations and theoretical framework of the thesis. The inductive findings, on the other

hand, were grouped together and linked to either administrative culture dimensions or as separate variables affecting e-government implementation. Moreover, in order not to introduce biases, the initial coding was conducted in an attempt to remain as faithful as possible to the quotations identified, grouped according to the content relevance. While it ought to be realized that the researchers' normative position may inevitably appear, the process of keeping a description and clarification behind the choices of selection and coding, allows one to identify later on possible interferences in the consistency.

4.6.   Reliability and Validity

This section considers the overall reliability and validity of the present research, presenting considerations of internal and external validity on one hand, and considerations of reliability on the other. At a general level, small-N case studies are usually associated with a high level of internal validity in comparison to large-N studies, as they allow for a more in-depth specification of "difficult-to-observe cognitive aspects of individual actors" (Blatter & Haverland, 2012, p.20). In the case of this thesis, this appears to be particularly true, given the lack of research on administrative culture, which required a definition of the variable's dimensions and the analysis of more intangible characteristics using interviews and context-sensitive operationalization. Indeed, the concept of internal validity refers to the "cogency" of the study, so whether the researcher has measured the effect they intended to study (Van Thiel, 2014, p. 49). A first mean to achieve this is through the operationalization of the concepts the researcher is interested in through a comprehensive theoretical framework that circumscribes the variables appropriately, as done in the present research. However, while the internal validity of the present study is to be considered high, the external validity of the present study, as mentioned in Section 4.1., can be seen as limited. In this case, the current endeavour serves the goal of "probing" the validity of my argument about the specific effect of administrative culture on e-government, which has not been researched before in Europe (Blatter & Haverland, p.230).

Lastly, the reliability of one's research is associated largely to whether the findings are accurate and can be replicable. In order to do so, clear and consistent steps are necessary for the data collection. A first step for my research was to triangulate the interviews with documents and policy indices, which is important because respondents may give socially desirable answers or provide unreliable information, which can be cross-checked by gaining

information from different sources (Van Thiel, 2014). To maintain reliability, the same interview protocol was prepared for experts on one hand and between the public administrators on the other, with some formulation differences ("your organization" was replaced with "in the public sector", for the questions to the experts). Despite the use of a structured protocol and prepared probe questions, the open structure of the semi-structured interviews and the different backgrounds of the respondents meant that it was not always possible to ask identical questions among all respondents. The concepts have however been systematically operationalized and coded, which helps to make the interview process transparent also for other researchers to evaluate.

Chapter 5: Analysis and findings

This chapter presents the findings derived from the interviews and the brief document analysis. The findings of the qualitative analysis will be presented in a structured manner, first discussing in section 5.1. the concept and findings for e-government implementation for Estonia and Slovenia and how they first approached it since their post-communist transition. Following this discussion, section 5.2. focuses on the effect of administrative culture on e-government, where the analysis for each respective country is structured in two parts: first, presenting the background information findings for the control variables, and secondly, the influence of each administrative culture dimension on e-government implementation.

5.1.　　E-government implementation

Estonia and Slovenia have been selected for this comparative case study. The e-government implementation values originally presented for comparing the two countries were extracted from the Online Services Index (OSI) and Network Readiness Index. The comparison for the values of the OSI for the two countries is shown in Figure 3, starting from 2003. The first observation is that Estonia has consistently ranked higher than Slovenia since 2003. Moreover, Estonia is the second highest ranking country for e-government implementation and Government Usage in Europe in 2020. The 2020 e-government Benchmark study by the European Commission also ranks Estonia as second in Europe, with a score of 92% in overall performance, with the European Average being at 62% (EC, 2020b). Slovenia, on the other hand, has been ranked just above the regional European average (shown in the dotted line), and its value for the OSI has grown especially since 2016. The findings of the European Commission's benchmark study show that Slovenia has an average digitization rate and is ranked among the countries with an unconsolidated e-government (such as Slovakia, Poland, Hungary, Italy, and Bulgaria). While the findings across global e-government benchmarks place Slovenia at a higher level of e-government implementation, comparatively to the European and CEE region, the country may be considered growing at a slower pace than Estonia.
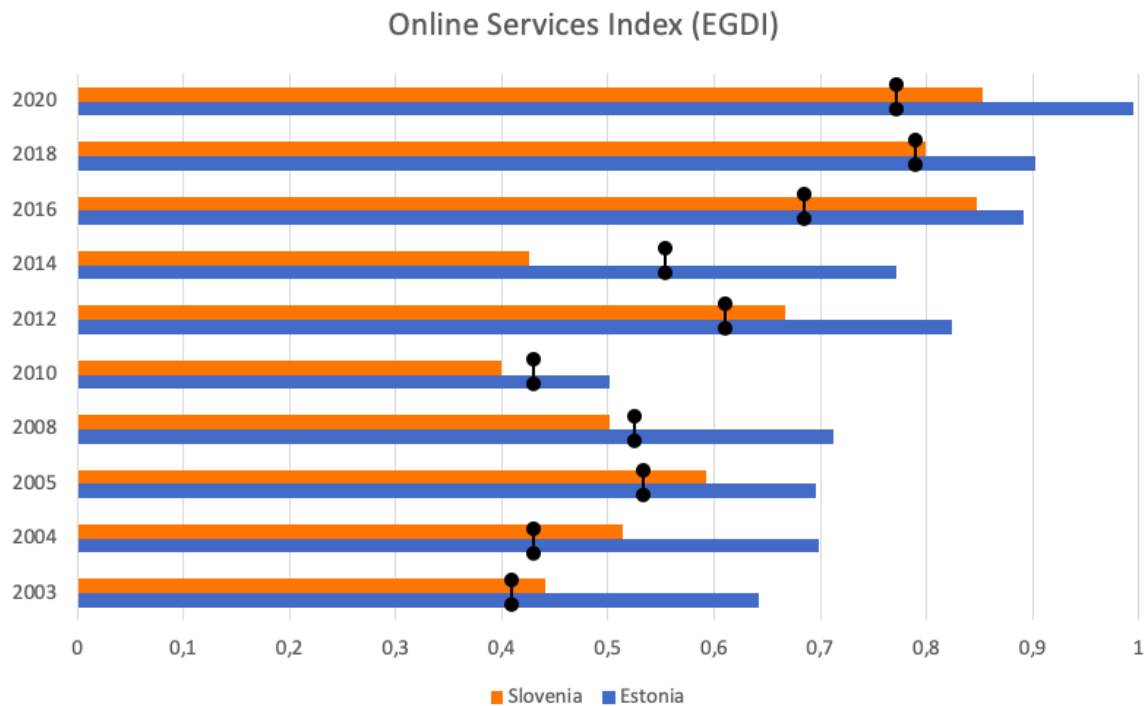
Figure 3: OSI for Estonia and Slovenia from 2003 to 2020

As specified in the literature review, however, in order to evaluate the level of e-government implementation it useful to complement the data with insights from experts of the field, together with an assessment of the e-government maturity. Therefore, the next section presents the findings for e-government implementation in each country, presenting the level of e-government maturity, and then secondly by reconstructing their transition to e-government.

5.1.1. Estonia

The opening questions of the interviews were aimed at uncovering the views of the respondents on how they perceive e-government in their own country, with a focus on their perspective on the first transition to e-government. Following the first question on the usefulness of an institutional lens to study e-government, one expert's quote emerged:

> **R2**: **"***In the Estonian case, I think first when you think of the build-up of E-government infrastructure and the E-government changes in Estonia in 1990s, then definitely the the culture was definitely very crucial in a sense that, the e-government was built up in a decentralized manner. You never had a centralized agency pushing through the reform. It was very inter-personal, made up of a group of a technical elite that was trained during the soviet time, and was given very much a lot of policy space from the prime minister. So yes I would agree that here the institutional context really played a role. They had room for manoeuvre"*.

This view confirms the expected role of institutional explanations in understanding e-government implementation, particularly following the post-communist transition at the end of the 1990s. An interesting element that emerges is the idea that a technical elite existed, following which prioritization to IT was given, and where knowledge sharing occurred in an "*inter-personal*" manner (R1). In 1993, the Department of State Information Systems was established as the key IT government agency, which would supersede the IT plans and expenditure for all other government agencies. Related to this, it is useful to look at the answer given to the same question by another expert, who belonged to that technical elite in post-communist Estonia. Indeed Respondent 1 (R1) worked as a technology expert for many years in the public sector, and was at the forefront of building the first strategy for Estonian e-government. The following quotes provides further insight on the transition:

> **R1:** *"I remember in 1993, we working quite a lot about technology at first strategy document. Then later on in 1998, we got the Information Society policy document, which was very much about society and not at all about technology".*

Respondent 1 describes the environment in which e-government originally developed in Estonia, where they did not inherit previous legacy systems, except for "*the people with the knowledge*". In particular, the respondent emphasized how the IT and technology development never proved to be a challenge, the real work and understanding had to be placed in the governance aspects. In that regard, R1 later mentioned that when building the e-government implementation strategy, the focus had to be on coordination, while at the same time there were less legal restrictions and less constraints shaping the attitudes and norms of the administrators.

E-government maturity.
Beyond the index measures, the e-government implementation maturity for Estonia can be further evaluated through the interview findings and additional sources. R1 underlines how, with the work of the e-Governance Academy, often the e-service and portal models are exported as recommendations to other countries, and the European Commission has also taken Estonia as a model for e-government implementation. An EC (2016) article underlines how "over the past 10 years, Estonia has been one of the world's leaders in the use of Internet-based services for its citizens" and where "almost every aspect of life in Estonia is covered by an e-Service". Beyond this, the interview findings characterize e-government

implementation as highly developed and orientated towards full automation. R2 states that "*automation is almost the only key ambition, as the rest is already highly developed*". Largely, following the four-stage maturity model from Appendix 5, Estonian e-government implementation can be considered belonging to the Transformational categorization. The use of sandbox solutions, with extensive collaborations between public and private, but also academia and non-profit organizations such as the academy, allow to characterise the Capacity of Capacity Developers stage as Transformative. The e-government applications already included e-ID and digital services in 2002, whilst e-voting was implemented in 2003. Since then, Estonian e-government has progressed to an almost complete digitizatio of the public sector, as today 99% of public services have beome e-services (E-Estonia, 2021). In terms of systems thinking and data management, Estonian e-government can also be characterised as Transformative, given the strong single government website (www.eeesti.it), the use of a fully integrated public service delivery, and the once-only data principle has been implemented since 2008, where also health data was managed through a central database (R2, R4).

5.1.2. Slovenia

The coordination of e-government implementation in Slovenia has not taken a linear trajectory. In particular, R10 mentioned that the initial period of post-communist transition allowed for a special governmental agency for informatization to be set in place, in 1993. This was "placed directly under the office of the Prime Minister, at a high position, and all activities related to informatization of the public sector were coordinated centrally" (R10). Indeed, also two other respondents stated that between 1993 and 2004 the processes of e-government were mainly centralized, and according to R10 this coincided with Slovenia progressing "extremely well" with e-government implementation, stating that "*we were among the best prepared countries in Europe for a later on implementation of e-government, because in order to be successful with implementation you need to have well digitized structures*". R9 mentions: "*in Slovenia I would say we were ahead of Estonia around the year 2000. But then the services didn't catch up with that*". However, in 2004 such a centralized agency for informatization was abandoned and, as underlined by three other respondents, from 2005 a process of decentralization of all government took place, including the digitization of public services (R10, R9, R8).

Moreover, a third phase of coordination can be identified in Slovenia, where there was a return to centralization (R9, R5). This third phase was not deemed successful, as both R9 and R5 from the public sector underline that a more effective system of coordination for e-government implementation is needed, through greater centralization mechanisms. The processes relating to the expertise of the administration remained fragmented and at a more decentralized level. Therefore, overall the coordination of e-government implementation occurred in a hybrid manner, of which the respondents underline that a move to centralization is beneficial, when also the expertise and closer monitoring is implemented, in order to have a more unified e-government strategy.

E-government maturity

The respondents provided different levels of detail in regards to how they perceive the e-government implementation in their own country. The view of R9 is that digitization is very present in different strategies, but it is "*not really implemented on a good enough level for citizens to take up services on their own".* In regards to the quality of e-government implementation, R6 who lectures in the field of administration, mentioned that:

> **R6:** *"So, my view is that this is really more the beginning of the e-government implementation. When we talked about involving other citizens in the e-government, we don't have a lot of that."*

In order to understand the level of e-government maturity, the four-stage model (found in Appendix 5) can be used. Indeed, at the Legal and Organizational set-up level, the e-government can be classified as "Transactional". In particular, the regulators act as watchdogs and while the legal authentication of citizen Id is present, there is a lack of exploration of regulatory sandboxes to explore emergent technologies (R9). In terms of organizational set-up, the e-government coordination has recently been brought back under the coordination of the Ministry of Public Administration, while for many years it was decentralized. The turn to such a centralization, however, occurred with a lack of incentives for creating an environment of continuous learning and operational agility in a uniform way. Moreover, the following respondent provided additional insight in that regard:

> **R8:** *"Our e-government implementation is much more technology determined, you know? So oriented into technology instead of an organizational point of view on E government".*

Therefore, a transaction data-based culture can be identified within the "Data Management" aspect of the maturity model, as the respondent mentions that the re-engineering of business processes is still missing. The E-Uprava portal is the most important portal for e-government services in Slovenia, and was established in 2001, with very few services being provided. In 2006, this was in turn re-structured, and in 2015 a second restructuring took place, allowing for sub-portals in Hungarian and Italian, according to the national minorities present. Moreover, the E-Uprava portal mainly focuses on the government to citizen services, together with e-democracy: "*you can also send your opinion regarding the legislation*" (R5).

The Systems thinking and integration of the services varies according to the organization and, as repeatedly underlined by respondent 5 there is a lack of a coordinated mechanism for the portals. Indeed, as underlined in Appendix 5, the Following the 4-stage maturity model of Appendix 5, the type of Systems Thinking described belongs largely to a "Transactional" type of e-government, as there is still a lack of integration for e-services into a single government website. Another element, underlined by three respondents (R5, R9, R8), is that the physical administrative units are still largely preferred to online units. On the citizen side, the R10 mentions that *"Basically people don't have enough interest or not good enough reasons to go online just for doing a service like taxation once a year"*. Therefore, what can be related to the public administration, is that the services offered are largely customer-oriented, as one would describe using NPM language, however, there is a reluctance to take-up so digitized services, as citizens have been accustomed to physical ones.

5.2. The effect of administrative culture on e-government implementation

This section delves into the findings for the control variables and the independent variable, in order to evaluate the effect of administrative culture on e-government implementation. The findings are presented thematically for each country, first by presenting the control variables and then through the findings for each of the four dimensions of administrative culture: bureaucratic culture, normative culture, professionalism, and shared attitudes and vision.

5.2.1. Estonia

5.2.1.1. <u>Background information: control variables</u>

Following the control variables operationalized in chapter 4, the level of ICT infrastructure maturity in Estonia can be considered very strong. Since 2013, the level of internet penetration increased from 80% to 89.06% in 2020 with a population age of 16-75 (ITU, 2020). Through the findings of the interviews and the analysis of newspaper articles and Estonian e-Governance Academy papers that were shared through private access, the extent and quality of Estonian Technology Infrastructure goes well beyond the expected level, and the operationalization through internet penetration may not reflect comprehensively the degree of IT infrastructure present (E-Governance Academy, 2021; E-Estonia, 2021; Schulze, 2019). Indeed, Estonia is considered around the world as a "high-tech digital society", where 99% of Estonian public services are available on line (Schulze, 2019). A large extent of this success is also associated to its digital infrastructure, which however faced a big cyber-attack in 2007, and continues daily to face cyber threats. This forced the Estonian government to strengthen its cyber-security defense, also due to the high integration of web-based tools in most aspects of private and public operations. One particular factor behind the sophisticated level of e-services is the creation of *X-road,* which is a software-based Data Exchange Layer, a sophisticated solution that is "invisible but crucial", and allows the country's public and private sector to exchange data through encrypted and secure transfers, connecting large information systems at the same time (E-Estonia, 2021). Created in 2001, the idea of the X-Road is the "backbone" of e-Estonia and transition to online public services (E-estonia, 2021). On the other hand, Estonia became independent from the Soviet Union in 1991, following which it joined the EU in 2004. As summarized in Appendix 6, its GDP grew progressively since joining the EU, and in 2020 the GDP per capita was of 38,359. There exists extensive legislation

surrounding e-government which, while the later sections describe the administrative culture as being bureaucracy-averse, the strong drive of the Estonian government to "re-brand" the nation as a "IT country" (R9), is shown from the first draft of the "Principles of Estonian Information Policy" in 1994 (E-Estonia, n.d.). Yet, to date, there is no digital government-specific legislation in Estonia, but mainly legislation surrounding the key enablers: E-ID (electronic identification); the Access to Public Information Act (Official Gazette of the Republic of Slovenia No. 51/2006 and 23/14); Security-related legislation (Personal Data Protection Act and Information security Act); The legislation for all Interconnected base registries (therefore all public registries); Specific legislation for Interoperability, among which stands out the once-only principle or the "prohibition of duplicate data", where the user inputs the data only once in a public registry and this will be used for future services (EC, 2019, pp.10-14).

5.2.1.2. <u>**Administrative culture: dimensions**</u>

Crucial to the endeavours of this thesis is understanding the nature of the administrative culture for each respective country, in order to identify possible co-variation with the e-government implementation levels across the cases. This section explains the findings for the deductive hypothesis-testing of the key dimensions.

(1) Bureaucratic culture

The use of interviews with respondents from the public sector and academics allowed to clearly define the nature of bureaucratic culture in Estonia from an "insider" perspective,. It In this case, the respondents quite promptly gave a precise answer when asked to either describe the bureaucratic culture or the orientation of public administrators towards bureaucracy. For example, respondent 3 from the public sector stated:

> **R3:** *"At least in my experience, we're not so bureaucratic. So if we have to do something, then the goal is most important. And if we have to deliver the results, then it has to be planned because at the end what's important is that we can make a check that we have done this. But we're trying to avoid this bureaucratic approach"*.

More precisely, when asked to describe the orientation of public administrators, the four respondents identified that the public sector is heavily results oriented, and less bureaucratic. This means that in order to deliver certain goals, there does not have to be a strict adherence to existing rules and following a specific codebook (R4, R5).

There appears to be a less rules-oriented bureaucratic culture in Estonia, which is tied instead to the effort at delivering results, in a flexible and open way. Respondent 4 particularly emphasise that "*it's very important also in the government who leads this process, whether the organization is by nature more dynamic, more innovative? Or is it an organization that by nature is very bureaucratic, structured, rule oriented and very kind of stiff*"? The antithesis of considering an organization as dynamic and innovative, against more bureaucratic, suggested by the respondent, adequately reflects the expectations of this thesis. In the case of Estonia, the Ministry of Economic Affairs is the key ministry responsible for the strategic and implementation aspects of e-government (R5).

An additional dimension describing the bureaucratic culture is the tendency for the employees to adopt the language of the private sector (R2, R4). This is additionally tied to a more dynamic environment, where increasingly there is turnover between the public administrators, who often rotate between the public and private sectors. This can be considered largely in opposition to the traditional Weberian model of the bureaucrat, who tends to stick to the same position once entered the public sector. Moreover, Respondent 1 describes the Estonian public sector as adhering to a network type of bureaucracy: "*it's not obvious that it is hierarchical bureaucracy, but it is always more becoming like a network type of bureaucracy. This means that rules are always changing*".

This insight allowed me to distinguish between a hierarchical bureaucracy, with instead a network type of bureaucracy, which is a dualism matching the categorization of bureaucratic culture as formulated in this thesis. Of additional relevance for this thesis, the respondent mentions that increasingly, in Estonia new legislation is created, particularly with "*new European Legislation*" (R1).

While Estonia is not characterized by excessive bureaucratic culture, two respondents from the public sector emphasized that while they seek to reduce too much bureaucratic culture, bureaucracy itself is important, as underlined in the theoretical framework by Nurdin et al. (2010). Respondent 1 underlines that "*increasingly it seems that the bureaucratic procedures are growing, especially with the new European legislation*".As the tendency is to increase monitoring and hence increasing bureaucratic procedures, an important point that both Respondent 1 and Respondent 4 underlined is that bureaucracy in itself is not the problem, it is actually necessary: "*In that sense, bureaucracy is needed but you ought to be careful about making everything bureaucratic" (*R4)*.

The key point underlined, is whether the *bureaucratization* of procedures becomes excessive, it can then be associated to less innovative practices, while an open environment is associated to a more dynamic and efficient implementation of e-government.

(2) Normative culture

The normative culture at an organizational level in Estonia can be generally identified as incentivizing in-service training. When asked about the availability of training, respondent 3 underlined according to their experience:

> **R3:** "*There are good possibilities for both, to have training at the workplace they're paying for, or paying for education. We have something like a couple of €1000 per year to just to spend for some kind of training, whatever it is. And so yeah, so I think the state has understood that it's important to develop the employment and employees also. The smarter the employees the better the work.*"

In Estonia there are two key institutes for Public Administration training: the Estonian Academy of Security Sciences and the Centre for Public Service Training and Development (ATAK). However, similarly to the general public sector structure, also the training system can be considered relatively decentralized. This means that the quality and weight of the trainings depends on the individual government organization. The State Chancellery in fact does not have legislative authority over other ministries or public institutions.

The role of normative culture can be additionally seen in the creation of the e-Governance Academy in 2002, in a joint project of the Government of Estonia, the United Nations Development Programme and the Open Society Institute (E-Governance Academy, 2018). This foundation works today with over 132 countries, but also provides assistance to the public sector and civil society across the world, in implementation of e-government technical solutions (E-Governance Academy, 2018). The existence of an Estonian academy specialized in e-government training and consultancy, contributes to the technical expertise of policy planning, but also to the normative culture within internal ministries, as civil servants and the policy-makers have easy access to specialized expertise in the field of e-government.

Moreover, at a national level, respondent 3 underlines that "*Estonia is very good at lifelong learning culture*" and that *"It is very common for Estonians to continue with learning with extra courses and extra training, so constant training as a common mentality".*

In relation to this, in 2019 there were approximately 27,000 civil servants employed in Estonia, accounting for 4.7% of all employment in the country (The Baltic Course, 2020). Therefore, the single public official may take on the tasks of what would normally be assigned to an entire department. For this reason, training is important at an organizational level, and the public administration training courses are deemed thorough, as its public servants hold multiple responsibilities at a time. Also Respondent 3 underlines the heavy training workload

taken in their personal experience visiting an OECD training, which bigger countries had an entire team attending:

> **R3:** *"So in Estonia's case I'm usually alone doing all these kind of things and also looking through the papers and everything and the workload is huge, but on the other hand I'm quite free. I don't have to, uh, ask permission from my supervisor, from some kind of higher level about what I can say or what I can do".*

Therefore, Estonia has extensive resources available with which to access training opportunities for keeping up-to-date with the fast paced changes in technology, and at the same time its public sector is also characterized by a normative culture favourable to adopting such training, both as part of organizational and national incentives. The wide availability of trainings, together with the de-centralized approach, places at the organizational level a particular weight in developing the lacking competencies, particularly the technical ones.

(3) *Professionalism*

Professionalism refers to the respect of the rule of law and to the ethical and impartial attitudes of the civil servants and public sector employee. Since the Public Service Act (PSA) came into force in 1996, the Estonian public service is largely decentralized and the civil service system can be considered an open, position-based system (Palidauskaite et al. 2010). Such a characterization of the civil service system as "open" is not usually associated to a common public service ethos, as it is not centrally defined by a common legislation or framework. Estonia was the first in the CEE region to adopt the Public Service Code of Ethics (in 1999) as part of the PSA, and in 2015 it adopted the Code of Ethics for Officials, specifically for civil servants. The document established the key values expected: lawfulness, focus on people, professionalism, and openness and cooperation. The Code of Ethics for Officials, while it provides abstract principles for public service behaviour, it is not legally binding, and therefore it may be applied in different ways, just as the Civil Service Code of Ethics does not present legal sanctions or responsibility attached (GRECO, 2018; Palidauskaite, 2003). Professionalism in Estonia is defined in the document as whether the official acts in accordance to the expected knowledge and skills of their field of work, but also whether the official is innovative and keeps him/herself informed about the relevant field. The open system, therefore, allows for more easy exchange and favours the development of an innovative administrative culture. However, open systems can be associated to issues of

political capture and bias of career recruitment and development, precisely because the public servants have a more flexible application of the Ethics Code (Palidauskaite et al. 2010). In this regard, R3 states:

> "In Estonia we don't have this old relationships and like kind of family culture. When recruiting with interviews and all processes are made so that there is not any kind of you know corruption. If you're not good enough, then you'll be kicked out, so you will have always have to develop yourself, and have to move forward, and I think this keeps in quite good shape the public sector".

On the other hand, in Estonian civil service, there tends to be higher moral demands on civil servants. Indeed, the weaker presence of a rule-oriented bureaucracy is seen to co-exist with higher perceived moral responsibility by the civil servants. Two surveys are relevant in order to look at the evolution of ethical requirements over time: the State Chancellery's survey on values and attitudes of Estonian civil service (Lagerspetz and Rikmann, 2009) and the more recent Survey of Civil Servants and Employees (Meyer-Sahling et al., 2018). The first reveals that the common conception among the respondents is that civil service can be seen as a vocation, which ought to be self-regulated and which has the responsibility to serve and guide the citizens . On the other hand, following the Survey of Civil Servants and Employees, the public servants are largely willing to bend the rules in their work, as less than 5% would *not* bend rules under four circumstances. The highest propensity to bend rules occurs when the public servant has to get "things done" (Meyer-Sahling et al., 2018).

(4) Shared attitudes and vision

While a lack of a strong bureaucratic culture can be identified in Estonia, the role of shared attitudes and vision becomes important in creating a collective environment that is incentivized to adopt e-government applications in Estonia. This particular dimension can be seen as reflecting the sociological institutionalist perspectives, where the cultural environment may shape a specific policy outcome. In this regard, Respondent 4 mentions the following:

> "Yes, there are legislative restrictions and agreements that we've made, but I think quite often the spoken agreements and knowledge, kind of came first and the law came after. For example, now the once only principle. Now we are only asking a person for their personal data once and we are not allowed basically to ask it again. I think a general mentality was there way before it actually was agreed legislatively".

The respondent underlines how the "spoken agreements and knowledge" usually are formed prior to a law being implemented, and actually the general understanding of how things should be done anticipates the law, which is then modelled on that practical know-how.

All Estonian respondents provided insight into the shared attitudes and beliefs of the public sector, which can be characterised as being open to innovation, with less resistance to change on the side of the employees. This can be seen in the following quotes from respondents when asked about whether they encounter resistance to change:

> *R1:* " *I think that in Estonia we don't have big change resistance, also talking to public sector employees, we got some feedback that maybe some people are losing their jobs, but when this happens it's common that there are trainings for other topics".*

> *R3:* "I haven't experienced that. Usually they're all quite open for new things and of course it doesn't go smoothly all the time, but some people can't learn new things and maybe there's someone ranked higher politically who has some other interests".*

> *R4:* " *I worked in public sector through over 10 years and I've yet to see that kind of a public sector employee [Referring to resistance to change among employees]. Maybe it's the luxury of the teams that I've been in and the organizations I've been in. I've been in three different public sector organizations and in my opinion everybody is very driven to get success stories.*

Moreover, two respondents mention the idea that in Estonian public sector the employees are very much "success story" driven and adopt very much a private sector-like mentality of optimization and efficiency (R4, R2).

5.2.2. Slovenia

5.2.2.1. <u>Background information: control variables</u>

The first control variable to be considered is ICT infrastrucure, operationalized through internet penetration, which in Slovenia can be considered quite strong. Since the year 2000, internet penetration was already established in Slovenia, which was one of the driving reasons, according to Respondent 8, that "*the Slovenian Government realized that there is a potential in online presence*". Since 2013, the level of internet penetration increased from 72% to 83% in 2019, with a population age of 16-74 (ITU, 2020). For example, the main Slovenian e-government portal E-Uprava was rebuilt in 2018, following the experts of user experience and copywriters, in order to implement the services in a "user-friendly way" and using for example mobile applications. The higher quality of infrastructure can be partially explained by the role of the Government Center for Informatics (GCI) which was established in Estonia. This was established in the initial post-communist reconstruction, when Slovenia became independent and according to Respondent 5: "*The [GCI] back then I think had a very important role in terms of establishing the core infrastructure required for any electronic business within public administration*". The respondent further describes how "this government center for informatics was a good institution that really made sure that the core infrastructure was set" (R5).

Moreover, in regards to the other control variables, following the Slovenian independence in 1991, the country became part of the EU in 2004, and since then its GDP has seen a progressive rise. At the same time, also the level of E-government specific level grew increasingly, to such an extent that five of the respondents argued that there is excessive regulation in the field. These elements are summarized in Appendix 6.

5.2.2.2. <u>Administrative culture: dimensions</u>

(1) Bureaucratic culture

The questions relating to administrative culture in Slovenia were quickly redirected to the nature of the bureaucracy in the public sector, as all six respondents described the administrative culture as being bureaucratic-oriented. In particular, the following quotes present the point of view from each respondent:

R5: "*This is often a problem, because we have legislation, we have a code, but people can be so narrow some times. This is not just my opinion, I believe we are too bureaucratized*".

R6: "*Slovenia is definitely more bureaucratic oriented*".

R7: "*I think we have too much bureaucratization still despite the fact that there was a lot of efforts put to change this and to overcome some difficulties in that field*".

R8: "*I think in Slovenia it's very bureaucratic. Well, it's most similar to Weberian model. All the statistics in Slovenia reveal how since, counting the last 20 years, the number of rules increased all the time, which I believe is one of the determinants of this bureaucratic administrative model*".

R9: "*I think that we have so much rules and so much regulation and everything is so strict because I would see the level of responsibility for a public employee I would say is not really wanted.*

R10: "*I would say that our administrative culture is pointedly bureaucratic, and this we kind of took from the German administrative culture. Sometimes even too much bureaucratic, too many regulations and laws which makes from a certain point on makes the whole system less efficient*".

An additional element which emerged from the interviews was that two respondents described the Slovenian administrative culture as Weberian (R8, R10). Respondent 9, emphasized that there is not much turnover among the employees, a characteristic of Weberian culture, and Respondent 10 stated that the administrative culture can be best described as having strong roots in German administrative culture. While the comparison to a more bureaucratized, and Weberian administrative culture can be made, the views of the respondents would tend to characterized a more layered form of administrative culture, where some aspects of New Public Management have been integrated, but they "*never fully became part of our public administration*" (R8). For example there is a system of rewards and "*motivation programs*" (R8), but according to R6, Slovenian public administration is still "*at the basics of this innovative thinking*".

(2) Normative culture

The findings for the normative culture underline the availability of training resources among public servants, but also among the elderly citizens through civil society, as underlined by Respondent 5, who is responsible for conducting such trainings with citizens. R5 mentions the existence of a Public Administration Academy, which "*in* the *last 2-3 years they developed really good programs for civil servants and courses about good governance, being open minded, how to work in groups, how to prepare presentations and how to speak with users*".

While the Public Administration Academy existed for more than 10 years, R9 underlines that for years this was oriented towards law and regulation activities, and only recently turned to innovation and technical skills. In this regard, R9 mentions that "*young people are willing to educate themselves, improve themselves, and they often participate in these workshops*". Therefore, when investigating whether the culture can be deemed innovation-oriented, two respondents underline the importance of creating a favourable environment for developing the technical competencies and innovative orientation among the civil servants. In order to do this, Respondent 5 underlines that "*sometimes we forget getting the middle management on our side in IT training*". This entails, according to respondent 5, the involvement of the top and middle managers: "*You need to have a transversal development of the skills and the culture. If the higher levels are not open systems, this impacts the delivery at all levels*". Respondent 10 underlines that what drives an innovation-oriented administrative culture, is also the "*political trends and political pressure*", which is important in setting the agenda for the administrators, whether IT skills and IT development becomes an actual priority.

(3) Professionalism

The highly bureaucratic culture can also be associated to a high adherence to the rule of law in Slovenia. Evaluating the professionalism among the respondents revealed that indeed the results perceived the public servants to be strictly following the legal regulation and, according to R10: "they prefer not being risk taking". The public administration is oriented towards the satisfaction of the citizens, "*but sometimes they fear of doing something wrong. They really go strict to the word of the law*" (R9). Respondent 9 further elaborates on this: "*It's really hard to do something you know outside the written rules and I think that sometimes they are even afraid of doing something outside the written rules because of the penalties or losing their job*". Respondent 5 from the public sector confirms that their departmental goal is to meet the citizens' needs. The perceived strong adherence to the rule of law, is coupled on the other hand with coded administrative procedure rules, which can be found in the Administrative Procedure Act, which Respondent 9 defines in the following way:

> **R9:**"*It's something that's really often we rely to, but I think it's sometimes more of a burden than having a positive instant impact. Because suddenly people start to think about everything has to be done according to the general Administrative Procedure Act, even when it's not even needed*".

In turn, the norms and ethical principles stated in the official provisions in Slovenia underline the idea of legality, responsibility, professionalism, efficiency and user-orientation (Republic of Slovenia; Nedelko & Potocan, 2013). Three key regulations govern public administration: the Civil Servants Act, Public Administration Act, and General Administrative Procedure Act, where some of the principles are legal protection legality, respect of human dignity, equality, responsibility and judicial control. As underlined by Respondent 9, these Acts strictly define the dos and don'ts of public administrators but also public sector employees, for example at university level. Moreover, the adherence to regulations is coupled with a generally perceived risk-aversion from the public servants, on which R10 mentions:

> "The important thing is to follow the rules as much as possible, sometimes or even too much. While if they were to go for better efficiency for better results, it means that in certain decisions they would have to decide by themselves and take their own decisions, which is of course very often risky".

Therefore, professionalism among the public sector in Slovenia is characterized by a strongly rule-abiding but less risk-taking attitude, which is radically different from the Estonian conception of professionalism, which puts citizens and efficiency first, but with a greater willingness to bend the rules.

(4) Shared attitudes and vision

The shared attitudes and vision of the Slovenian public sector are generally perceived by the respondents as customer-oriented, yet highly dependent on the regulations implemented. In turn, the degree and openness to innovation varies according to the age of the public servants, where younger generations are deemed to be more favourable to adopt a vision that is open to change and innovation. R7 states in this regard: *"I think that because of the rules that are now in Slovenia, I really think that this level of shared values is very low. Only more recently there are more activities of team building and shared knowledge among levels".* The respondent generally describes the administrative culture in Slovenia as more hierarchical, also because the public sector is still more decentralized. Respondent 10 ties this partly to the influence of German administrative culture, which despite the communist rule, survived in the form of a "pointedly bureaucratic" administrative culture, according to R10, "*Sometimes even too much bureaucratic, too many regulations which at a certain point makes the whole system less efficient*". Respondent 7, on the other hand, underlines that the type of shared attitudes and orientation towards innovative approaches really depends on the age:

"*Usually I think that younger [people] are working to innovate, but not the newcomers in the public administration. The older [people] I would say that are more keen to strict procedures*". Part of this may be related to the policy of non-replacement of civil servants, between 2010-2015, where the average age of civil servants is higher. This has been identified by the report from the EC (2018) to reduce the administrative capacity of the aged civil service to use new technologies, as there is a generational gap of habits and technical knowledge. In turn, also respondent 9 mentions that the role of innovation-oriented attitudes and openness to change depends on the age of the employees, but also the location of the administrative district. Respondent 9 underlines that in the capital, where there is a higher demand for efficient and fast services, changes are seen positively, "*because they need to be more efficient with the number of employees they have*".

5.3.   Conclusion

This chapter presented the findings for, firstly, the level of e-government implementation in Estonia and Slovenia. Section 5.1 presents clearly that Estonia has a higher e-government implementation from Estonia, both presented through the indices, and also through an through the four-staged maturity level, through which Estonian e-government can be classified as Transformative. On the other hand, Slovenian e-government implementation can be deemed belonging to the Transactional phase, even though its incorporation of e-democracy would classify it as Connected, following the model in Appendix 5.

Secondly, section 5.2 presents the findings for the control variables and the four dimensions of administrative culture for each country. The interviews, triangulated with document analysis, showed that bureaucratic culture, normative culture and shared attitudes were relevant for explaining e-government implementation in Estonia and Slovenia. Most respondents (R1, R2, R3, R4, R5, R6, R8, R9) emphasized the importance of departing from technological explanations, and underline that organizational and institutional factors such as administrative culture are relevant to explain e-government implementation. However, administrative culture was not the only relevant factor influencing e-government. In particular, R10 and R7 emphasized the role of political will, which influences at a national level the prioritization of e-government implementation.

Chapter 6: Discussion of Findings

Having presented the analysis for this thesis, this chapter will discuss the findings and reflect on their connections with the formulated hypotheses, together with the relevance of the literature. The findings are presented thematically, reflecting the analysis, first for the control variables (6.1) and then for the independent variable of administrative culture (6.2). The overall implications of the research are then drawn.

6.1. Control Variables

Identifying the control variables for the analysis is a crucial step for co-variational analysis, following Blatter & Haverland (2012). To this end, I identified GDP, Communist Past, ICT infrastructure, IT-specific legislation and the year of accession to the EU as relevant control variables. From their comparison, it emerges that Estonia and Slovenia have a similar GDP, and have had a similar level for the past four years, and they share a communist past and the same year of accession to the EU. In terms of IT-specific legislation, while it is very hard for two countries to share a similar level of IT-specific legislation, the comparison of the two shows that in both countries there is a medium-high level of IT-specific legislation, with Estonia regulating more closely the emerging technology and inter-operability, whilst Slovenia regulates e-government specific legislation. While Estonia is not typically prone towards bureaucratic practices, the IT sector has presented increasing regulations in the past years, as highlighted by interview respondents (R1, R3, 34). The level of ICT infrastructure, on the other hand, cannot be deemed to be very similar. In that regard, while Slovenia has had a developed technology infrastructure, and the internet penetration is high, through the interviews and the analysis of documents and exchange with policy experts at the e-Governance Conference, it emerges that Estonia has a highly developed infrastructure, among the highest in Europe. Partially due to the strong policy emphasis and orientation of the political will to making Estonia an "IT country", the level of ICT Infrastructure and maturity has been cultivated and over the years prioritized in the public sector, as seen through the construction of the sophisticated system of X-road. This level of ICT Infrastructure and informatization has not been reached yet by Slovenia which, while it can be described as being extensively informatized, it cannot be equated to the Estonian case.

6.2. Administrative culture

The findings for the dimensions of administrative culture show that a distinct administrative culture can be identified in Slovenia and Estonia. The Estonian bureaucratic culture is results-oriented, where administrators prefer to avoid being too bureaucratic. Slovenia, on the other hand, has a distinctively highly bureaucratic culture, which is one of the findings on which all 6 respondents shared the same point of view. The key point underlined by an Estonian respondent is that their bureaucracy is increasing, as new data protection requirements are in place. In relation to e-government, it appears that in a country with less bureaucratic culture, a network-type and innovation oriented approach may be associated to a higher level of e-government. An element related to this, is that policy-makers in Estonia are actively trying to avoid that increased bureaucracy makes the public sector *bureaucratic* in its culture*.*

Additionally, the normative culture underlines that in Estonia there is a large availability of in-service training. Estonia's experience has shown that, while it may not have strict formal structures and central controls for a competent public service, the reliance on training and the weight on the ethical responsibility of each civil servants, helps to create a normative and professional culture which is results-oriented and competent. In Estonia, the presence of results-oriented and innovative attitudes among the employees and civil servants, favours an environment that works to create innovative solutions and employ the e-services. This means that the personnel does not face resistance to change, and may, on the other hand, employ and make use of the trainings to face the fear of job turnover with new Technologies.

In Slovenia, the normative culture also incentivizes training, as the Public Administration Academy has been established as part of the Ministry of Public Administration. There is, however, not a transversal development of skills, where respondents emphasized that more has to be done with the training of the middle and top level management positions. This has been partially associated to an issue of generational gap, as in the years 2010-2015 there was a lack of replacement of public servants, which has been associated to a reduced administrative capacity to use new technologies, in the absence of IT training (EC, 2018). Similarly, the shared attitudes and vision of Slovenian public administrators can be characterized as tending to hierarchical structures, where a more closed system can be identified, although recently there has been a turning to greater incentives towards transversal shared knowledge.

The dimension of professionalism proves to be more ambiguous, as in the strict sense of the operationalized definition as "following the rule of law", Estonian public servants tend to adhere less to existing regulation, while Slovenian public servants strongly rely on regulations in their roles. This may also be tied to the responsibilities and ethical valence with which their profession is defined. In Estonia, the Code of Ethics defines as key values for public servants 'lawfulness', yet at the same time 'openness'. In Slovenia, the three key regulations for the PA present a long list of values including 'human dignity', 'responsibility', but also a strong emphasis on 'legal protection', 'legality' and 'judicial control'. This dimension allows to characterize the two countries as having distinct approaches to professionalism.

Administrative culture was underlined by all the respondents as being relevant for studying e-government (R1-R10). In particular, Slovenian respondents R5, R6, R8, R9, R10 underline that there is a needed shift for the administrative culture to be less bureaucratic, in order to speed up the efficiency and implementation of e-government applications. However, other inductive findings emerged, where the "political will" in both countries was deemed important for driving e-government implementation. On one hand, in Slovenia the respondents (R7, R8, R10) underlined that the frequency with which the governments change, together with the different priorities within each administration, may be seen as an obstacle for e-government implementation. This is tied to the top-down decision-making processes, where a strong political will towards driving e-government change is seen as necessary for driving change. In Estonia, a strong political will to implement e-government can be identified, partially due to the direction the country took in the post-communist reconstruction as branding itself as an "ICT country" (R9). The development itself of e-government has been incorporated at all levels as a strategic advantage for the country.

Therefore, reflecting on the literature review on institutionalist analysis, it emerges that a more complex reality exists between the various institutional factors affecting e-government. Administrative culture in that sense may be considered one such factor, as all its four dimensions can be identified as relevant, yet it only plays a marginal role in explaining variation in e-government levels.

6.3. Implications

The comparison of the evidence in table 5 through the MSSD table, allows to analyse the findings schematically, as suggested by Blatter and Haverland (2012). Following Mill's method of difference, the identified control variables of GDP, IT legislation, accession to the EU and the communist past can be excluded as explanations for e-government implementation differences between the cases, seeing as similarities cannot explain differences. While the relevance of administrative culture as a variable to understand and explain e-government implementation has been underlined by the respondents as being important, the methodology of the MSSD presents a key issue. Indeed, the observed difference exists not only in the administrative culture, but also in the ICT infrastructure level, which is highly developed in Estonia, against the developed in Slovenia.

Variable	Characteristic	Estonia	Slovenia
Control variable	Legacy of communist past	Yes	Yes
Control variable	Year of accession to the EU	Same (2004)	Same (2004)
Control variable	GDP (per capita)	High	High
Control variable	IT-specific legislation	Medium-high	Medium-high
Control variable	ICT infrastructure maturity	Highly Developed	Developed
Independent Variable	*Administrative culture*	Results-oriented, open, innovation-oriented and pragmatic. Tending to NPM paradigms.	Regulation-oriented, hierarchical, citizen-oriented, and bureaucratic. Tending to hybrid Weberian and German culture.
Dependent variable	*E-government implementation*	Higher	Lower

Table 5: MSSD design adapted with evidence (personalized with own data, MSSD table from Blatter & Haverland, 2012)

According to Blatter and Haverland (2012, p.56) this means that "the visual inspection of the table does not allows us to infer that administrative culture has a causal effect". The variation in administrative culture exists, but the concurrent variation in ICT infrastructure also exists. Theoretical reasoning, may allow to distinguish between the concurrent explanations, as presented in Haverland's "National Adaptation to the European Union" (Blatter & Haverland, 2012, p.60). Following the hypotheses on administrative culture, the innovation-oriented, open and pragmatic administrative culture facilitates a higher level of e-government

implementation. This was the case for Estonia, which presented a higher level of e-government implementation. In relation to ICT infrastructure, on the other hand, a country with more developed infrastructure is expected to have a higher level of e-government implementation. When comparing Estonia and Slovenia, this can be considered to be true, as Estonia has a much higher level. Yet, Slovenia cannot be considered under-developed, therefore the variation identified in ICT infrastructure and e-government implementation exists, but is not very strong.

One of the key implications of this thesis and the methodology chosen is that it reflects what Blatter and Haverland (2012, p.61) argued: while the COV approach can be used to respond to a directional empirical question such as "Does X make a difference?" it may also contribute to theoretical debates. In this case, two key elements emerge: firstly, that not all dimensions of administrative culture can be deemed relevant at the same level, and secondly, that to some extent the technological determinism which the theoretical framework wished to control for, can still be identified. Indeed, this co-variational study underlined the theoretical relation between Technical and Institutional approaches to e-government, suggesting that actually the effects may not be as linear and independent as suggested. Possible suggestions for future research may be identified from this. Therefore, what can be concluded is that the relation between administrative culture and e-government implementation can be identified, however it can be considered only of marginal relevance. A possible confounding effect can be found in the role of ICT infrastructure, which however may be justified following theoretical arguments.

Chapter 8: Conclusion

This chapter presents the answer to the central research question in section 8.1, following which, section 8.2. presents the identified limitations for this research, together with suggestions for further research.

8.1. Answering the research question

The central research question of this thesis is: *How does administrative culture affect e-government implementation across Eastern European Member States?*

The aim of this research was to identify whether administrative culture differences exist between Slovenia and Estonia and according to which dimensions of influence does administrative culture affect e-government implementation differently. Indeed the two countries are characterized by two different levels of e-government implementation, as Estonia can be considered in a highly developed, transformational stage, whilst Slovenia is developed, but can be considered at a Transactional phase. At the same time, also the administrative cultures of the two countries have been found to differ. In this regard, the role of administrative culture was identified as having four channels of influence: bureaucratic culture, normative culture, shared attitudes and vision, and professionalism. These dimensions can be considered apt at characterizing administrative culture, and potentially explaining differences in e-government implementation level. However, as underlined by the case by case analysis of Estonia and Slovenia, ICT infrastructure and political will emerges as variables that potentially may explain the variation of e-government at the same time as administrative culture.

Therefore, the characterization of an administrative culture that is less bureaucratic, more open, innovation-oriented, and pragmatic, only marginally may explain e-government implementation variation in Estonia and Slovenia over the period of the past two decades.

8.2. Limitations and recommendations for future research

This research presents certain limitations, of which the first is relating to methodology. The choice of a case study approach with MSSD design limits the number of cases that can be compared. This inevitably impacts the extent to which the findings can be generalized. The comparative case study may pave the way for future large-N study, in order to study whether,

holding that the established relationship has been found in case study, the results may be generalizable to a larger population sample, increasing the external validity (Blatter & Haverland, 2012). In the present case, co-variation was identified with one of the control variables, therefore the result was not strong enough to establish a relationship. A suggestions for future research would be through the use of quantitative and statistical methods, to control for issues of multicollinearity, as was the issue of the present research.

Secondly, despite the use of a structured protocol, it was not always possible to ask the same questions to all respondents and, while keeping the same topic, the formulation and order of the questions deviated in some cases from the original exact protocol questions. Therefore, this may be considered a reduced reliability of the interview data, but it was considered as a potential limitation when choosing to undertake qualitative data collection.

Moreover, at a conceptual level, the endeavour of measuring administrative culture was not simple, and the choice of measurement through the four dimensions cannot be deemed very objective. In a way, the use of interviews to determine administrative culture allows the researcher to gather the intangible insights that are not present in the literature. They remain, however, insights and opinions, and therefore future research may attempt to delve into larger-scale surveys, which allow to capture the opinions surrounding administrative culture with increased reliability. This method has been applied by Hofstede (1980), who provided one of the most famous classifications of organizational culture and national culture. Prior to arriving to this stage, research ought to establish which dimensions may be deemed important to characterize administrative culture, and the present research attempted to contribute to this.

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APPENDIX 1: Interview protocol and questions for experts

Introduction (5 minutes)
- Opening remarks with short summary of research goal.
- I will collect the data through a **recording,** of which a full **transcript** will be available afterwards (a request can be made for not recording the interview).

Topic	Interview Questions
<u>Opening questions</u>	1. Would you mind starting with a brief description of your background, and in particular your expertise relating to e-government. 2. Given your experience in the sector, what would you identify as some key determinants of the Slovenian e-government strategy and implementation? a. Some existent research of e-government has focused particularly on institutional explanations for differences in e-government between countries in Europe. What do you think of this as an approach to study e-government? 3. Could describe how the transition to e-government first started in Slovenia? And if you if you think there is a general a general characteristic that determines it?

<u>Questions relating to administrative culture</u>	I am interested in analysing the concept of administrative culture in its relation to e-government, and I will now turn to questions defining this variable more in detail.
	
	3. How would you generally describe the administrative culture in your public sector?
	
	I now turn to four dimensions of administrative culture I wish to define better from your experience in Slovenia.
	
	4. Bureaucratic culture
	4.1. How would you describe the orientation of public administrators in Slovenia towards rules and procedures?
	4.2. How would you describe the bureaucratic culture in Slovenia and in your experience?
	4.3. Which of the following two descriptions do you believe might adhere better to the public sector more accurately and if yes, why?
	      i. Public sector organizations are rich in rules and procedures, where communication is largely top-down and emphasizing efficiency.
	      ii. Public sector organizations are results-oriented, where innovation and mistakes are well tolerated.
	
	5. Normative administrative culture

	5.1. Do you believe that government employees have enough opportunities for in-service training? And do you think there are taken up enough?
	5.2. Would you identify a general positive predisposition of public administrators towards in-service training? Do you believe this is incentivized enough?
	6. Professionalism
	6.1. Do you think meeting citizens' needs is a major objective among public administrators?
	6.2. Do you see public administrators' work as focusing on implementing the existing regulation or focusing on results being delivered?
	7. Shared vision and attitudes
	a. Do you see public administrators' work as focusing on implementing professionally its tasks or focusing on results being delivered?
	b. Would you describe the public sector as being oriented towards implementing and monitoring existing procedures and/or do innovative ideas flow easily?
	c. How has the Slovenian public sector promoted more open attitudes towards innovation and e-government among its employees and public officials? (Openness to change)
The role of administrative culture on e-government	8. Do you believe government employees to operate according to a codified administrative procedure when implementing e-government?
	9. How would you describe the level of shared goals between the different stakeholders in the Slovenian e-government implementation? For example, this relates to the collaboration between private and public sector, and the degree of centralization.
	10. What do you think is the role of administrative culture in e-government implementation, from a government perspective?
	11. In your view, which administrative factors might influence the implementation of e-government?
	a. In particular, would you put an emphasis on administrative culture?
	b. What are the positive or negative outcomes of this approach?

APPENDIX 2: Interview protocol and questions for civil servants and public sector employees

Topic	Interview Questions
<u>**Opening questions**</u>	1. Would you mind starting with a brief description of your background, and in particular your expertise relating to e-government.
	2. Given your experience in the sector, what would you identify as some key determinants of the Slovenian e-government strategy and implementation?
	7.1. Some existent research of e-government has focused particularly on institutional explanations for differences in e-government between countries in Europe. What do you think of this as an approach to study e-government?
	3. Could describe how the transition to e-government first started in Slovenia? And if you if you think there is a general a general characteristic that determines it?
<u>**Questions relating to administrative culture**</u>	I am interested in analysing the concept of administrative culture in its relation to e-government, and I will now turn to questions defining this variable more in detail.
	4. How would you generally describe the administrative culture in your public sector?
	I now turn to four dimensions of administrative culture I wish to define better from your experience in Slovenia.
	5. Bureaucratic culture
	a. How would you describe the orientation of public administrators in Slovenia towards rules and procedures?
	7.2. How would you describe the bureaucratic culture in Slovenia and in your experience?
	7.3. Which of the following two descriptions do you believe might adhere better to the public sector more accurately and if yes, why?
	i. Public sector organizations are rich in rules and procedures, where communication is largely top-down and emphasizing efficiency.
	ii. Public sector organizations are results-oriented, where innovation and mistakes are well tolerated.
	6. Normative administrative culture
	a. Do you believe that government employees have enough opportunities for in-service training? And do you think there are taken up enough?

	b. Would you identify a general positive predisposition of public administrators towards in-service training? Do you believe this is incentivized enough?
	
	7. Professionalism
	   a. Do you think meeting citizens' needs is a major objective among public administrators?
	
	   c. Do you see public administrators' work as focusing on implementing the existing regulation or focusing on results being delivered?
	
	8. Shared vision and attitudes
	8.1. Do you see public administrators' work as focusing on implementing professionally its tasks or focusing on results being delivered?
	8.2. Would you describe the public sector as being oriented towards implementing and monitoring existing procedures and/or do innovative ideas flow easily?
	8.3. How has the Slovenian public sector promoted more open attitudes towards innovation and e-government among its employees and public officials?
	(Openness to change)

The role of administrative culture on e-government	9. Do you believe government employees to operate according to a codified administrative procedure when implementing e-government? 10. How would you describe the level of shared goals between the different stakeholders in the Slovenian e-government implementation? For example, this relates to the collaboration between private and public sector, and the degree of centralization. 11. What do you think is the role of administrative culture in e-government implementation, from a government perspective? 12. In your view, which administrative factors might influence the implementation of e-government? 12.1. In particular, would you put an emphasis on administrative culture? 12.2. What are the positive or negative outcomes of this approach?

APPENDIX 3: Information sheet and consent form

Dear Sir or Madam,

With this letter I would like to formally invite you to participate in the master thesis project "*Heterogeneity in Central and Eastern Europe: Do administrative cultures affect e-government implementation?*" by conducting a semi-structured interview.

My name is Eleonora Bonel and I am a student from Erasmus University Rotterdam. I am looking to collect data and information for my Thesis for the MSc in <u>International Public Management and Policy</u>. In particular, my endeavour is to conduct a comparative case study assessing how administrative cultures in Central and Eastern European countries may influence e-government implementation.
Given the relevance of the topic today, in an attempt to make the public sector increasingly efficient, I am interested in studying the institutional determinants of e-government across different countries. My focus on CEE countries is justified by an interest in expanding the body of knowledge of these diverse countries. For this purpose, I am looking to conduct semi-structured interviews with representatives from the civil service sector. I would collect the data through **recorded interviews,** of which a full **transcript** will be available afterwards. This will allow me to gain valuable insights from representatives of the public sector.

Confidentiality and data protection
If you have any question or want more information about the purpose of this study, please contact me via email on __X___or by phone __X_. The collected data will be used for an aggregated analysis and no confidential information or personal data will be included in the research outcome. The data is stored in a secure location and will be kept for 2 years maximum. The data collected will be exclusively shared with my thesis supervisor Adrià Albareda Sanz (e-mail_X_) for the purpose researching and writing my master thesis mandatory for completion of my studies at Erasmus School of Social and Behavioural Sciences, Erasmus University.

Voluntary participation & individual rights
Your participation is voluntary and you can stop at any time. When you participate in the research, you have the rights to request more information about the data collection, analysis or withdraw the consent and ask data erasure before the dataset is anonymized or manuscript submitted for publishing. You can exercise your rights by contacting me. Equally, if you have any complaints regarding the processing of personal data in this research, please do not hesitate to contact me.

Kindly find attached a consent form, with the link to the University regulations in case you were to have any doubts. In case you were available for helping me in my research, I will provide further details on the form which allows me to proceed with the interview.

Please do not hesitate to contact me with any queries or requests.

I look forward to hearing back from you.
Yours sincerely,

Eleonora Bonel

Erasmus University Rotterdam

Erasmus School of Social and Behavioural Sciences

Consent form: *Administrative cultures in e-government implementation*

Upon signing of this consent form, I confirm that:

- I've been informed about the purpose of the research, data collection and storage as explained in the information sheet;
- I've read the information sheet, or it has been read to me;
- I've had an opportunity to ask questions about the study; the questions have been answered sufficiently;
- I voluntarily agree to participate in this research;
- I understand that the information will be treated confidentially;
- I understand that I can stop participation any time or refuse to answer any questions without any consequences;
- I understand that I can withdraw my consent before the dataset is submitted for approval.

Additionally, I give permission to:

	Yes	No
I give permission to audio record the interview		
I give permission to use anonymized quotes from my interview		

Name of research participant:

Date: _____

Signature: _____

APPENDIX 4: CODING SCHEME

The Table shows the codebook for the interviews, differentiated by colour according to whether the concept, code or sub-code were generated in advance (blue or darker colour) or inductively during the coding process and the interview (orange or lighter colour).

Concept	Code	Sub-code
1. General information	**1.1. Experience in e-government** **1.2. Role in Organization**	
2. E-government implementation	2.1. **Description**	
	2.2. **Outreach** Ambitions to export the e-government model	
	2.3. **Quality**	
	2.4. **Transition to e-government**	
3. Administrative culture	3.1. **Perception**	
	3.2. **Bureaucratic culture**	2.1.1. **Participatory/Network** (less bureaucratic)
		• Proposals are welcomed, openness to change • Results oriented, aim is to deliver certain goals. • Innovation oriented • Shared knowledge • NPM – oriented (? See if keep)
		2.1.2. **Regulation-oriented/Hierarchical** (more bureaucratic)
		• "I've always done it this way" attitude: resistance to change • Following legislation letter to letter • Strict adherence to rules • High number of rules and legislation • Normative language • Adherence to Weberian model(? See if keep)
	3.3. **Normative administrative culture**	• Availability of in-service training • Opportunities to improve one's skills and knowledge

	3.4. **Professionalism** 85	• Respect of the rule of law • Adherence to tenets of the professional category
	3.5. **Shared attitudes and vision**	• Openness to change • Attitudes towards innovation •
	3.6. **Additional dimensions**	
4. Perceptions of administrative culture on e-government implementation	4.1. **Important**	4.1.1. Mentality
		4.1.2. Culture leads first
		4.1.3. Encourages testing of ideas
		4.1.4. Trickles down in organization
		4.1.5. Varies according to organization
	4.2. **Less relevant**	4.2.1. Administrative practices instead of culture
		4.2.2. Difficulty of impact measurement
5. Additional variables relevant for e-government implementation	5.1. **Centralized or Decentralized**	
	5.2. **Collaboration between stakeholders**	
	5.3. **IT literacy and education**	
	5.4. **Private Banking sector**	
	5.5. **Change management**	
6. Control variables	6.1. **GDP / Size of the economy**	
	6.2. **Communist legacy**	
	6.3. **IT Infrastructure**	
	6.4. **Year of accession to EU**	
7. Other elements	7.1. **Suggestion for future researchers**	

APPENDIX 5: Four-staged E-government maturity model (UN, 2020b)

The source for the model is found in chapter 7, United Nations (2020b).

	Online presence	Transactional	Connected	Transformative
01 Vision, leadership, mindsets	Individual leaders in IT department support e-government; Reactive mindsets	Some e-government champions across government	Leadership's commitment at top level creates an environment that allows people to become more involved	Transformational leadership and full support for digital government from leadership at all levels of government; digital strategy is embedded in or aligned with the national development strategy; Teams aligned around data; forward-looking, proactive/anticipatory, innovative, digital and adaptive mind-sets
02 Legal and institutional framework	Basic laws are in place	Regulators as watchdogs; some form of legal authentication of citizen ID	Most legislation in place	Regulators as facilitators; Farsighted and comprehensive legal framework; strong Digital ID; regulatory sandboxes to explore use of emerging technologies
03 Organizational set-up and culture	Not centralized	E-government coordination is under a ministry such as the ICT ministry	CIO at the central level	CIO located within the highest-ranking decision-making body in government with budgetary autonomy; multidisciplinary and cross-functional teams; network of CIOs national/local levels
04 Systems thinking and integration	Departments work in silos; low integration of services; information available online	Two-way communication with people; downloadable forms'; some e-government projects are experimenting with integrated approaches	E-services cut across ministries and departments and services are provided in a seamless manner; from government-centric to people-centric service delivery	Environment of continuous learning to quickly adapt to change; operational agility, e.g., analytics-enabled human resources to identify and bridge skills gaps, and procurement engages innovative start-ups; augmented workforce or human and machine collaboration, which require among other things, creativity, strategic decisions and empathy; freeing up employees to carry out higher value-added tasks which require creativity; Strong single government website; "Digital-first principle," digital by default, digital by design and mobile-first principle Public service delivery as an integrated system; strong National Digital ID; anticipatory people-centric and people-driven services; co-creation of services Government easy to deal with, responsive and adaptive to people's needs
05 Data management	Limited access to accurate, timely, disaggregated and widely available data	Transaction data–based culture	Data integration and synchronization	Data governance office; once-only (data) principle; data-driven culture; evidence-informed decisions; continuous monitoring and improvement of data; open, machine-readable government data and high usage of open data
06 ICT Infrastructure, affordability & access	Low connectivity; Low availability of hardware No strategy on ICT investment as a whole; IT centric	Customer centric	One single government website	High broadband connectivity, use of frontier technologies, big data; platform business model; decentralized and interoperability architecture; secure by design; blockchain as a security feature; ecosystem centric
07 Resources	Little or no investment for digital transformation	Investment for specific projects	Large-scale investment	Whole-of-government and long-term approach to IT investment, including sustainability in financing; public-private partnerships
08 Capacity of capacity developers	Limited capacity	Investment in computer labs	The use of ICT integrated in all curricula	Strong partnerships with academia, think tanks, private sector, i.e., innovation labs, and other national governments, e.g., regional cybersecurity training; engagement of schools of public administration in building curricula for digital capacity and other relevant skills, continuous training of trainers
09 Societal capacities	Limited programmes in place to build societal capacities	Outreach activities to some vulnerable groups		Digital literacy in society high and Internet penetration also very high at all levels; omni or multichannel approach to lifelong learning' partnerships between government and local ICT industries; maintain trust in government and ICT security, safety and privacy

APPENDIX 6: GDP per capita over time (Slovenia and Estonia)

	Estonia	Slovenia
Year	GDP per capita*	GDP per capita
2020	38359	38727
2019	38881	41181
2018	36406	38952
2017	33902	36516
2016	31574	33943
2015	29436	31632
2014	29108	30873
2013	27596	29980
2012	26141	29048
2011	24739	28931
2010	21785	27845
2009	20591	27531
2008	22808	29595
2007	22128	27527
2006	19252	25673
2005	16574	23849
2004	14483	22739
2003	13081	21085
2002	11635	20236
2001	10292	18957

* GDP per capita, adjusted for PPP, euro per capita (source: OECD, 2021).