Meeting In The Middle

Qualitative study of the State of State Innovation

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Meeting in the Middle: The State of State Innovation

Abstract:

The research question "What are factors that affect adoption of innovation in the public sector?" was selected as the aim of this thesis to gain a conceptual understanding of an innovation adoption process. A qualitative study has been performed, with 17 interviewees from the Swedish public sector. Public servants and elected officials are at the core of public sector innovation and therefore their sense-making is the spotlight of this interpretive study. Empirics were analyzed through a grounded inductive analysis through which the Integrated TOE framework was constructed upon to offer a new model. Findings illustrate both top-down directives and bottom-up support to be crucial for innovation adoption to materialize. Each direction is constituted of factors influenced by differing origins of motivation that are instrumental to the diverse aspects of change necessary for the adoption process to be complete. Through the analysis, moreover, a framework of innovation adoption process is proposed.

The particular innovation studied concerns open data in which data produced in the public sector is published openly for re-use. It is a branch of open government initiatives that has begun to infiltrate policy-departments across the world and is described to have important implications for further promoting democracy and innovation. Study of innovation in the public sector in general is critically important as it improves government services, governance, and ability to address wicked challenges.

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Definitions

API: An Application Programming Interface (API) is a code that enables two software programs to communicate. An API defines how a developer should request services from an operating system or other application, and expose any data across multiple channels.

(Government) Agency: Semi-autonomous public organization that operates at arm's length from the government, usually reporting to a ministry and mandated to carry out public tasks (e.g. regulation, service delivery, policy implementation).

Municipality: An entity responsible for a significant proportion of all public services within a specific geographic area. It operates with a notable degree of self-governance and possesses autonomous authority, including independent taxation powers, to manage and fund its services and initiatives.

Public sector: portion of the economy composed of all levels of government and government-controlled enterprises.

Public (civil) servant: Any person who works for the government.

Public service: A public service is an economic activity of general interest defined, created and controlled by the public authorities and subject, to varying degrees, to a special legal regime.

Open Data: Open (government) data refers to the information collected, produced or paid for by the public bodies and made freely available for re-use for any purpose.

Open government: Open government strategies and initiatives are based on the principles of transparency, integrity, accountability and stakeholder participation. Initiatives include open data, open budget and participatory budgeting, open parliament, open contracting, whistleblower protection, etc.

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Foreword

"Information is the currency of democracy." - attributed to *Thomas Jefferson*

1. Introduction

1.1 Background

1.1.1 Innovation in the public sector

When discussing innovation within the public sector, two distinct yet interconnected forms of innovation may be considered (Buchheim et al., 2020). Firstly, it involves financial funding the public sector provides for private sector entities for experimentation, thereby fostering technological and scientific advancements. This is increasing in momentum by scholars such as Mazzucato (2021) who call for a more entrepreneurial state. The second type, the primary focus of this thesis, revolves around innovations that unfold within the internal processes of the public sector. For such innovations, the driving force lies in improving service performance and delivering additional value for the benefit of the public (Lee et al, 2012).

Given the dynamism of the world and growing nature of complex wicked challenges, it is increasingly becoming more imperative for the public sector to innovate (Hartley, 2005; Osborne et al., 2020). Benefits of public sector innovation include organizational effectiveness, benchmarking, adaptation to economic changes, as well as serving as a platform for private sector innovation systems (Potts & Kastelle, 2010). Public sector innovation, therefore, extends beyond incremental improvement as its effects expand to the broader societal context.

Ultimately, as innovation in the public sector unravels, it can help meet the demands of global challenges by enabling a more responsive and effective governance structure that brings on public value. Moreover, democracy is defined as having to do with the services and tools that define the relation between authority and the individual (Selznick, 1984). Innovation in the public sector therefore directly links to and (re)defines this relation by improving services offered.

1.1.2 Open government

Digitalization in the government, a common form of innovation in the public sector, received greater attention with the development of information technologies (Zhang et al., 2017). 'Open government' and 'Digital government' overlap in certain aspects but are fundamentally distinct (OECD). The OECD defines digitalization in the government as the use of ICTs while open government encompasses strategies and initiatives that fundamentally sprout from the principle of transparency, integrity, accountability, and stakeholder participation. The success of open government strategy is defined to be dependent on a solid policy and legal framework (OECD, 2016). Open data can be described as a flagship strategy in the strive towards open government.

1.1.3 Open data

With more policy departments across the world introducing open data initiatives, research studies followed suit, which is described further in Literature Review (Jetzek et al., 2014; Zhenbin et al., 2020).

Open data falls under science, technology and innovation policy efforts; By publishing data sets, innovation is believed to be fostered by private enterprises and citizens who utilize it in ways unforeseen by the public sector agents who produced it (OECD, 2021). It is inherently public-facing (Rudmar & Andersson, 2022). The driving factors for public agencies to participate in open data initiatives and the barriers that arise have been researched. These studies repeatedly find open government data as a tremendous resource that is often left untapped (Zhenbin et al., 2020).

The prima facie open data as a concept in the European Union (EU) surfaced with the introduction of the Public Sector Information Directive in 2003. This was later amended and renamed in 2013 then again in 2019. The latest version, titled the "Open Data Directive" (Directive EU 2019/1024) is specifically on the re-use of public sector data.

1.2 Case setting

As an innovation, 'open data' is selected. This subsection describes open (government) data in terms of its origin and purpose in the Swedish context.

1.2.1 Governance of Sweden

In Sweden, there are over 340 government agencies operating at the national level and are responsible for formulating national policies and implementing laws passed by the Riksdag, the supreme political decision-making body (SKR, 2023). Moreover, Sweden is divided into 290 municipalities and 21 regions (Sweden, 2022). With the exception of Gotland, each entity is independent with their own self-governing local authorities whose focus is on local governance as they strive to cater to the needs of the residents within the geographic area (Government offices of Sweden, 2023).

Sweden is recognized for the high trust that its citizens have in the government (Lee, 2018). Still, it ranks lower than other Nordic countries and experiences fluctuations in which public trust falls "markedly." (Sveriges Radio, 2023; OECD, 2021).

1.2.2 Open data in Sweden

As a member state of the EU, it was mandatory for Sweden to adopt the directive on open data. There was given flexibility in terms of how to achieve the directive's objectives. The Riksdag passed the first national legislation concerning open data over two decades ago (Regeringen, 2023). Given recent developments in the directive, Sweden passed another national legislation in 2022 that contains additional specifications (i.e. all uploaded data required to be machine-readable).

Prior to this directive and today, Sweden has operated under the Freedom of the Press Act (Riksdagen, 2023). In order to guarantee an open society, government and governmental agencies practice the principle of public access to official documents in which at the anonymous request of citizens, the government grant(s) the document(s) (ibid). Open data differentiates from this in two ways: (i) the freedom act grants documents to be picked up at City Hall, for instance, and does not cover digital transfers and (ii) under open data, data is published before requests are made and often extends beyond official documents (i.e. salary of employees) to more diverse matters (i.e. types of trees planted to educational opportunities). Due to these reasons which extend the principles of the existing mechanisms, open data is identified to be an innovation.

Currently, Sweden has a National Data Portal along with several smaller data portals specific to each agency and municipality. Since 2015 when the reporting began, Sweden has been evaluated as a 'Follower' (possible evaluations are Beginner, Follower, Fast-tracker, Trendsetter) among EU member states (Maturity Report on open data,

EU). Sweden has competitively ranked high in the world in terms of innovation and the Swedish government continues to aim towards enhancing its innovative capabilities (Sweden; Riksdag). Considering the strive towards innovation in Sweden along with the supposed innovative potential of open data, it is noteworthy that Sweden is positioned as a Follower in this aspect. A study of open data in Sweden is found to be quite timely.

There is a need to balance risks with benefits to promote data sharing. Despite the new open data law aimed at promoting the use of open data and stimulating innovation in products and services, relatively little data is still being shared per government agency.

1.3 Purpose and Research Question

The purpose of this study is to explore the process of innovation adoption by an organization. Open data therefore is a suitable selection as the adoption entails management material in addition to attending to the technological aspects. The specific organizational context under examination is the public sector in Sweden.

Research Question:
> **What are factors that affect adoption of innovation in the public sector?**

The term 'factor' in the overarching question encompasses diverse elements or variables that affect innovation adoption. Given the explorative nature of the study, specific factors are not defined.

1.4 Delimitation

Rather than analyzing the innovation adoption process by numerous member states, only Sweden's process is studied, which marks the first delimitation of the study. To achieve the research aim, only the responses of the interviewees are considered; the innovation adoption process is studied, not graded or evaluated in terms of success and hence the quantity and quality of the data sets uploaded, for instance, is not considered. Additionally, to respect the time restrictions, open data as an innovation is studied as it is presently ongoing in its processes. While the development in open data is considered based on the responses of the interviews and readings online, this study is not a longitudinal study that tracks the entire history of open data in Sweden.

2. Literature Review

This section provides an oversight of the fields of research relevant to the topic of this thesis. Its aim is to provide insights into the existing conversation on innovation adoption process in the public sector to highlight lesser explored areas and position our study.

2.1 Innovation in the public sector

The collection of research on innovation within the public sector focuses on understanding the driving mechanisms behind these innovations. Rather than looking into specific processes involved, these studies emphasize the general benefits with the adoption of different types of public sector innovation. Common among existing literature is that they are case studies aimed to bring understanding on the specific type of innovation and how that innovation is adopted. Researchers specify models used and variables that are tailored to the specific innovation research purposes (Wang & Lo, 2016; Cagigas et al., 2023).

Nevertheless, a growing area of research aims to grasp the adoption process by examining diverse case studies covering various innovations actively being pursued within the public sector. Additionally, subsequent research endeavors delve into methods of measuring the benefits derived from such innovations (Nandal, 2020).

In response to increasing adoption of innovation and awareness, papers have emerged seeking to provide a more holistic overview of innovation in the public sector (Fenwick et al., 2013, De Vries, 2016). Moreover, concurrent with the implementation of innovations, there is a trend towards developing theoretical frameworks and conceptualizing these processes. However, despite describing specific elements of the adoption process, this stream of research has yet to present a comprehensive model.

2.2 Open data

Research on open data initiatives tends to align with the evolution of the innovation itself. Initially, studies focus on exploring and evaluating the potential impact of the innovation as it evolves. A substantial amount of literature extensively elaborates on the benefits brought with open data (Janssen et al., 2012). Osborne & Brown's (2014) work emphasizes recognized operational and strategic gains, while Hanisch et al. (2023) delve into strategies for managing tension between cooperation and competition among digital exchange participants.

Furthermore, Zou et al. (2023) present compelling evidence suggesting that digital government, through transparent information publication, effectively controls corruption.

Besides benefits, the focus of research is on measuring and addressing barriers within Open Government Data (OGD) systems (Zhenbin et al., 2020). There is a growing exploration into whether these identified factors significantly impact the adoption of these systems (ibid). Concurrently, efforts are made to identify and mitigate challenges associated with data publication, aiming to facilitate the adoption process (Natvig et al., 2021).

The literature also highlights significant gaps in understanding of governance mechanisms. This disparity between the innovation's potential and its practical realization remains a critical concern (Jetzek, 2014).

2.3 Research Gap

While there exists thorough research on open data and other innovation within the public sector, the current literature points out an absence of a consistent framework suitable for comparing and assessing adoption processes (Duhamel et al., 2023). Although Duhamel's Integrated TOE framework for adoption process is acknowledged, this area seems relatively under-researched. This study aims to address and contribute to this research gap by examining Duhamel's model in a broader context and conducting an inductive analysis in a different case setting. This research aims to enhance the conceptualization of research within this domain.

Currently, there is a growing area of research focused on understanding the adoption process through various case studies on different innovations actively being adopted by the public sector. However, to the best of the authors' knowledge, these specific findings regarding adoption processes miss applicability to other types of innovation. The objective of this study is to provide a transferable framework applicable to various innovation adoption processes.

3. Theoretical Framework

This section aims to provide a theoretical foundation on the issues studied prior to exploring the phenomenon in practice. The theoretical framework begins by examining the development and evolution of the theory within change management during technological advancements.

3.1 Evolution of Innovation diffusion theory

In the context of innovation adoption, Rogers (1962) is the primary figure associated. Rogers developed the Innovation Diffusion Theory, which explains how innovation is adopted and spread depending on communication channels, social systems, time, and the perceived attributes, and particularly personal characteristics. From this focus on the individual, Tornatzky and Fleischer (1990) extends the framework to study technological innovation adoption at the organizational setting.

Tornatzky and Fleischer's model, referred to as Technology-Organization-Environment Framework (TOE) builds upon Roger's model. Innovation, within this theoretical framework, refers to an idea, practice, or object perceived as new and can range from technological advancements to new organizational practices. There have been further refinements and modifications to these three factors over the years (Duhamel et al., 2023; Townsend, 2013; Kim & Lee, 2009; and Andersen & Jakobsen, 2018). More recently, however, a development to the overall TOE framework has been proposed (Duhamel et al., 2023). The development was borne as a result of a case study of innovation adoption in the public sector, which revealed previously underexplored determinants that helped explain the driving forces and barriers to the process (ibid).

This new alteration resulted in addition of *'process design and mapping'* which is defined as the alignment with usual processes, clarity and completeness of the specifications that affect adoption of innovation. Moreover, recent scholars call for the integrated approach to the TOE framework, viewing each determinant as interrelated in determining adoption of innovation in public administrations (ibid).

Figure 1. *Integrated TOE framework (Duhamel et al., 2023)*

The integrated model framework proposes for showing the interrelations between those determinants, thus improving the previous TOE-based models (Duhamel et al., 2023). The first step is described as *Perceptions of External Pressure*, which include laws and legislation along with political leadership and governance, that then leads to the *Commitment* to adopt the innovation. Then, three factors determine *Innovation Adoption*, which then leads to the creation of *Public Value*. The three factors are *Benefits vs Risk* which essentially answers the question regarding why this innovation should be adopted in terms of the value and drawbacks; *Knowledge* which concerns the organization's simple awareness along with experience and familiarity; *Process design and mapping* concerns how the innovation aligns with existing processes, and the clarity of what is expected.

3.2 Applicability of the Theoretical Framework

3.2.1 Technological-Organizational-Environmental (TOE) model

The TOE model is used by researchers to explore various types of innovation adoption cases. Initial studies' motivation of TOE as a model primarily based its proposal on technological innovation such as television and anesthesia (Tornatzky & Fleischer, 1990).

The TOE framework has been used in the study of driving factors of open innovation in China which found perceived technological competency of personnel in the *Technological* factor as the most crucial determinant of adoption (Zhang, 2017). Other scholars have also used the framework to study open government data initiative in Taiwan (Wang & Lo, 2016) which confirmed the three defined determinants to be suitable to their case study but found perceived barriers, part of the *Environmental* factor, to be irrelevant. More recently, the model was used to study the adoption of electronic signatures in the Mexican government (Duhamel et al., 2023).

3.2.2 Integrated TOE model

The integrated TOE model by Duhamel et al. (2023) was developed as a result of findings of underexplored aspects in the aforementioned study. The model as intended by the authors, identifies the critical conditions, the determining factors in the path that result in innovation adoption and therefore creation of public value. Hence, the model may aid in understanding the path of innovation adoption by an organization.

3.3 Conclusion of the Theoretical Framework

In review of research uses of the TOE framework, the above mentioned case studies were a handful of papers available that applied the model to innovation in the public sector. The Integrated TOE framework described will be used in the study as it aligns with the aim.

4. Methodology

4.1 Research Approach

This report is based on an interpretive paradigm and makes use of qualitative research design to understand the process of innovation adoption in the public sector.

4.1.1 Research strategy

The study is placed in the interpretive paradigm, adopting the understanding that individuals attach subjective meaning to their experiences and socially construct their sense of reality (Saunders, 2019). Through adopting this stance, subjective epistemology has been chosen since the considerable size of the theoretical framework accounts how the government employee perceives their own competence, their value-creation for the citizens, their role in relation to the organization and their organization's role in society.

4.1.2 Research design

This paper makes use of the case study approach with semi-structured interviews. The aim is to add to the literature on the adoption process of innovation in the public sector. To reach this research aim, a qualitative approach was utilized. Firstly, qualitative research is valuable for gaining a deeper understanding of phenomena (Zilber & Meyer, 2022) and allows the authors "to get closer" to the phenomenon that is researched (Reich, 2021). Therefore it yields more in-depth insights into what and how the government employee understands their constructed reality and acts in relation to the innovation.

Secondly, it allows researchers to critically examine how closeness to the phenomenon being studied matters, considering the positionality of both the researcher and the research (Reich, 2021). As the research aim is not to grade the organization on innovation adoption, but rather to understand the process challenges to present generalizable findings, qualitative research is utilized. If the former was the aim, perhaps a review of quantifiable metrics of data uploaded would be a better fit.

In alignment with the interpretive paradigm, authors strived to be empathetic during interviews to respect the dignity of the interviewees and respectfully acknowledge their role as government employees and as individuals (Alvesson & Sjöberg, 2018). Authors

also aimed to be reflective and critical as not to introduce bias or be steered by a single interview or response (ibid).

After reaching a decision on selecting a qualitative method for theory study, a semi-structured interview format was selected. The semi-structured interview format is chosen as it enables the sprouting of unanticipated responses while benefiting from a sense of standardization (Saunders, 2019).

4.2 Data Collection

Prior to the interviews, the authors conducted 'desk-research analysis' in order to gain an understanding of the case study. Such analysis includes available information of the founding, funding, and development of open data.

4.2.1 Sample

The study explores individuals in several interconnected agencies and municipalities. In pursuit of drawing a 'full picture' akin to the analogy of the elephant and the five blind men, (Alvesson & Sköldberg, 2000) partial perspectives were gathered from several sources. The understanding of different organizations and agencies is vital for the holistic understanding of the adoption process in the public sector. The sample size was concluded when no new codes emerged.

Notably, the roles and titles of every interviewed individual do not align uniformly. While an initial perspective might suggest that it would be more logical to exclusively select and interview individuals with similar job titles across all organizations (i.e. IT specialist) this presumption was found to be short-sighted. Each agency and municipality designated differing personnel within their respective organizations to carry out the task of uploading data. As a result, these particular employees were selected for the interviews who hold various titles, ranging from IT specialist to Head of Department.

The interviews are conducted with employees at the following governmental organizations. To respect anonymity, they are assigned a code.

Table I . Overview of Interviewees

Code Name	Organization	Title
E1	Agency	Project Manager
E2	Agency	Investigator
E3	Agency	Community Manager
E4	Agency	Software Architect and Developer
E5	Agency	Product Manager
E6	Agency	Solutions Architect
E7	Agency	Project Manager
E8	Agency	Head of Department
E9	Agency	Senior Communications Specialist
E10	Agency	Executive Coach
E11	Municipality	Unit Manager
E12	Municipality	Project leader
E13	Municipality	IT Strategist
E14	Municipality	IT Architect
E15	Municipality	IT Development Manager
E16	Municipality	IT Manager
E17	Municipality	Business Development Manager

4.2.3 Interview process

The interview questions were carefully designed after obtaining a comprehensive understanding of the Swedish public sector. This preparatory set of questions was concerned with the technicalities of open data, particularly the types of data being uploaded (if any) by the interviewee's organization.

Contact was established with the Open Data Coordinator. This conversation led to securing the first interview which was utilized as a pilot test to support the pertinence of developed questions guide. Initial interview resulted in an additional set of questions to explore prior mechanisms, introduction of open data and its perceptions, and the interviewee's understanding of how open data will unfold in the future.

Still, at the start of each interview, disclaimer was conveyed concerning the relevance of the questions. Authors stated that interview questions were formulated based on readings of documents that encouraged interviewees to express to the interviewer(s) if the questions failed to match their current practices.

After conducting five interviews, the authors realized that the question guide would be improved by including an extra set of questions. These additional questions would delve deeper into the intricacies of process design with the aim to understand the necessary processes, the factors impacting them, and the interrelationships among these factors. It moved the potential empirics from practical matters such as exact data sets uploaded to ones that call forth more sense-making of the employees - their experiences, challenges, hopes, and more. This was essential in part to ensure that the interviews were relevant and aligned with the current processes of adoption of open innovation; given the variety in the role titles and organizations represented, at the onset the authors wanted to ensure that the interviews addressed the core elements of the adoption process, as was interpreted by the employee. This refinement marked the final change made by the authors to the question guide. To maintain consistency in the insights gathered from the interviews, the authors reached out via email to the participants involved in the previous five interviews. To finalize, a second interview was conducted with the Coordinator, providing a sort of full-circle evaluation. Hence, 18 interviews with 17 individuals were conducted.

The interview guide prepared prior to the interview guided the conversation while the qualitative semi-structured nature of the interview enabled flexibility To process the empirical data, each interview was conducted online and recorded. Refer to Appendix II.

4.3 Data analysis

The grounded inductive analysis was conducted to analyze the empirical data that has been collected. The open codes were derived from interview transcripts. Within each interview,

then second-order codes were generated separately so as not to predict the codes. Such second-order code titles from all interviews were compiled together. From the list of second-order codes, generalized and broader concepts were generated. The latter step was an iterative and cyclical process in which data and theory were both utilized until the set of fourth-order codes were finalized. From the open to fourth-order codes, theory is constructed through the tactic of drawing diagrams to illustrate how the grounded concepts fall together (Alvesson & Sköldberg, 2018).

Rather than deriving theory only based on data in the absence of relation to other theory is discouraged in grounded inductive analysis discussions as it poses the risk the outcome "may be an abstract model of the 'logical-deductive' kind that has minimal applicability" (Alvesson & Sköldberg, 2018). As further described in Empirics and Analysis sections, the second-order codes at times utilize the authors' wording and other times use our wording. All third-order codes are named as Duhamel et al. and fourth-order codes are named by the authors. It must be acknowledged therefore that though data was analyzed through grounded inductive analysis, the selected existing framework played a significant role.

As part of such sense-making of interviewees, in which they express their construction of the world, discourse analysis was utilized in which the emotion evoked during conversation and diction of the responses were taken into consideration by authors (ibid).

Second Order	Third Order	Fourth order
Laws and Regulations	Perceptions of External Pressure	Top-down
Political Leadership		
Transparency and Credibility	Benefits and Risks	
Improving Government Services		
Threats to Publishing		
Experience/Familiarity	Knowledge (Top-down)	
Awareness		

Guidance	Process design and mapping	Bottom-Up
Budget allocations		
Role in society	Internal Pressure	
Interaction with citizens		
Experience/Familiarity	Knowledge (Bottom-Up)	
Awareness		

Figure 2. *Overview of the Coded Empirical Findings. Second-order codes and their further development in the 3rd and 4th order codes.*

4.4 Method discussion

4.4.1 Ethical considerations

The aim and purpose of the study along with information about the authors conducting the study were communicated to the respondents where they could implore and ask clarifying questions prior to and during the interviews. After thorough explanation of the study and its authors, informed consent was given by the interviewees. It was communicated that the respondents have the right to withdraw consent at any step to respect process consent.

All interviewees and the organization they work for were anonymized to respect the anonymity of respondents. Anonymization ensures the study findings will not be linked to respondents' individual work performance. This was one of the measures taken when striving to limit harm to the participants and foster an environment in which they do not feel restricted. All interviewed participants were provided a copy of the study to review prior to publication to confirm respondent validation.

Additionally, though this thesis is not a gender study, authors agree with the sentiment of sensitivity to gender conditions and relations as essential for all social science research (Alvesson & Sköldberg, 2018). Authors strive to reach an equitable representation of genders and validate all contributions (Leduc, 2009; Xie et al.).

4.4.2 Ensuring data quality

Criticism concerning the methodology may arise in regards to data quality (Saunders et al., 2019). To ensure quality, authors addressed concerns reliability, credibility, and generalizability (ibid).

The flexibility of qualitative research in exploring the complex nature of the topic (Saunders et al., 2007) and its capacity to look into complex matters by engaging individuals in discussions about their perceptions, attitudes, and motivations (Bell et al., 2019) has been utilized. Due to the subjective nature of responses received, the reliability of the data can be questioned. To prevent this authors have, besides interview response analysis, conducted readings of documents and reports to supplement findings. Furthermore, to address concerns of dependability, authors followed the interview questions guide when interviewing all respondents. Additionally, the credibility of research based on the interpretive paradigm can be questioned due to subjectivity of responses and the authors' ability to accurately report interviewee responses (Bell et al., 2019). During the data collection stage, the authors opted for interviews to be recorded and transcribed so as not to introduce personal interpretation which may arise in e.g. note-taking. Moreover, exact quotes from the interviews were provided in the empirics section to enhance transparency. While the research is not generalizable, acknowledged assumptions of the model may allow for transferability in particular contexts. These assumptions will be addressed in the Discussion.

4.4.3 Method Criticism

First criticism concerning the method may arise in sample selection. Among the 290 municipalities, 20 regions, and over 340 agencies, 7 agencies and 6 municipalities were selected among which 17 individuals were selected. Second criticism may concern the lack of consideration for the size of the organizations which may play a role in the innovation adoption process due to differences in capabilities and resources.

5. Empirics

This section provides an overview of empirical data aimed at addressing the research question: *What are factors that affect adoption of innovation in the public sector?*

In interviews, 325 open codes were identified. When describing the current challenges as well as enabling factors that they discern, interestingly, respondents report either a strong lack of top-down direction or bottom-up support. The latter appeared more among interview responses, overall. Some respondents view there to be a substantial amount of grassroots mobilization that faces stagnation and needs additional top-down support. Others resonate with the sentiment that there is a strong top-down push that is unfortunately not successful in innovation adoption due to lack of local reception and support. Hence, based on the third-order codes, two overarching fourth-order codes are identified: Top-Down and Bottom-Up.

5.1 Top-Down

5.1.1 Perceptions of External Pressure

5.1.1.1 Laws and Regulations
One of the most commonly brought up notions in the interviews was concerning *why* the interviewee believes their organization is adopting the innovation. According to them, the initiation, discussion, and then efforts towards 'open data' was a direct result of the EU directive and national legislation.

Some argue that because Sweden aims to perform well, the Swedish government readily jumped into implementing the innovation based on the Directive as another way to be "best in class" (E17). They highlight the significance of the national legislation that instigated the innovation, leading to the current state where their respective organization is tasked with uploading data.

5.1.1.2. Political Leadership
What is entailed by political leadership encompasses both administrative and political spheres. Besides regulations, 5 interviewees recognize there to be a dire need for politicians' support. They describe there to be a lack of political leadership and because

it is missing, the process of adoption is stagnating. In the interviews, an intriguing pattern has surfaced. Over half of interviewees are adept at identifying specific individuals to contact regarding inquiries related to innovation, while a lesser number are unable to identify individuals who have a sense of ownership concerning the innovation and someone to turn to in regards to the innovation. This finding highlights contrasting views in leadership currently.

"We don't have real initiative from I guess our politicians that need to say 'you should invest in more open data'. Then, we would be able to get fundings for it and to be able to accelerate."- E14

"If you are a public authority... It's the management's job responsibility to clarify a framework so it [is] clear for the rest of the organization. It is very important that the managers actually... inspire and motivate the people." – E10

5.1.2 Benefits and Risks

5.1.2.1 Transparency and Credibility

Other employees emphasized transparency and credibility as the value that open data creates for their organization, citing these as primary reasons for why they are implementing open data. In cases where their respective agency or municipality were perceived as 'corrupt' by the public, interviewees noted that they see open data as a tool and opportunity for promoting such ideals in the hopes of reinstating positive public perceptions. In pursuit of such ideals, therefore, the public servants also express they are hopeful for the economic value it will bring through the re-use of data in ways unforeseen.

"In many other countries, it's mainly about transparency and democracy. You [citizens] don't trust the government ... and then open data becomes sort of a tool for democracy. This is of course important in Sweden as well, but I think we are mainly concerned about the economic value that is possible to create if we had open data." - E8

"We gain more involvement from our citizens [through] transparency because the more they know about how the city works, the ... more beneficial ... it will be for both us and the citizens" - E11

5.1.2.2. Improving government services

The respondents arrive at similar conclusions in regard to the purpose and aim in implementing open data. Five respondents referred to the citizens as "clients" or "customers," viewing their role as a public servant creating value for the public by offering services; They perceive open data as not only improving existing services but also as a service in itself. The culture within the public sector was described as one that prioritizes maintenance of credibility and trust with its citizens. The utmost importance lies in providing excellent service to their citizens. Innovation requires new ways of doing things so the process of innovation adoption was characterized as a cautious process due to their perceived high degree of responsibility towards citizens.

Respondents described both perceived and proven uses of open data that have brought on economic growth and innovation in Swedish society. In several instances, usually at the beginning of the interview, respondents were only able to state verbatim definition of open data. Where there was a concrete example of a citizen using open data that brought about positive change unpredicted by the government employees, public servants admit they were more inclined to publish additional data sets.

"This one guy just took the API that was published online as open data and built an application that shows 'When does the tram come to this station?' That's the most popular used tram application that we have! He just wanted to know when the tram was at his station and that is a free service to all citizens who takes the tram...There's so many things that you can do with information."- E16

5.1.2.3 Threats of publishing

After confirming that the data complies with data protection guidelines, another necessary task is to ensure that the data is machine-readable and well-organized. This necessitates several hours of additional work. In uploading data to the portal, employees express that sometimes they feel insecure and afraid. Some employees feel insecure in the quality and content of the data that they produced. Others are apprehensive as how others will use the data is undefined. Such apprehensions lead them to stop the data uploading process, they admit.

"One of the scares is that I've done something wrong, I've collected it wrong, I understood it wrong. There's so many ideas in our heads of how we do our job that do not comply with giving it up freely to people and so on." - E16

"When you're uncertain, the easiest decision is not to publish anything." - E8

5.1.3 Knowledge

5.1.3.1 Awareness

Majority of respondents acknowledge that their awareness of the innovation and their organization's responsibility to upload data stemmed from the EU directive and/or national legislation. Apart from the EU directive, respondents call for more awareness from other government employees, politicians, and the general public. Without public awareness, they find it easier to delay actions that would further improve the adoption process. Furthermore, it appears that awareness of open data is influenced by others' awareness of the concept. One public servant expressed disappointment, mentioning that a Minister seemed to be unaware of open data though it existed several years in theory (E1).

"The organization is, however, in rapid development in the 'data area' with management finally beginning to 'see the light', and I'm now sure what I tell you now is outdated in a year as knowledge and interest in data evolves and develops during 2024!"- E15

5.1.3.2 Experience/Familiarity

Another code identified among the open codes has been 'Experience/Familiarity' that are in conjunction with this overarching fourth-order code of 'top-down'. Few respondents express that they feel particularly confident in their abilities. They state that they are generally aware of open data and have been for a while. It seems that the innovation has been resurfacing time and time again but without major breakthrough since the initial legislation over two decades ago. Hence while familiar, they do not feel experienced.

"We know that we need to share a lot of open data. We haven't yet and we are not sure exactly how and when and where to do it." - E13

5.2 Bottom-Up

5.2.1 Internal Pressure

Another sentiment expressed by the interviewees asserts that *real* change does not materialize solely in response to legislation, a form of top-down pressure. While interviews do acknowledge a willingness to adhere to national regulations, they also convey that either (i) sporadic efforts by individuals through the government who recognize the value of open data have championed it independently of external legal pressure, or (ii) legislation and push from disconnected politicians is insufficient for achieving significant success in innovation adoption. Moreover, some respondents highlight how parallel to the EU directive, there has been internal pressure or drive in organizations by certain individuals that advocate for open data.

5.2.1.1 Role in society

Among the interviewees, there have been over 5 instances in which the employees express their desires and aims to serve the public. Such employees refer to the citizens as 'clients' or 'customers' as aforementioned. Those who possess such internal motivation and desire to adopt the innovation regardless of laws and regulations and such external pressure, are hence identified to possess such an internal pressure. They construct this worldview in which they are aware of their impact in society and their organization's role in the broader Swedish sphere; for them, uploading data openly brings a sense of fulfillment. This second-order code, though similar, is distinct from 'Improving government services' given that this category reflects interview respondents' desire to adopt the innovation not because of laws and regulations or penalties and compensation but because of how they perceive their role in society.

"I do it because I'm an idealist. I wholeheartedly believe that it is our duty as public 'servant' to maximize efficiency for the sake of our taxpayers, and one way to do this is to use open data which 'we control'" - E15

5.2.1.2. Interaction with citizens

Certain number of the interviewees directly engaged with citizens unlike the others who do not engage with external parties. Those who have direct interactions with the public were more willing to adopt the innovation as they are more aware of the needs of and potential uses of data. Specifically, three respondents identify journalists to

make up a sizable bulk of the current users of their open data. Employees express journalists as insistent on being provided with reports which are considerably time-consuming to produce if dated.

"So just reversing that idea (finding the information, publishing it) saved us a lot of money and a lot of time for a lot of people in our organization that were getting so many emails and asks for 'Hey I want to see that because I know you're doing something shady' Now they can just simply go to the website and check" - E16

5.2.2 Process Design and Mapping

5.2.2.1 Guidance
Some interviewees highlight their hectic schedules and difficulty in prioritizing new initiatives in their existing work agendas. For them to implement new practices in their work they would appreciate having clearer examples of how to upload instead of some general rules. They perceive themselves as capable and competent but lack the necessary instructions and support to effectively navigate this implementation phase.

"If it was very easy to publish data just by pushing a button, more organizations certainly would publish. But it's not that easy." - E8

5.2.2.2. Budget Allocations
Budget constraints are reported to pose challenges. Limited monetary resources restrict investments in crucial technology, training, and infrastructure needed for implementation. Complex procedures to get the necessary resources and delays in acquiring them are detrimental to their capabilities to adopt the innovation. These resources are considered crucial for employees to integrate the innovation into their daily tasks. Currently, employees report open data to be entirely voluntary - there are no penalties or rewards for uploading data.

"There's the budget and you can't push money back and forward. There's been a very limited amount of... money in the project. I've been requesting for more resources but that is not going to happen until next year." - E5

5.2.3 Knowledge

5.2.3.1 Awareness

For public servants who most closely interact with the public (i.e. individual citizens, private enterprise representatives, or journalists) report to have valued open data in the absence of legislation and other external pressure. For few, the idea and therefore awareness of sharing data produced in-house was described to have almost borne organically. These individuals enthusiastically expressed an interest in keeping up-to-date in tech-related matters from AI to data analysis.

5.2.3.2 Experience/Familiarity

Respondents provided tangible examples in their answers when speaking about why they believe to be working on implementing open data. Such tangible examples arose as a result of prolonged experience and familiarity with their own organization in which they have or considered uploading data. Through standard work procedures, few employees report to have gained tacit knowledge - which data is appropriate, how to upload, etc.

"Every upload goes through [my] unit because we have become experts in how to technically publish data. We were quite early to start sharing data because we provide X services" - E4

6. Analysis

This section interprets and analyzes the empirical findings through the application of theoretical framework to answer the research question. A theoretical framework currently available for innovation adoption at the organizational level was presented in Figure 1. While grounded inductive analysis does not project theory upon data, it also does not exist in vacuum, estranged from theory and academic discussion either (Silverman, 2011). Hence, in order to expand the analysis, the empirical findings along with the selected theory will be iteratively constructed upon to re-build the model.

Figure 3 has its basis in the empirical findings from the study along with the primary model proposed by researchers in the Theoretical Framework. From Duhamel's Integrated TOE framework, no box or phenomenon have been removed but the arrows and location of factors have been changed. Each box represents a 'factor' in the innovation adoption process. What appears above the dashed line are third-order codes or factors that together make up the fourth-order code 'Top-Down'. Factors that appear below the dashed line are factors that have been classified under the third and final fourth-order code 'Bottom-Up'. When the two fourth-order codes are considered to have 'merged' or 'met' in the middle, then innovation adoption is considered to have materialized. What 'meeting' in the middle exactly entails or the phrase represents will be explained further below.

The title within each box thereby represents a third-order code and the bullet points under it are the second-order codes that build it. Open codes that construct the second-order codes are not represented in the model. Open codes were derived from only data. Second-order codes were derived based on data and theory, an iterative process that has resulted in some second order codes being titled the same as ones identified by Duhamel et al. (e.g. 'Political Leadership'). Other second-order codes, however, were given titles by the authors (e.g. 'Transparency and Credibility'). All third-order codes utilize Duhamel et al.'s diction (e.g. 'Perceptions of External Pressure'). Fourth-order codes are then titled by the authors.
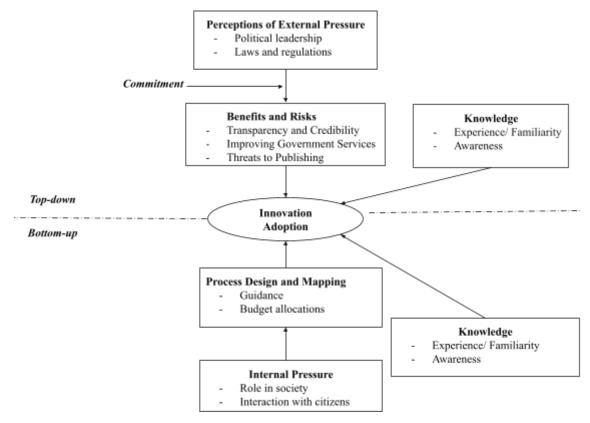
Figure 3. *Innovation adoption process in the Public Sector (Batbaatar & Obradovic, 2023).*

6.1 Analysis of findings through refined theoretical framework

The refined theoretical framework has been proposed above. The empirical findings will be analyzed through the latest version of the theoretical framework and will serve as a model of analysis. The direction will be explained based on the order in which they are unfolding within the model (arrow direction). The section will conclude with the analysis of how these two directions simultaneously are described to be necessary for innovation to be adopted.

Some respondents state that there are strong grassroots efforts or desires to adopt the innovation, but active adoption is stagnating because of lack of top-down push. Some respondents call ad lib for politicians' attention and awareness which they perceive to be the necessary next step. They, somewhat inconsistently, also state that the initiative began with legislation, a form of top-down push. Others perceive a clear and strict pressure from the top and the reason the innovation adoption is not complete is because of lack of willingness from the desk employees who only ask "What's in it for me?" (E12). Hence, when such bottom-up and top-down push meet, then innovation adoption is predicted to materialize. As evident in this case study, the adoption process is ongoing but has not reached tangible results (majority of the interview responses reveal that currently, few datasets are published). Consequently,

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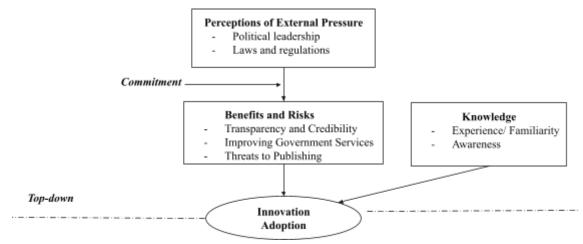such differing perspectives, both valid and simultaneously true, are therefore presented in the figure.

Figure 4. *Top-down direction of innovation adoption process*

6.1.1 Top-Down

Perception of external pressure is presented as the first factor in the model. This factor reflects the top-down leadership and governance in the empirical findings. Formal commands or informal pressure are generated from the EU and Riksdag. The government has the power to delegate the responsibility and order the various public sector organizations to implement it. This takes shape through laws and regulations that outline the specifics of what is and is not allowed. This makes it clear to understand how to work with the new processes and allows employees to act accordingly. Hence, external pressure in the forms of (i) clear guidance and (ii) allocation of budgetary resources is necessary.

When laws and regulations are in place, public servants report to make a *commitment* to include the new processes in their current work processes. The external pressure therefore lays the foundation and propels the organization to commit to adopting the innovation. Commitment describes the decision to adopt the innovation but commitment alone does not directly yield complete adoption. 'Commitment' is not a code identified in the empirical findings per se but rather presented in the model as an indicator for where formal decision-making occurs.

Proceeding lower down in the model, perception of external pressure leads to the evaluation of the innovation's *Benefits and risks.* Alongside *Benefits and risk,* the

Knowledge factor resides in the model. These two factors, serving simultaneously, then lead to the partial innovation adoption.

As revealed in the interviews, the interviewees are cautious and hesitant as they grasped the notion that their decisions and actions directly impact the citizens. Followingly, public organizations' assessment of innovation and its risks results in a very cautious implementation. Therefore, public servants report to benefit from clear guidance in order to feel reassured and encouraged when performing actions that are part of the implementation of the adoption - routinization of the additional step in which after creating data to perform their role, upload the data sets to the portal.

Subconclusion: The perception of external pressure leads to commitment to adopt the innovation. Followingly, it initiates the evaluation of benefits and risks, and together knowledge, collectively compose the top-down direction of the innovation adoption process.

Figure 5. *Bottom-up direction of innovation adoption process*

6.1.2 Bottom-up direction

Internal pressure is presented as the first factor in the bottom-up approach (lowest box in the model). This factor reflects bottom-up leadership and governance in the empirical findings. These grassroots efforts emerge from the public servants who receive the demands from the citizens and private enterprises for various types of data. This demand then influences the public servants to utilize the data portal by uploading data there perhaps as a mechanism to reduce the number of direct requests they receive for 'popular' data sets. Such actions not only contribute to improved government

services by increasing efficiency as rather than addressing each request, the public servants upload data sets to the portal at once, but also contribute to the transparency and credibility of the government. Empirical data has also shown that besides internal awareness of public servants to adopt new processes, additional awareness is created from the pressure of the private sector and citizens who request the data.

Furthermore, as seen from the empirical data, *Knowledge* factor as described above affects the bottom-up adoption process of innovation and entails two aspects: experience and familiarity of public servants with the new process which has been identified in the data as guidance resources and previously mentioned awareness of the of the importance of improving government. Familiarity and experience are crucial for public servants to implement the new process. Pure understanding and agenda setting for the new process to be implemented is not enough. This is reflected in the process design and mapping factor.

Looking up in the model, *Process design and mapping* is the factor in the bottom-up direction of innovation adoption that allows new processes to be adopted. In order for the new processes to be implemented, guidance and resources are needed. Certain budget allocation is necessary for the new processes to be adopted and those efforts are possible through the top-down regulations that are happening simultaneously. With the clear guidance of the process and budget resources, new process design and mapping are adopted to fit the innovation.

When these new processes are being mapped out and included in the process design, they will either replace previous processes or become an additional task. Due to already hectic schedules, public servants besides having the awareness of its benefits need to be confident that the new processes are safe to be implemented and would not expose their organization nor citizens to any threats. Due to this inherent cautious approach to new processes, designing and mapping out the process can be time consuming.

Bottom-up direction of innovation adoption is seen through three interconnected factors of internal pressure, process design and mapping, and knowledge. Internal pressure and awareness component of knowledge factor together act to influence the process design and mapping. With the component of familiarity and expertise the bottom-up direction of adoption is completed.

Subconclusion: Bottom-up direction begins with internal pressure and awareness of the importance of change. Followingly, the process design and mapping of work takes place, leading to innovation adoption.

6.2 Analysis conclusion

Empirical findings were used to understand the process of adoption of innovation in an organization. Comparison of the empirical data with the previous theory resulted in refinement of the model as well as confirmation of previously identified factors.

7. Discussion and Conclusion

7.1. Discussion

Through this exploration of how government employees make sense of the innovation, a handful of noteworthy findings have been identified.

The first finding concerns three different perceptions of employees regarding open data innovation. For several employees that perceive themselves as public servants performing their civic duty, making intimate sense of and deciding to adopt the innovation was remarkably smooth. They perceive open data as the natural next step in public value-creation. Findings support that public servants are aware of the impact of the public sector on the economy (Potts, 2010) and that sharing data provides opportunity for further innovation (OECD, 2013). For the second type of employees, their willingness to adopt open data is not driven by economic utility or potential gains. Instead, their adoption of open data is solely motivated by a dedication to upholding democratic ideals. This corresponds to one of the most mentioned benefits of open data across research in the field (Zhenbin, 2020). Thirdly, for employees of municipalities or agencies that were perceived to be corrupt by its citizens, motivation to publish open data was derived from seeing it as a tool to increase credibility and respect, which align with driving factors identified by other scholars (Janssen et al., 2021).

These three types of employees actively involved in implementing data together constitute the mobilized grassroots efforts that have been identified. Such interviewees call for additional legislation and politicians' involvement. Succeedingly, the second finding concerns the expressed need of government employees for *more* political oversight and pressure. Rather than saying that innovation success will be claimed by politicians (Potts, 2010), public servants call for increased involvement. Faced with their heavy workload, respondents point to lack of penalty and incentives as well as guidance as to why open data is not prioritized despite seeing its value.

When prompted, they point to the lack of general awareness and support from colleagues within their own organization and other organizations. Hence, mobilization of local support, more bottom-up efforts is necessary. More concentrated and streamlined grassroots mobilization is needed as empirical findings suggest that due to the decentralized nature of the Swedish government, it is essential for each agency and municipality to formulate their *own* strategies in implementing open data. Therefore, political leadership at the local level -

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meaning in each municipality and agency - is identified to be crucial in ensuring adoption of the innovation.

The third finding concerns the need for the two varying perspectives - more top-down direction and bottom-up efforts - mentioned above to merge for the innovation to be adopted. This empirical finding shows support for OECD (2016) recommendations on how to work with open government initiatives. In other words, for public servants to see the value in adopting the innovation through self-motivation, and for the top-down push to reach the employees, through introduction of incentives, penalties, and guidance, then innovation will be adopted, the interviewee findings concluded. Findings do not support claims that only top-down or bottom-up efforts will lead to adoption - both must 'meet in the middle' per se.

At the onset of the study, the authors read theories on adoption of innovation by an organization along with studies on open government in general. Interestingly, however, findings point to discussion on intrinsic and extrinsic motivation by Ryan and Deci (2000) hitherto not considered by the authors. Current conversations on motivation support the findings of this study as it affirms extrinsic and intrinsic motivation to be not mutually exclusive but together bud actualization (Esteban et al., 2023; Flø et al., 2020).

7.2. Answer to the Research Question

The research question in this study is *"What are factors that affect adoption of innovation in the public sector?"* Through the empirical findings that were borne as a result of procedures laid out in the methodology, the answer could be summarized as *"For innovation in the public sector to be adopted, grassroots efforts must meet top-down directives, and vice versa."* Additionally, based on the empirical findings, a developed framework is proposed to illustrate the findings.
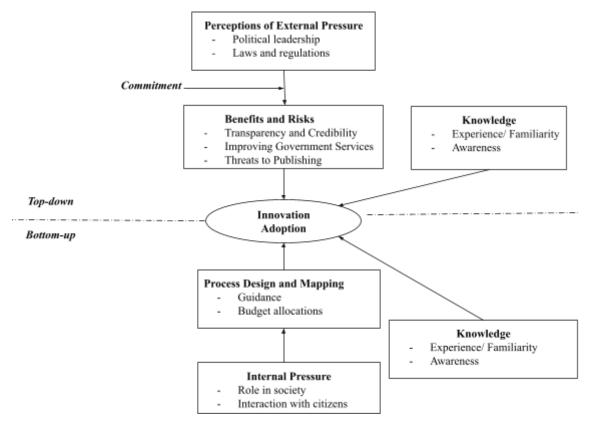
Figure 3. *Innovation adoption process in the Public Sector (Batbaatar & Obradovic, 2023)*

7.3 Discussion on Limitations

The case study selected to answer questions on innovation adoption is an ongoing phenomenon currently unfolding at a somewhat irregular progression. Hence, particularly given the interpretive paradigm selection that explores the sense-making aspects of employees, the insights are a representation at that moment in time. As the process is ongoing, the beliefs of the employees and therefore findings of the study may be suspected to change once the adoption is considered to be complete.

7.4. Contribution of the Study

7.4.1. Theoretical contribution

The latest development of the TOE framework for innovation adoption by an organization from the 1990s was further developed in this study. It confirms the findings of Duhamel et al., which highlights the previously underexplored importance of 'process design and mapping' in innovation adoption. Moreover, it introduces the element of Internal Pressure. Interviews with employees reveal that in addition to the perceptions of external pressure, preceding that, there is an additional aspect: grassroots

efforts to implement, which must then be further supported through top-down direction. Hence, the restructuring of the existing framework and an additional element are the theoretical contributions of the study. As empirics and analysis reveals, the motivation for such a theoretical contribution is well motivated because it improves transferability capabilities and enhances complexity and interconnectedness of the phenomenon.

7.4.2. Policy contribution

As touched upon in the Introduction, public sector innovation from an organizational behavior perspective is incredibly important as it directly affects the public value-creation of the government, whether it is to improve existing services from providing educational opportunities to mobilizing the workforce to mission implementation. Hence, the findings of this study which address how government employees perceive their role in contributing to society and the government's place in the socially constructed realm, can provide insights into *how* certain types of innovation can be introduced and continuously emphasized to people to ensure adoption for policy-makers. Thought to be of technical nature, adoption of this innovation has been revealed to require more than simply learning the technical skills, however. Hence, findings of the study, one that identifies the factors necessary in innovation adoption by an organization from a management perspective, is suspected to be generalizable to other types of innovation.

7.4.3. Future research

A post hoc study may occur once this innovation is considered to be complete. Completion in this case can be defined as employees having routineized the procedure of creating data and uploading it directly. At this stage, the employee may have either grasped open data in terms of what is expected of them and are able to do so under enabling conditions. Lastly, a review of this case study through an open-innovation perspective may yield interesting findings. Such a study would view each agency and municipality as an agent in a network and explore the effect that relations would have on the innovation adoption process.

7.4.4. Transferability of the study

Qualitative research using semi-structure cannot be used to make generalizations about the entire population and the findings are suggested to be of limited scope (Saunders et al., 2007; Bell et al., 2019). The framework developed in this study, despite limited

generalizability, has potential for transferability if the underlying assumptions of the model exist in the context on which it is applied to. Firstly, the model is developed on the assumption that the individuals, public servants, driving the change are connected to the roles they hold and that their motivation is intrinsic and stems from comprehending the broader societal impact their work contributes to. Secondly, there exists external pressure for change to occur, which establishes the agenda and the legislation serves as a tool of governance for innovation in a form of extrinsic motivation. Thirdly, the setting studied here has been at a state organization and hence for the findings to be transferable, the other organization(s) should perhaps be structured similarly. Ultimately then, the implications of this study can be applied and further tested in contexts where individuals adopting change are internally motivated by the relevance and impact of their work and with the presence of external pressure to adopt the process.

7.5 Conclusion

This research has resulted in mapping out the factors that take place for innovation adoption to occur in the public sector. Analysis of the findings led to the construction of a theoretical framework to support adoption process clarity. The wo identified directions of factors are grassroots efforts and top-down directives. Each direction is constituted of factors that all together lead to adoption. Their coexistence is crucial for the innovation adoption process. Based on this, therefore, when grassroots effort and top-down directives exist simultaneously, the innovation adoption process is realized.

This thesis addresses UN SDG 9. Not only is open data a process innovation itself, it also has potential to further foster innovation and economic development.

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Appendices

Appendix I Email sent to Prospective Interviewees

(excluding the short background and picture of authors)

Subject: Join our Collaborative Research Effort

Hello,

<u>Who we are</u>

We are third-year students at the Stockholm School of Economics (Handelshögskolan i Stockholm) BSc. program in Business and Economics. As part of our degree program, we are writing our thesis this fall semester of 2023. The thesis is to be completed by December 5. We can then share our findings with you.

<u>What we want to do</u>

Our chosen topic is on public sector innovation and our research question is "What are organizational factors for adopting innovation?" We are looking at Open Data as a case study and aim to add to existing knowledge on the adoption process of innovation in the public sector.

<u>How you can help</u>

We hope to conduct 45 minutes to one hour interviews with you digitally. It requires little to no preparation beforehand from you. It is completely alright if your organization is still at the initial stage of adoption. This is a difficult process and among many tasks that your organization is working on. Our aim is not to grade the success rate but rather to understand the process.

Best regards,
Sofia Obradovic and Maral Batbaatar

If you have any questions, you can reach out to us at:
25396@student.hhs.se 25378@student.hhs.se

Appendix II Information about the interviews

No.	Code Name	Time	Date	Place
1	E3	42 min 35 sec	2023-09-22	Virtual meeting
2	E2	55 min 48 sec	2023-09-25	Virtual meeting
3	E11	48 min 37 sec	2023-10-03	Virtual meeting
4	E4	54 min 49 sec	2023-10-04	Virtual meeting
5	E9	48 min 30 sec	2023-10-04	Virtual meeting
6	E1	1h 2 min 3sec	2023-10-04	Virtual meeting
7	E7	53 min 5 sec	2023-10-04	Virtual meeting
8	E13	46 min 25 sec	2023-10-06	Virtual meeting
9	E14	1 h 1 min 57 sec	2023-10-09	Virtual meeting
10	E5	57 min 6 sec	2023-10-19	Virtual meeting
11	E6	59 min 53 sec	2023-10-30	Virtual meeting
12	E16	1h 2 min 20 sec	2023-10-30	Virtual meeting
13	E17	49 min 13 sec	2023-11-01	Virtual meeting
14	E7	1h 0 min 8 sec	2023-11-01	Virtual meeting
15	E8	48 min 22 sec	2023-11-02	Virtual meeting
16	E10	1h 3 min 22 sec	2023-11-06	Virtual meeting
17	E3	52 min 0 sec	2023-11-06	Virtual meeting

Maximum   1h 3 min 22 sec
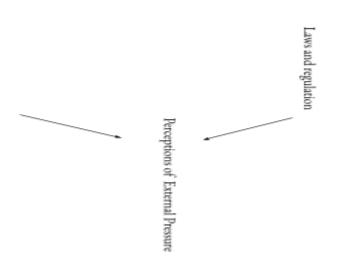Minimum   42 min 35 sec

Average time   54 min 30 sec

Appendix III Overview of open codes and their integration into 2nd and 3rd order codes

So of course it started with the regulation that came from the European Union

There was also tracking done by the European Commission, so they try to monitor what was going on and how the countries performed.

Every public actor targeted by the law should publish their data

Having requirements by law is probably a good start

EU countries should share data and that's really a directive from the EU

Reason is that there is a law saying that you need to share data

So there are a lot of documents that say they should collaborate

So it went for a couple of years and some government start sharing the data and last year the regulator said they need to make an even better law area

Today is quite clear that if you're uploading data there's a law saying that you should upload it to data

Because of the pressure from the EU and from the national level that they need to be very quick and much better

You can do just what's in the law

They are obliged by regulation

There is a new change in the regulation because of the EU directive exactly around a year ago

It's the law, but there's no penalty if they don't do it.

Data is public data by laws and regulations

They think it all started on a national level, it was from the Swedish Government.

The driving force there is the EU and the national saying like you need to work on this,

Both the national and EU regulation says that they should provide their data as open data.

Simply because they have to, according to regulation

They would have advocated and pushed more in the management group

The conditions to clarity, it's always top management that they need to create the framework for that

What is needed is for politicians to decide and say that we are all supposed to work with open data, no question about it.

We have the political goals that we should provide better services

We don't have that goal from the politicians who are driving the municipality and funds for different initiatives

It's also in some cases, political issues, political decisions in order to that we should be perhaps more more giving perhaps

The politicians said that they have to abide to this law

It is often not having the means to prioritize something, it has to do with what the government

They were was struggling because with the higher level of organization with the managers. They didn't have a knowledge and wasn't on their fo

Their management not prioritizing this

Management finally beginning to "see the light"

They had to address the leaders of those departments and and and the sections because they are the ones that have the money.

Make the leadership take strategic decisions in time more than to describe it as "if we don't come now, we will never get on the train."

Yeah, it's very easy because the most important job for top management, both in the private sector and in the public sector, is to create great con works.

top management and the manager, they are there are actually responsible for strategy

Management is not prioritizing it is because they did not have a law

Stay within the organization so that they have ownership and have strong leadership role

For some departments it's really been easy because the one in the top has really understood that open data is the way to go.

The bosses in the higher places start to realize, that they have to deliver on open data and are supposed to use open data and share all the data th

The new boss doesn't understand open data and dont see the interviewee POV

Today when the politicians, bosses talk about open data, they think they can't share the open data.

Laws and regulation

Political leadership

Perceptions of External Pressure