External factors and their influence on Green IS adoption

A qualitative study of 4 Swedish municipalities

Kandidatuppsats 15 hp, kurs SYSK02 i informationssystem

Författare: Azra Balic
               Ana-Carolina Donetto De Lima

Handledare: Mirella Muhic

Examinatorer: Paul Pierce
               Björn Svensson

External factors and their influence on Green IS adoprion: A qualitative studie of 4 Swedish municipalities

Författare: Azra Balic, Ana-Carolina Donetto De Lima

Sammanfattning (Max. 200 ord):
The literature within Information Systems has approached Green IS from different perspectives and using different theoretical frameworks. The present paper analyzes the correlation between the existence of external pressures and Green IS adoption in the case of Swedish municipalities. A qualitative research was conducted, with the performance of in-depth interviews with representatives of a 4 Swedish municipalities. The main purpose here is to get a better understanding about how municipalities experience external pressures and how they perceive the question of the influence of external pressures over Green IS adoption. An additional purpose is to understand whether or in what ways municipalities can take advantage of external pressures for improving their strategies towards Green IS and sustainability. The results show that, for the majority of the respondents, coercive and mimetic pressures (respectively, laws and regulations, and the fact that other public organizations have already implemented Green IS) play a crucial role in Green IS adoption. Furthermore, also in accordance to the majority of the respondents, the same external factors are taken into account when municipalities resonate about possible areas of improvements in their strategies - not only towards the adoption or use of Green IS, but even towards sustainability in a broader perspective.

– 2 –

Acknowledgments

We would like to thank our supervisor Mirella Muhic for her kindness and all the assistance provided to us. We would also like to thank Odd Steen for the insights on how to improve our paper. We would like to thank the IT directors from Eslöv, Haparanda, Lund and Malmö for their willingness to participate in our research, and the kindness showed to us.

We are also grateful for all the knowledge acquired during these three years of bachelor program. Finally, but not less important, we would like to thank our families and boyfriends for the support provided during our studies and especially in hectic periods, such as during the writing of this bachelor thesis.

Glossary of Concepts

This section regards the definitions of some terms that appear later on, in the answers of our interviewees, who are the IT directors of the municipalities under study here. We provide therefore a brief definition of those terms whose meaning may not be clear for the reader.

Digital Society - It regards improving services in different areas, such as Health Care and other services aimed at the citizens, for instance, by investing in "digital tools". (European Comission)

Digitization - It is when information, in different formats, assume a digital format.(Rause, 2007)

ECO-Municipality - It regards municipalities which follow sustainable guidelines and principles and are concerned for implementing them in the municipalities' operations. (James et.al., 2017)

Environmental Scanning (Omvärldsanalys, in Swedish) - It regards the activities performed by organizations in order to gain a better understanding of its limitations and opportunities; which assists organizations when identifying their goals and working on their strategies to reach them.(Marketing and Strategy)

Green Digital Charter - It regards an incentive to cities to increase their cooperation with one another in order to be able to reach the goals from the European Union regarding sustainability. Malmö is one of the Swedish cities involved in this project. (Eurocities, 2016)

Internet of Things - Briefly said, it regards the connection of objects to the internet, such as monitoring devices. (Business Insider, 2016)

ISO 14001 - It provides assistance to organizations on how to improve their sustainability, by pointing out what requirements one should have on a management system to ensure that it is environmental friendly. (Naden, 2015)

LOU (Lagen om Offentlig Upphandling) - It is a law that regards questions related to the purchase of services and products by government representatives. This is therefore related to the public sector. (Sveriges Rikes Lag, 2016)

LundaEko II - According to the Lund Municipality's website, it regards a program towards ecological sustainable development, also specific to the municipality and Lund region. (Lunds Kommun, 2017)

LundaMaTs - According to the Lund Municipality's website, it is a document that provides guidance when working with questions related to transport and traffic, especifically in Lund. It regards environmental friendly transport systems. (Lunds Kommun, 2017)

SKL (Sveriges Kommuner och Landsting) - It is an organization whose purpose is to provide assistance to municipalities and promote cooperation and knowledge exchange between their representatives. (Sveriges Kommuner och Landsting, 2017)

SOI (Sveriges Offentliga Inköpares Årskonferens) - It is a conference where municipalities' representatives, among others, can participate and gain more knowledge and competence on, for instance, how purchase works in the public sector.(Sveriges Offentliga Inköpare, 2017)

TCO Certified - It is a certification for IT products that confirms that a given product is sustainable in its lifecycle. (TCO-development, 2017)

Virtualization - It is when resources, storage device, among other things, receives a virtual version.(Rause, 2016)

Innehåll

Figurer

Tabeller

1 Introduction

The fact that organizations have been invested in green practices is not a new phenomenon. Concerns about how to reduce the impacts on the environment and to produce value for society, were already present in the business world in the 20th century (Dao et.al., 2011). Needless to say, the aforementioned concerns continue being important in nowadays society. Profit-oriented organizations cannot only consider profitability when investing in products, but rather; they have to consider the environmental and social impacts that are likely to be caused (Dao et.al., 2011). Accordingly, activities performed by organizations are expected to be positive and environmental-friendly (Dao et.al., 2011). Working in a sustainable way is essential, regardless of what kind of organization it is or the products and services provided. Organizations which are concerned with working towards sustainability tend to interact with each other and hence have as partners organizations which are also concerned with this question (Dao Dao et.al., 2011) In this context, it is important to invest in sustainability on the level of information systems as well. It is argued that Information Systems have the potential to contribute to an organization's sustainable performance (Bengtsson, Ågerfalk, 2011). Information systems can assist organizations in monitoring their internal and external performance (regarding for example, financial and environmental questions) and, this way, the impact of their activities in the environmental, social and economic realms (Dao et.al., 2011). This way, investing in Green Information Systems is considered appropriate by many organizations (Idemudia, Raisinghani, 2015). Green IS is regarded as a means, or even as a solution to decrease environmental degradation (Brauer et.al., 2015).

1.1 Background

As previously mentioned, organizations continue being influenced by their environment in addressing the question of sustainability and even in adopting Green IS. Accordingly, adopting Green IS comes not only from internal factors, such as staff's willingness to adopt it, but even, and perhaps mainly, by the existence of external factors from different realms. As it will be analyzed in the following sections, there is a straight correlation between Green IS adoption and the influence of external pressures on organizations. Academic papers have addressed the influence of external factors in private organizations and have discussed whether organizations from the public and private sectors are subjected to the same kind of external pressures regarding the adoption of Green IS (Green Information Systems). However, the relation between external pressures and Green IS adoption in the public sector has received less attention by researchers than the same relation in the private one. Even less attention has been given in how municipalities experience those pressures in the adoption of the aforementioned information systems. Municipalities are regarded as an organization which is both influential and influenced by its environment; influencing the creation of policies and standards; and, at the same time, having to implement rules and to follow standards themselves (Bengtsson, Ågerfalk, 2011). It is argued that the use of information systems are beneficial for municipalities and organizations, in general, since it assists them in the improvement of their sustainability performance (Bengtsson, Ågerfalk, 2011).

F. Bengtsson and P.J. Ågerfalk (2011), investigated the aspects that influence Uppsala Municipality when it comes to their involvement with sustainable practices and their use of information

systems. The authors address both internal and external aspects, such as respectively, willingness on the part of the organization to invest in sustainability initiatives, and, on the other hand, their necessity to adhere to regulations (Bengtsson, Ågerfalk, 2011). As previously mentioned, even though F. Bengtsson and P.J. Ågerfalk (2011) address municipalities, they do not focus on external factors, which is the main aim of the present paper. Their empirical study is of great interest and has served as a starting point for the current paper, as it will be better explained in the following section.

1.2 Problem Discussion

When searching for possible problematics within the field of Information Systems to be further investigated, we realized that the number of academic papers focusing upon Green IS adoption by private companies or profit-oriented organizations, outnumber those addressing the same topic but in the public sector. We became therefore interested in investigating Green IS adoption by public organizations. When it comes to our interest for addressing municipalities, more specifically, it came from the article entitled *Information technology as a change actant in sustainability innovation: Insights from Uppsala*, written by F. Bengtsson and P.J. Ågerfalk, in 2011 - which was mentioned in the previous section. Their paper investigates the factors that either facilitate or pose an obstacle to the work towards sustainability in the Uppsala municipality. In this article, it is argued that municipalities are also concerned with Sustainability, investing in green practices (Bengtsson, Ågerfalk, 2011), and see in the use of information systems a means to increase their sustainability performance (Bengtsson, Ågerfalk, 2011). F. Bengtsson and P.J. Ågerfalk (2011) state that *municipalities are not so addressed in the Information Systems literature and hence encourage researchers to investigate how other Swedish municipalities, and even municipalities abroad, relate to sustainability initiatives and information systems. It is also encouraged the use of a different theoretical framework from the one used in their article*, namely Actor Network Theory (ANT). Therefore, the "problem area" here is the argued necessity to produce more papers about this topic, such as empirical studies, and, this way, contribute with the existing literature in the field of Information Systems. It is worthwhile mentioning that, in our case, we adopt the term "Green IS", since it is how the majority of the academic papers used in the present study address information systems which contribute to sustainability, decreasing environmental impact. In the next subsection, our research questions will be presented.

1.3 Research Question

The questions approached in this thesis are the following:

1. In what ways does the existence of external pressures, such as regulations and the influence of other organizations influence municipalities when it comes to their decision regarding adopting Green Information Systems?

2. In what ways can municipalities take advantage of external pressures when building their strategies regarding Green IS?

In the following subsection, the aims with this research will be presented in more detail.

1.4 Purpose

The purpose of the thesis is to investigate how the municipal sector in Sweden experience external pressures regarding the adoption of Green IS. The main purpose is to analyze to what extent different kinds of pressures influence municipalities, if they experience that all external pressures have the same impact on them or if some have more impact than others; and even if there are other external pressures than the ones identified in the academic literature. It is worthwhile mentioning that Normative, Mimetic and Coercive, used in the present paper, are terms associated to the so-called Institutional Theory (AlKalbani et.al., 2016; Chen et.al., 2011), which is the theoretical framework used here. Briefly said, normative pressures regard standards and norms, while mimetic ones refer to an organization's practice of following in the footsteps of other organizations considered successful. Coercive, in its turn, refer to the existence of laws and regulations which are supposed to be taken into consideration (AlKalbani et.al., 2016; Chen et.al., 2011; Deng, Ji, 2015). It is argued that those pressures are key factors that make organizations adopt Green IS (AlKalbani et.al., 2016). The aforementioned terms will be better analyzed later on, under the subsection regarding "Coercive, normative and mimetic pressures". Furthermore, the thesis has also the purpose of identifying if and how the above mentioned external pressures are used by the municipalities in question as a strategy to become more sustainable, or if they are incorporated in their internal strategy towards Green IS. The aim is to identify in what ways external pressures can be used strategically by municipalities and by doing so, to assist other municipality which may not have a clear strategy towards Green IS.

1.5   Deliminations of the study

When it comes to the delimitations of the current study, the study addresses only Swedish municipalities. It addresses the perspectives of the municipalities Malmö, Lund, Eslöv and Haparanda. Furthermore, it is worthwhile mentioning that only one representative of each municipality were interviewed, more specifically, those in charge of IT related questions.

As it will be better explained in the "Method Section", a great number of municipalities had been contacted by email and only a few of them showed interest for participating in this study. Therefore, only a few municipalities are addressed here, which implies that the findings cannot be generalized, thus not showing how all Swedish municipalities behave towards aforementioned external pressures and Green IS. Nonetheless, it is possible to make a comparative study on how those municipalities behave in this context of external pressures; which in itself is already a contribution for existing literature, since there is not much study on this topic.

2 Literature Overview

In this section, there will be an overview of how academic papers have addressed questions related to Green IS, such as its definition, its positive and negative aspects, and implementation. Furthermore, it will be briefly discussed how the academic literature addresses organizations and their relation to Green IS and external pressures. The questions regarding the relation between external pressures and Green IS adoption will be further considered in the section concerning the theoretical framework since the aforementioned relation External pressures - Green IS adoption - Organizations become clearer once the theory "Institutional Theory" has been presented.

2.1 Green Information Systems (Green IS)

According to Corbett and El Idrissi, (2014), Green IS plays an important role in the current society, known as "Information Society"; being regarded as the means to face environmental issues. In the beginning of the 21st century, the relationship between IS (Information Systems) and sustainability were not seen as obvious. By then, some researchers had their doubts if approaching sustainability was important (Corbett, El Idrissi, 2014). When Green IS was coined, researchers willing to investigate the relationship of Information Systems and sustainability received some incentive. According to Loeser (2013), the concept of Green IT was popular among researchers in the years 2009 and 2010. However, its popularity has decreased, and more attention has been given to Green IS, considered by some researchers a more encompassing concept (Loeser, 2013). Green IS gained legitimization when important journals in the field of Information Systems gave more importance to this topic by investing in publications regarding Green IS (Corbett, El Idrissi, 2014). Accordingly, Silvius (2012) argues that Sustainability has received increasing attention by Information System literature, which is positive given the Information System's capacity to contribute to increase one's sustainability practices. It is worthwhile mentioning that publications regarding Green IS can even be found in literature of other disciplines, being therefore not limited to Information Systems articles or journals (Cooper et.al., 2014). It is argued that many workshops and conferences have focused upon approaching Green IS and its power to improve both society and businesses' eco-sustainability (Andersen et.al., 2016).

2.1.1 Defining Green IS

It is argued that there has not been reached a consensus yet on what Green IS means and its difference with Green IT. The definition of Green IS is vague (Brauer et.al., 2015) and cannot be easily defined (Loeser, 2013).While for some, Green IS is regarded as synonymous of Green IT, for others, Green IT is part of Green IS (Deng, Ji, 2015; Recker et.al., 2014; Oinas-Kukkonen, Shevchuk, 2016). Green IS is concerned with how disposal of hardware can influence the environment, the level of energy use of IT; these aspects show that IS also encompasses an "IT-level". On the other hand, the concern for reducing greenhouse gases is an illustration of the Green IS' "systemlevel" (Grant, Marshburn, 2014). In accordance to C. Grant and G. Marshburn (2014), researchers usually focus on one of these areas instead of addressing all the aspects related to Green IS simultaneously. For these reasons, in this paper we adopt the definition that Green IS is an encompassing term, including Green IT (Deng, Ji, 2015).

2.1.2 Positive aspects of Green IS

According to Silvius (2012), Green IS can assist in the improvement of one's business processes. In this way, Information Systems can assist organizations in improving their internal processes, while making them more sustainable (Silvius, 2012). Brooks, Wang and Sarker (2013) also regard Green IS as a means to improve an organization's' business processes with the purpose of reducing energy use and this way, the impacts in the environment. Besides decreasing energy use, with Green IS organizations can even get a more efficient supply chain, having all the important data available online and hence decreasing the necessity to print documents (Idemudia, Raisinghani, 2015).

Green IS can assist organizations in reducing pollution - such as the emission of so called greenhouse gas (Brooks et.al., 2013) - and to make them more sustainable. Additionally, it is useful when handling toxic materials, it can improve energy distribution and consumption and business processes. Besides, the incorporation of Green IS can improve recycling and information monitoring (Brooks et.al., 2015), and assist in handling data concerning one's sustainable performance (Bharati et.al., 2017). Furthermore, green IS assist in the monitoring and management of equipment, among other aspects (Chowdhury, 2012). Moreover, Green IS, or its technology aspect more specifically, have a positive impact in the lifecycle of equipments (Idemudia, Raisinghani, 2015). Adopting and implementing Green IS can be a means for organizations to become more innovative (Sun et.al., 2016) and greener (Cooper et.al., 2012). In the light of this argument, Green IS is considered a resource, assisting organizations in becoming more environmental friendly and even in improving their branding (Sun et.al., 2016). This is done by providing technical support to the latter. In this case, IS is regarded as a "hard resource" (Sun et.al., 2016). With Green IS, not only business processes but even the final products become more sustainable (Loeser, 2013). Accordingly, Corbett and El Idrissi (2014) argue that by incorporating it, organizations can behave in accordance to norms and assume more responsibility towards the environment and hence a more environmentally friendly behavior.

Green IS is regarded as a phenomenon with many dimensions (Brooks et.al., 2013), being therefore not limited to the question of energy efficiency. It can assist organizations in improving their eco-effectiveness (Taha Ijab, 2011), and in better protecting the environment (AlZu'Bi, 2016). Given its concern for decreasing environmental impacts, which is an issue for societies in general, Green IS is seen as a social innovation and as a solution for the aforementioned issue (Bharati et.al., 2017).

It is argued that the outcomes of Green IS are experienced in varying levels, benefiting both the individuals and society as a whole (Brooks et.al., 2015). It implies that although Green IS are implemented by organizations and hence are there to serve their purposes and achieve their goals, the benefits are not limited to those working for these organizations, but are extended to the society in question (Brooks et.al., 2015). This way, it is argued that Green IS has a positive impact on the organizational environment, the individuals and society (Brooks et.al., 2015). It can assist both organizations and society in becoming more sustainable (Bharati et.al., 2017). Furthermore, it is argued that information systems can be used to improve the quality of services aimed at citizens, by for example, offering more services and making them more accessible to that target group (Brauer, Kolbe, 2016). Accordingly, Silvius (2012) points out that Information Systems, in general terms, can contribute to bringing communities, regardless of their geographical locations, closer to one another and this way, facilitate their interactions and furthermore, it can provide them with more access to information and hence facilitate the distribution of information. It is worthwhile mentioning that Green IS' positive social impacts were identified

by the United Nations (UN) already in 2001. It was attributed to Information Systems the capacity to contribute to society and to facilitate communication and hence information exchange (Silvius, 2012).

2.1.3 Negative aspects of Green IS

It is worthwhile mentioning that the implementation of Green IS, while beneficial for organizations, may have its complexities, being both costly and difficult (Brooks et.al., 2013). Additionally, it is arguable that Green IS always lead to economic gains, since it may not reduce costs for organizations (Boudreau et.al.,) and customers may need to pay more for products (Brooks et.al., 2013). Accordingly, C. Grant and G. Marshburn (2014) argue that Green IS may represent increasing costs and require the acquisition of additional competences and modification in the organization's processes. Transition costs can be higher than the expenses for maintaining the systems currently under use; being even uncertain if the transaction costs will be reduced later on. Argument which is not a consensus among researchers, though. Silvius (2012), for example, defends that Information Systems lead necessarily to decreased transaction costs. Additionally, Silvius (2012) argues that the use of Information Systems may require increasing consumption of energy and even produce waste that are considered dangerous (Silvius, 2012). In a similar way, C. Grant and G. Marshburn (2014) argue that it is not evident that Green IS brings more profit to organizations or make them more efficient, being not even clear if Green IS has a positive impact in the environment, as many argue. Additionally, it can take a long time until Green IS can becomes used throughout an organization (Cooper, et.al., 2012), which may be seen as a drawback.

2.1.4 Implementing Green IS

In order to incorporate Green IS, organizations have to carry out a process with varying stages. Firstly, in the so-called "Initiation Stage", the system goes through an evaluation. Afterwards, in the "Adoption Stage", it is reached a consensus on whether the system will be incorporated. Later on, in the "Routinization Stage", Green IS is finally implemented. Routinization may require behavioral changes on the part of the organization's personnel (Brooks et.al., 2015). The existence of internal resources are regarded as important especially for the assimilation and routinization of Green IS (Lei, Ngai, 2012). Accordingly, Brooks, Sarker and Wang (2013) based upon Lei and Ngai (2012) state that Green IS incorporation is a process with the aforementioned stages, starting with "initiation" and finalizing by "routinization". It is argued that the adoption of Green IS should be analyzed taking in consideration the context in question, since the aspects related to its implementation, separately, may have different weights for different organizations and hence, play an essential role or not when organizations consider incorporating Green IS (Brooks et.al., 2013).

2.2 Previous studies about public organizations

In the beginning of the 20th century, there was a "disinterest" on the part of some researchers for the study of public organizations specifically, and an assumption that if they were vulnerable to institutional pressures - to be better addressed in the following sections-, they might be as vulnerable as private organizations and subjected to the same pressures the latter are exposed

to (Frumkin, Galaskiewicz, 2004). In the light of this argument, previously, researchers tended to underestimate the importance of approaching the particularities of public organizations, arguing that it was not appropriate to differ organization based upon what sector they belonged to (Frumkin, Galaskiewicz, 2004).

The interest for public organizations has increased towards the end of the 20th century, though (Frumkin, Galaskiewicz, 2004). According to Kankanhalli and Kohli (2009), public and private sectors are different in nature, meaning that they have different needs and goals. In a similar way, Kankanhalli and Kohli (2009) points out that what influences public organizations are not market forces but political ones. In the public sector, demands and goals of different stakeholders are taken into consideration (as it is the case in the private sector), but even compromises with political entities are supposed to be made (Dufner et.al., 2002). Furthermore, according to Winkler (2013), the goal of public organizations, which is serving and hence benefiting society as a whole, is regarded as being more complex than that of profit-oriented organizations. In other words, Winkler (2013) argues that public organizations have the responsibility of creating value for society, in general, and hence ensure that their practices will benefit the latter. Additionally, they do not have the pressure or responsibility to gain or enhance customers' loyalty, as it is the case of private organizations (Kankanhalli, Kohli, 2009).

It is assumed that public organizations have the monopoly over the services offered and although the their intention is to contribute social good for the citizens, with great attention being given to those individuals who have less economic power (Kankanhalli, Kohli, 2009). It is assumed that in the public sector, stakeholders have more varying if not conflicting interests, while in the private sector the shared goal among stakeholders is to contribute to the company's profitability (Rosydi, 2009). For instance, the interests of politicians (with their limited time in the government) and those of environmentalists and other groups may diverge. This may be at times an obstacle for achieving compromises and putting plans into practice (Dufner et.al., 2002). Besides, establishing one's goals and taking action in order to achieve them are not so integrated as in its private counterpart (Dufner et.al., 2002). According to Dufner, Holley and Reed (2002), the environment, i.e., the fact that it is a private or a public sector, play a role in how strategies regarding information systems are approached and how they are put into practice.

2.3 Theoretical Framework

In this section, it is presented the theoretical framework used as a lens for analyzing the researched topic. Besides presenting the theory used here, the so-called "Institutional Theory"; we will also touch upon some of the criticisms towards it. Afterwards, every term associated to said theory will be further analyzed.

2.3.1 The Institutional theory

There has been much interest on the part of researchers on the motivations behind the adoption of Green IS by organizations (Corbett, El Idrissi, 2014). Emphasis has been on organizational demands and their goals, as well as to how organizations conform to laws and regulations (Corbett, El Idrissi, 2014). Laws and regulations are placed under the category "Normative pressu-

res" in the so-called "Institutional Theory", This theory is considered a suitable theory/framework to approach and understand how organizations adapt to external pressures and hence adhering to the interests of others (Boudreau, et.al., 2011), being initially used in sociological studies (Deng, Ji, 2015). C. Grant and G. Marshburn (2014) state that Institutional theory regards the forces that influence organizations, the way they behave and structure themselves. External forces can be cultural and social pressures (AlKalbani et.al., 2016), among others.

Institutional Theory encompasses three main aspects, namely: coercive, mimetic and normative pressures (Lei, Ngai, 2012), which are going to be better addressed and analyzed later on. The Institutional Theory can be useful when approaching the external factors that can influence companies to adopt Green IS (Lei, Ngai, 2012). Accordingly, Cooper, Ijab and Molla (2012) state that there is a straight correlation between the existence of external pressures and the adoption of Green IS. In a similar way, Cooper, Hasan and Molla (2014) argue that the presence of institutional pressures can impact organization positively by making them more environmentally responsible.

2.3.2 Criticisms towards Institutional Theory

It is stated that Institutional Theory is subjected to criticism, being regarded as a deterministic approach. In the light of this argument, said theory emphasizes the presence of external pressures and organizations' compliance to them, becoming alike with time; thus underestimating an organization's' capability to react to those pressures in different ways (Currie, Gozman, 2014). Accordingly, it is argued that organizations cannot only control the degree of their exposure to regulations but can even decide upon what systems and processes they want to implement when coping with regulations (Currie, Gozman, 2014). Even if that is the case, in accordance to Fong Lei & T. Ngai (2012), Institutional Theory is recurrent in Green IS literature, especially when it comes to studies regarding the adoption of said information systems; therefore our interest in making use of it when approaching our object of study.

2.3.3 Coercive, Normative and Mimetic pressures.

Organizations are not all exposed in the same way to pressures, meaning that pressures can be felt more in some industries than in others. In accordance to Brooks, Sarker, and Wang (2015), in the cases where pressures are more evident, there is less room for divergence. In this context, organizations are reproducing practices and adapting to external pressures and any divergence is not directly accepted, requiring legitimization. According to Frumkin and Galaskiewicz (2004), adapting to the environment can be regarded as a way to avoid or minimize conflicts. Here follows further analyzes of the three types of external or better institutional pressures. They will appear in the sequence: coercive, normative and mimetic pressures.

Coercive Pressures

According to C. Grant and G. Marshburn (2014), coercive pressures can come from the government and be seen in the form of regulations or policies. The government has the power to decide upon regulations or mandates, such as laws regarding pollution control (Brooks, et.al., 2015), and organizations are supposed to act in conformance to those regulations. Coercive pressures are seen in the necessity to adhere to the law and its related rules (Lei, Ngai, 2012). It is argued

that coercive pressures are especially felt when an organization's practices are not regarded as beneficial for society and hence taken as suitable by the government (Grant, Marshburn, 2014). Such pressures come from organizations with legitimacy and power to influence others. C. Grant and G. Marshburn (2014) argue that with the interactions and dependencies between organizations come pressures, which can be of two natures, either formal or informal regulations or "directives", as the authors put it. It is worthwhile mentioning that such dependency can also be seen in the form of resource dependency, meaning that an organization may be more or less dependable upon another organization's resources. This way, it is assumed that organization with important resources are more influential and therefore can exert pressure over others (Brooks et.al., 2015). This way, coercive pressures may be seen in the form of resource dependency. According to Brooks, Sarker and Wang (2015), organizations may provide resource to other organizations and such practice, in their turn, are documented in the form of agreements.

Normative Pressures

Normative pressures regard organizations' need to act in conformance to what is taken as legitimate in the area they are located in, for instance. Accordingly, it is assumed to be a common practice among organizations to adopt what is regarded to be the norm in a given context. C. Grant and G. Marshburn (2014) argue that normative pressures can come from actors with whom organizations interact, such as partners, customers and suppliers. In a similar way, Fong Lei and T. Ngai (2012) argue that stakeholders' expectations can be taken as an example of normative pressure. Additionally, as Brooks, Sarker and Wang (2015) point out that attending the expectations of stakeholders, can be regarded by companies as their duty towards them (AlKalbani et.al., 2016). Accordingly, Aier and Weiss (2012) point out that normative pressures can be felt as both a social and a moral obligation. With normative pressures come not only what practices are supposed to be adopted but even how this should be done (Aier,Weiss, 2012).

Mimetic Pressures

There is more likelihood that a practice will be adopted if others have done that before (Boudreau et.al., 2011). Mimetic pressures are experienced when organizations feel the need to imitate practices of other organizations in the same sector or industry (Fong Lei & T. Ngai, 2012). Needless to say, in order to be able to imitate others, organizations need to be alert of what other organizations in that specific sector are doing (Brooks et.al., 2015). Additionally, C. Grant and G. Marshburn (2014) state that the organizations held as models and hence imitated are the ones perceived as having achieved success due to the incorporation of the practices to be imitated. Mimicking can be an alternative when a company lacks something that others, leading companies, have. Accordingly, Brooks, Sarker and Wang (2015) state that "When a clear course of action is not available, organizations sometimes feel they need to "catch up" with a market leader and decide to mimic them"; argument which is also present in Boudreau, Chen, Karahanna and Watson (2011). For instance, organizations may mimic their competitors as an attempt to become as successful as they are (AlKalbani et.al., 2016).

2.3.4 Public Organizations, Institutional Pressures and Green IS.

Under the light of the academic literature and theoretical framework, we will analyze the question of Green IS adoption by organizations. Here it will be addressed organizations in general, due to the difficult to find papers addressing the public sector and municipalities, more specifically.

Green IS and Institutional Pressures

According to Corbett and El Idrissi (2014), different aspects may influence an organization to adopt Green IS, such as how an organization's employees and leadership perceive Green IS and external aspects, such as institutional pressures. As previously mentioned, Fong Lei and T. Ngai (2012) argue that there is a straight correlation between the existence of aforementioned institutional pressures and the incorporation of Green IS.

In the light of the Institutional Theory, the higher the impact or influence of the three types of pressures, the higher the likelihood that an organization will behave accordingly, and hence incorporate practices held as appropriate. By doing so, organizations can show that they are legitimate, that they respect norms and values (Bharati et.al., 2017). According to Boudreau, Chen, Karahanna and Watson (2011), it is likely that the three types of institutional pressures do not occur isolated, meaning that the presence of one may imply the presence of another (Boudreau et.al., 2011).

Coercive pressures, organizations and Green IS.

When it comes to coercive pressures, organizations may find it preferable to comply to rules regarding sustainability and environmental issues (Fong Lei & T. Ngai, 2012) instead of having to cope with punishments, such as expenses for such a violation. Accordingly, the existence of rules and policies are factors that contribute for the adoption of Green IS (Fong Lei, Ngai, 2012). In accordance to Brooks, Sarker and Wang (2015), organizations cannot consciously resonate upon the adoption of Green IS and freely decide on whether they want to adopt it. This is due to the fact that the very existence of laws and mandates shows that there is no decision to be made on the part of those organizations. In the light of this thought, the only possibility is to adhere to the regulations in question. Besides the necessity to adhere to regulations, it can be a way to ensure that organizations will continue receiving grants. It is stated that governments have been concerned with punishing those producing waste, and rewarding, or providing benefits to those that have managed to reduce emissions (Boudreau et.al., 2011). Additionally, not only national but also international regulations can be sources of pressure to organizations. According to Cooper, Ijab and Molla (2012, p.3 and p.7), in the case of environmental related regulations, influential organs are "Restriction of Hazardous Substance (RoHS) Directive" and "the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive". Although coercive pressures may be perceived negatively by organizations (Gholami et.al., 2013). as Fong Lei & T. Ngai (2012) argue, the existence of regulations regarding environmental issues is important and beneficial not only to companies but to society at a greater extent.

Mimetic Pressures, organizations and Green IS.

Other organizations, by having adopted Green IS themselves and achieving positive outcomes, are taken as models to be followed by those that have not incorporated Green IS yet. Brooks, Sarker and Wang (2015) argue that mimetic pressure takes place when organizations adopt IS initiatives already adopted by other organizations because of uncertainty of the outcomes in case they opted for not following others' footsteps. This way, there is no clear understanding of the consequences of implementing or not implementing Green IS initiatives, but rather a reasoning that if successful organizations have adopted them, then, it may be the right way to go (Brooks et.al., 2015).

In a similar way, it is argued that when organizations do not completely understand what Green IS consists of or its innovative capacity, they tend to mimic others (Grant, Marshburn, 2014). Furthermore, it is assumed that organizations, in the same sector, can interact and learn from one another, especially with those who become successful in, for instance, adopting and implementing Green IS. However, it is not discarded the possibility of mutual learning between public and private organizations (Kankanhalli, Kohli, 2009).

Normative pressures, organizations and Green IS.

A form of normative pressure can be seen in the very existence of organizations that deal with environmental related questions, such as "The Climate Group" and "Global eSustainability Initiative (GeSI)" (Cooper et.al., 2012, p. 3). Non-government organizations, such as World Wildlife Fund (WWF) and "Greenpeace" are influential and hence have the power to exert pressures on others for the adoption of "greener business practices" (Cooper et.al., 2012, p. 3). This way, organizations can also suffer pressures from so called "environmental movements" to invest in "organizational innovations", such as Green IS (Bharati et.al., 2017, p. 6). It is assumed that this kind of movement has played an important role in increasing people's concern for environmental questions and can even influence the creation of new norms and practices (Bharati et.al., 2017). An illustration of a practice brought up by environmental movements is be the so-called "sustainability reporting" through which organizations can provide information about the impacts their activities cause in the environment (Bharati et.al., 2017, p. 6). Organizations can comply with the necessity to report on how sustainable their activities are and hence show their commitment to environmental questions by making use of Green IS (Bharati et.al., 2017). An illustration of a practice that has become a norm among organizations is the adoption of "ISO14001 Environmental Management Systems (EMS)" (Cooper et.al., 2012, p. 3). It is worthwhile mentioning that C. Grant and G. Marshburn (2014) see a correlation between coercive and normative pressures prerequisites and the adoption of Green IS by organizations. The presence of regulations can therefore contribute for the adoption of Green IS. However, by perceiving the adoption of Green IS as part of one's obligation or duty towards the government, organizations may assume a reactive approach to Green IS and hence have a passive attitude towards it (Brooks et.al., 2015). The consequence is that they may adopt Green IS because they are supposed to and not to explore it and take advantage of what Green IS has to offer. Brooks, Sarker and Wang (2015) argue that such passive attitude should be replaced by a proactive one. Therefore, it is argued that the very adoption of Green IS does not always imply an effective use of said system, for this to take place, companies, or organizations, in general, should take a proactive approach towards Green IS, overcoming the phase where Green IS may be adopted as a reaction to external influences or pressures (Avital, Wietske van Osch, 2010). It is argued that it is only by having a proactive approach towards it that organizations can in fact benefit from Green IS and become more sustainable (Avital, Wietske van Osch, 2010).

2.3.5 Taking advantage of external pressures

The surrounding environment and hence external factors play a role in how organizations structure themselves, handle their processes and even influence how they approach and shape business strategies (Cooper et.al., 2012). While some organizations may try to avoid adhering to institutional pressures, others (Aier,Weiss, 2012) may decide for observing those pressures and hence using them on their favor. According to Aier and Weiss (2012), observing institutional pressures may be seen as positive after organizations have identified the benefits this observation may bring them. By regarding them as positive for the organization, there may be

investment in strategies to conform to them (Aier,Weiss, 2012). Organization may adopt practices in order not to face normative pressures later on; thus assuming a proactive action towards external pressures (Cooper et.al., 2012). This way, incorporating practices in order to avoid normative pressures may be regarded as part of an organization's strategies. Mimicking others can also be taken as a strategy for coping with institutional pressures (AlKalbani, Deng, Kam, Zhang, 2016). Accordingly, coping with mimetic pressures, specifically, can be taken as a strategy on the part of organizations to cope with uncertainty (Boudreau et.al., 2011). It is assumed that mimicking others can even lead to a more extensive use of the Information Systems implemented (Chen et.al., 2013). However, as previously mentioned, there may not be much reasoning behind mimicking; the very fact that many organizations have adopted a practice may be enough for others to realize the "need" to mimic them (Boudreau et.al., 2011). On the other hand, it is argued that people are more receptive to and hence inclined to invest in Green IS once they perceive it as having a positive impact on organizations and society (Brooks et.al., 2015).

Hypothesis

As previously discussed, in the light of the Institutional Theory, organizations are subjected to external pressures of different kinds, namely: normative, coercive and mimetic pressures. This implies that the environment organizations are located in plays a significant role and hence influence how organizations behave and hence what practices they adopt. In this context, it is argued that the aforementioned external pressures have also influenced considerably and even been regarded by the literature as the main triggers that make organizations invest in sustainable practices and adopt Green Information Systems. There are varying perspectives regarding how public organizations, more specifically, relate to above mentioned pressures. Some argue that public organizations are more exposed than private ones, given the former's tighter relation to a country's government. Others, on the other hand, do not emphasize such difference in degrees of exposure; and rather point out that as organizations, they are all exposed to external practices. In the case of the present study, as previously mentioned, we adopt the perspective that organizations in the public sector are also subjected to those three types of institutional pressures. It is assumed that public organizations, such as Swedish municipalities, do not experience competition between themselves, as it is the case of private organizations/companies. On the other hand, public organizations also face pressures from their peers, in the sense that they are expected to comply with norms and adopt practices already adopted by other organizations in the same sector. It is reasonable to infer that although the number of pressures may differ (competitiveness, need to increase one's profitability - in the private sector; concern for providing social good for citizens and need to comply to specific rules for that specific sector - as is the case in the public sector), they, as organizations, are subjected to the aforementioned institutional pressures and hence have to find ways to cope with them. In the light of the academic papers used as basis for the present study, it is possible to make the following hypothesis
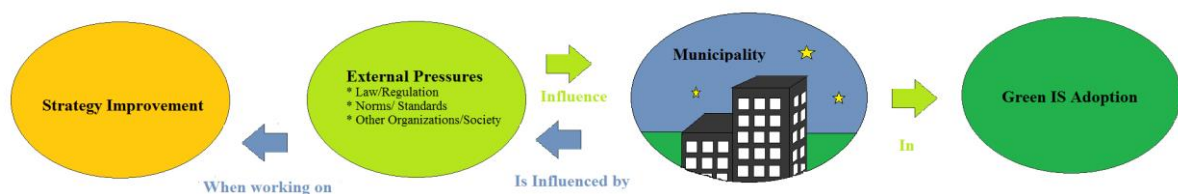
Figure 2.3.5.1: Theoretical Framework

Swedish municipalities, as organizations, are exposed to external pressures, which, in their turn, influence those organizations considerably when it comes to the adoption of Green IS. These external pressures can also influence how municipalities, deal with their strategies towards Green IS and sustainability.

3 Method

3.1 Study Progress

Before defining any problem or formulating any research question, it was made necessary to investigate in academic papers in the field of Information Systems, theories as well as case studies. When it comes to our research question, Jacobsens (2002) points out that it should have a descriptive character. Accordingly, it was made evident what aspects would be addressed in the present paper. This way, the research question already shows the scope of our research and hence its limitations.   As previously mentioned, the argument that both public and private organizations are exposed to different kinds of external pressures (under the categories of coercive, normative and mimetic from the Institutional Theory) and the relation of said pressures with Green IS adoption provided us with a hypothesis, previously mentioned in the subsection "Hypothesis". By performing interviews with representatives of municipalities, we aimed at answering the research question and investigating whether the hypothesis could be sustained. This way, in accordance to Jacobsens (2002), it was important to perform an empirical study in order to gain more insights on the topic under study. The following image shows how our research process took place.
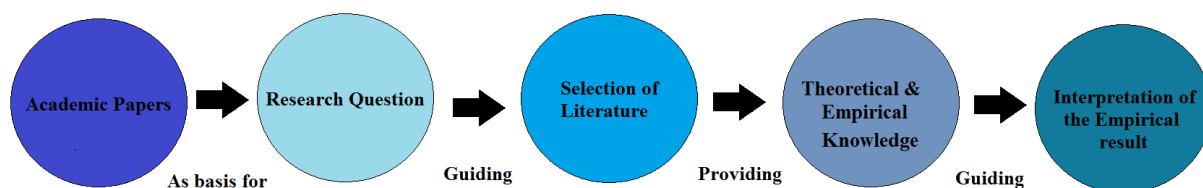
Figure 3.1: Research Process

The image above represents the process carried out when performing this research.

3.2 Literature Study

3.2.1 Choice of method and Data gathering

Watson and Webster (2002) point out that an effective literature review creates a solid foundation for increasing one's knowledge on the topic of interest, and, furthermore, it brings about the possibility of finding additional topics that need investigating. Accordingly, it was by analyzing existing literature in this topic that we could identify a potential problem area and hence a research topic. The process of analyzing what pieces of literature and what theories are relevant to a study is time consuming (Watson,Webster, 2002). Nonetheless, researching articles can become more effective when making use of techniques, such as searching them by keywords. This way, in our case, we made use of combinations of keywords when searching

for academic literature. Those keywords were in fact some of the words present in our research question and other related words. As an illustration, we had "influence", "Institutional Theory", "Green IS", "Information systems", "Organizations" and "public organizations", "municipalities" and "municipal context". It is worthwhile mentioning that the main search engines used were "AIS Basket of Eight" and "Google Scholars"; with the majority of the articles coming from the former.

3.2.2 Choice of Literature

In order to use time in an effective way, instead of reading all article found completely, we opted for first reading their abstract, introduction and conclusion. If found related to the present work, we would read them entirely and carefully; those not held relevant were discarded and a new search with a combination of the above-mentioned keywords would be made. Besides reading the relevant articles, a "Literature Table" was made, consisting of columns where the title of the articles, name of their authors and year of publication, theories, methods and relevance – this table is available in the appendix -. The purpose of making such a table was to assist us in better visualizing what articles were the most relevant ones and identify the theories they refer to. It is worthwhile mentioning that we indicated the degree of their relevance by writing either "Relevant" or "Not So Relevant" in the "Relevance" column.

3.2.3 Source Quality

We firstly limited ourselves to searching for articles in the search engine "AIS Basket of 8", since it is well-known for having only relevant/ top articles within the Information Systems discipline. Only after exploring all the possibilities provided by such search engine, we made use of "Google Scholars".

3.3 Empirical Study

As previously mentioned, the purpose of the empirical study was to investigate if our hypothesis" is consistent, or in other words, if it works for the Swedish municipal sector, specifically. The purpose was therefore to provide new insights to a topic not so studied in the existing literature. Thus, it is an opportunity for us to contribute with the literature, by investigating if existing theories and findings from empirical papers apply in another context (Jacobsen, 2002).

3.3.1 Question Formulary

The purpose of this formulary was to get to know what Swedish municipalities have worked with Green IS so as to see which ones could be potential informants in our research. Such formulary can be seen in the appendix, as part of the email sent to our target group, i.e., representatives of Swedish municipalities.

3.3.2 Choice of method

We opted for performing a qualitative research, since our aim was not to bring statistics on how many municipalities use Green IS or report being influenced by external pressures. On the contrary, we aimed at getting a better understanding on, among other aspects, in what ways municipalities experience external pressures and in what ways the latter influence their behavior/actions towards Green IS. A more detailed and deeper understanding about an organization's behavior would not be possible if we had carried out a quantitative research.

In accordance to the method chosen, we made use of semi-structured interviews. Since the questions were relatively open, interviewees had room to speak freely and develop their answers as much as they wanted. Such openness is positive in a research since it can lead to more information, even about aspects not covered in the questions. This, in its turn, can translate into more data (Bryman, 2011).

3.3.3 Criticism towards qualitative research

There are, on the other hand, criticisms towards qualitative research methods. It is argued that it is difficult to make generalizations of the findings, since it is usually the case that researchers prioritize getting a deeper understanding of how a few representatives of the group of interest perceive the topic under study. This is prioritized over gaining a more superficial understanding on how a great number of representatives of the group of interest would perceive the same topic. Another critique is that it is less evident the criteria used when choosing target groups and potential interviewees (Bryman, 2011). Additionally, participants may feel uncomfortable with the presence of the researcher during the performance of interviews, for instance, which can affect the quality of the data gathered. Besides that, it is assumed that researchers may be biased when interpreting the data gathered, being influenced by their worldviews when analyzing data.

3.3.4 Selection of the target group

In accordance to Jacobsen (2002), we opted for making a so-called "self-selection" and afterwards an "arbitrary selection" of potential participants. Besides, in accordance to Jacobsen (2002), the criterion for choosing the potential informants from each municipality was that the individuals should be people with knowledge in the topic addressed here (Information systems or more specifically, Green Information Systems). This way, we contacted Swedish municipalities located in different parts of the country; asked for the contact information (name, last name, telephone number and email address) of the person responsible for IT related questions. Before contacting him/her by phone, we sent him/her an email presenting ourselves, our research and asked him/her kindly to answer the previously mentioned formulary. If he/she answered that the municipality in question worked with or he/she at least knew what Green IS was all about, and showed interest for participating in the research, we would agree on a day for a skype interview or an interview in person.

Those municipalities that did not reply our email were contacted via telephone; some did not answer the phone, and others, did so but said explicitly that they were not interested in becoming informants. It is worthwhile mentioning what municipalities were contacted. They were the following, presented in alphabetical order: Avesta, Boden, Båstad, Danderyd, Eskilstuna, Eslöv, Falun, Haparanda, Hedemora, Helsingborg, Hässleholm, Höganäs, Höör, Kramfors,

Kristianstad, Lund, Malmö, Piteå, Simrishamn, Skellefteå, Tomelilla, Trelleborg, Trosa, Vingåker, Ystad and Ängelholm. When it comes to the municipalities that accepted being part of the present study, they were the following: Eslöv, Haparanda, Lund and Malmö.

3.3.5 Performing the interviews

We performed both Skype interviews and interviews in person. Needless to say, the former were performed with representatives of municipalities located away from Lund (Eslöv and Haparanda) and the latter, with Lund and Malmö municipalities. We gave the respondents the possibility of not having their identity revealed in the final paper (Jacobsen, 2002) and, furthermore, asked for their permission to record the interviews. The reason why we opted for recording them was to avoid missing information, which can easily happen if the researchers have to take notes while performing the interviews. This way, we were completely focused on interacting with the respondents, asking additional questions when necessary and not restricting us to make questions in the order they appeared our questions guide, but adjusting the order of the questions in accordance to the flow of the interview.

In accordance to Bryman (2011), it is important that the interview is not of a long duration and that the researcher has been pleasant and respectful when contacting the potential interviewees; otherwise potential informants will not feel interested in participating in the study. In our specific case, we informed the potential participants that the interview would take approximately 30 min so that they would not take it as too time-consuming. Furthermore, we made sure to be kind when contacting them and gave them room to think whether they wanted take part in our study. Accordingly, some of the participants did not answer straightaway if they would participate, but rather, received the interview questions beforehand, and after analyzing them, contacted us confirming or not their participation. It is worthwhile mentioning that the interviews were transcribed either on the day of their performance or on the following day, and that the transcriptions are available (in Swedish) in the appendix.

3.3.6 Interview guide

According to Bryman (2002), an interview guide consists of a list of the questions that are going to be asked during the interviews. Such a guide, available in the appendix, was used in all the interviews carried out here. As previously mentioned, they were open questions, thus giving room to the respondents to resonate about them and develop their answers. It is worthwhile mentioning that all the questions present in the aforementioned guide were carefully chosen to touch upon all the aspects we aimed to analyze. The questions were formed based upon the literature used in the current study. Therefore, they touched upon, even if indirectly, the terms "Coercive pressure", "Normative pressure" and "Mimetic pressures", and strategy for Green IS. We opted for referring to those pressures using simpler words, since, if done otherwise, the respondents might not have understood them. This would probably have affected negatively the content of the answers and hence the research results.

3.3.7 Data gathering and Interview analysis

The interviews were transcribed not long after they were recorded. Once the transcriptions were ready, each transcription was further analyzed and divided into categories. Each category referred to a topic of relevance for the study. It was done in accordance to Jacobsen (2011), who

argues that the complexity of the data gathered is reduced by performing categorizations. Additionally, the existence of categorizations facilitates comparability between data from different interviews and even to reduce the complexity of individual interviews (Jacobsen, 2011).

3.3.8 Research Quality

Reliability and Validity

Reliability regards the question on whether the research results would be the same if the research were to be carried out again or if the results can be affected and hence modified somehow. Validity, in its turn, regards the judgment on whether the research carried out is reasonable; if the findings are indeed correlated to the topic under study (Jacobsen, 2011). It is worthwhile mentioning that all the interviews followed the interview guide, thus there was a pattern where the respondents were asked the same questions. Nonetheless, as previously mentioned, in some cases additional questions were made. Furthermore, the interviews were transcribed completely and nothing was changed in their content.

Ethics and Principles

In the present study, we followed the Jacobsen (2011)'s recommendations regarding ethics. The respondents gave us permission to record the interviews. Furthermore, the respondents received beforehand, information regarding the purpose with the study and the approximate duration of the interviews. This way, the informants were not taken aback either by the content or duration of the interviews. Additionally, as previously mentioned, they were given the possibility not to have their names revealed, but since none of them saw it as an issue, their identity was made available in the paper.

3.4 Method Summary

We took into consideration Webster and Watson (2002)'s recommendations on how to carry out a literature study, i.e., how theory should be gathered and used. As previously mentioned, the participants in the study were firstly contacted via email, receiving information about the purpose of our study. They were required to answer a brief set of questions regarding the Green IS and asked if they would like to take part in the research. Only a few municipalities contacted us and expressed their willingness to become respondents. The empirical study was of a qualitative character, consisting of individual interviews of the approximate duration of 30 minutes. We made use of an interview guide, which consisted of semi-structured questions, with the purpose of gaining an insight of how the different respondents perceive the topics approached, while giving them room to develop their answers.

4 The Municipalities - our informants

4.1 Lund Municipality

Lund Municipality take sustainability into consideration in its daily work and pursue increasing its sustainability performance even more. The municipality is involved in programs and projects oriented towards ecological sustainable development, with the purpose of promoting and increasing sustainable consumption, reducing chemical load and improving sustainable urban development. Lund Municipality works with Green IS, with this information systems providing support to Lund Municipality's varying activities. The municipality in question is acknowledged by its work towards sustainability (Lunds kommun, 2017; Lundaeko, 2017).

Our interviewee from Lund Municipality is its IT Director (Information Technology Director).

4.2 Malmö Municipality

Malmö Municipality also invests in green practices, having even signed the so-called Green Digital Charter (GDC) – its definition was presented in the Glossary of concepts -. Malmö Municipality's goal is to take the environment even more into account in the urban planning and development. Accordingly, the municipality in question aims to invest in a climate-friendly urban development and become a model for other organizations also aiming at using IT for improving sustainability. Furthermore, the municipality has focused upon three areas, namely: Green digital communication, IT as environmental technology and a sustainable IT platform. The municipality has received many awards for its green environmental work. (Malmö stad, 2016)

Our interviewee from Malmö Municipality is its IT Director (Information Technology Director).

4.3 Eslöv Municipality

Eslövs municipality is regarded as an eco-municipality – its definition was presented in the Glossary of concepts -, being its ambition to contribute to sustainable development. This way, the municipality in question is working towards a cleaner environment, better resource management and preservation of the environment. The municipality also invests in green practices, being concerned about the use of information systems for improving their sustainability performance (Eslövs kommun, 2016).

Our interviewee from Eslöv Municipality is one of its two IT Directors (Information Technology Director).

4.4 Haparanda Municipality

Haparanda is also regarded as an eco-municipality, being even considered Norrbotten's best environmental municipality, according to Hjertström and Nilsson (2016). The Municipality's goal is to contribute to the Swedish environmental work towards sustainability and hence assist in decreasing impacts on the environment and climate (Rensfeldt, 2017).

Our interviewee from Haparanda Municipality is its IT Director (Information Technology Director).

5 Results

The analysis of the interviews generated the following results:

5.1 Lund Municipality

5.1.1 Questions regarding the background

The informant Evalotta Elnertz states that she does not have a complete definition of Green IS. She relates Green IS to IT products that are more environmental friendly than others, and that have the possibility to provide clear environmental solutions. According to the respondent Evalotta Elnertz, Lund Municipality works in accordance with an encompassing operation plan ("verksamhetsplan") whose purpose is to ensure that all the municipalities' activities are environmental-friendly. This way, Evalotta Elnertz states that there is a focus on investing in sustainability, environmental programs and even in Green IS.

They ensure that the products purchased fulfill requirements. Furthermore, there is an investment in digitization – its definition was provided in the "Glossary of Concepts" -. According to Evalotta Elnertz, Lund Municipality does not have a strategy for Green IS, specifically. On the other hand, the municipality in question has a green business strategy and all the organization is concerned for and involved in environmental questions. According to Evalotta Elnertz, the implementation of Green IS encompasses varying steps, such as the identification and description of areas of development; establishment of a project plan with the goals to be achieved and investment in virtualization (ex. Virtual business meetings). The informant Evalotta Elnertz states that Lund Municipality works proactively with Green IS and wants to contribute to decrease environmental impacts by investing in environmentally friendly activities.

5.1.2 Questions regarding coercive pressures

According to Evalotta Elnertz, laws, regulations and policies influence considerably the work of Lund Municipality with Green IS. Accordingly, politics is appointed as the main factor that influence work towards sustainability. As an illustration, the municipality follows LundaMats and LundaEko, ISO 14001 – their definitions were provided in the "Glossary of Contents"-, which are respectively, a strategy regarding sustainability in the transport system; a program for sustainable development in Lund and Lund Municipality; and a framework to assist organizations in improving the effectiveness of their management systems while making them more environmental friendly.

5.1.3 Questions regarding mimetic pressures

According to the respondent Evalotta Elnertz, municipalities share experiences with one another, regarding, for example, requirement specifications and acquisitions. Evalotta Elnertz argues that there is a relation between increasing the organization's sustainability and increasing the organization's reputation. Reputation is a relevant aspect for Lund Municipality and a means

to increasing one's reputation is by being a good example to other organizations, according to Evalotta Elnertz.

5.1.4 Questions regarding normative pressures

According to Evalotta Elnertz, the municipality is influenced by norms and standards, with the latter concerning standard practices when purchasing products. The respondent did not provide an example of the norms, though. The municipality's partners and citizens have also their role in influencing the municipality's work towards Green IS and sustainability, in general.

5.1.5 Questions regarding strategy

According to the informant Evalotta Elnertz, the municipality can benefit from the above-mentioned external pressures by taking them into consideration when working on a strategy towards Green IS.

5.1.6 Additional questions

According to Evalotta Elnertz, Lund Municipality works proactively for Green IS and is mostly influenced by Coercive and Mimetic pressures.

5.2 Malmö Municipality

5.2.1 Questions regarding the background

According to the respondent Ulf Linderoth, Green IS can be defined as the information systems that besides being energy effective over the whole lifecycle, support the business processes which are ecological, economic, social and ethical sustainable and contribute to decrease ecological impact. According to Ulf Linderoth, Malmö Municipality regards Green IS as beneficial for their organization. He argues that Green IS is positive to organizations in general, even if that term is not so frequently used nowadays. The municipality has invested in the so-called "Digital Malmö" (Digitala Malmö, in Swedish), which has the purpose of decreasing the ecological impact with the help of information and communication technique. Ulf Linderoth states that there are many areas in which Green IS together with modified work processes can contribute to the reduction of the ecological impact. Some of these areas are control, welfare services but also route optimizations. The benefits for organization, society and environment are the reduction of environmental impact, as mentioned before, either in a small or big extent; which, in its turn, is important for organizations if they want to be long-term organizations.

Malmö Municipality has previously implemented Green IT but realized that taking into consideration information and communication technologies would be beneficial and assist in the optimization of their operating systems. Ulf Linderoth states that they did not implement Green IS under this term. Malmö Municipality has instead followed the so-called "Green Digital Charter" – its definition was provided in the "Glossary of concepts", which is an EU orientation.

According to Ulf Linderoth, this is an environmental policy which also touches upon Green IS related questions.

Malmö Municipality, according to him, always take environmental concerns into account when writing their business cases and project descriptions, among other aspects. Ulf Linderoth even mentions that Malmö Municipality is investing in digitizing, and in the "digital society" – its definition was provided in the "Glossary of concepts"-. In this context, it is necessary, according to the informant, to invest in systems that will support process modifications.

5.2.2 6.2.2 Questions regarding coercive pressures

According to the respondent Ulf Linderoth, Malmö Municipality must follow the so-called "Lagen om Offentlig Upphandling" (LOU) – its definition was provided in the Glossary of Concepts" - and hence they need to specify their environmental requirements. Ulf Linderoth points out that the existence of politicians that are interested and engaged in questions related to Green IS is beneficial since it encourages municipalities to adopt Green IS. Environmental Organizations are also influential, an illustration is the so-called TCO, which regards hardware certification.

5.2.3 6.2.3 Questions regarding mimetic pressures

The informant Ulf Linderoth points out that it is always beneficial to exchange knowledge with other organizations. This way, organizations can learn from those which already implement Green IS and have gotten good results. According to Ulf Linderoth, this facilitates considerably the work with Green IS. There is an openness and a willingness on the part of municipalities to assist one another; which is positive given that municipalities have similar demands and needs. Municipalities have their strengths and weakness and since one's weakness may be another's strength, they can benefit from this knowledge exchange. This way, some municipalities are more well-known for their performance in a field than others; Stockholm is famous for their investment in a "Smart City", and Västerås for investing in digitizing in the field of Elderly Care.

Besides, information/material is made available by and for municipalities. Having access to material is taken as positive to municipalities which have not yet implemented practices regarded as positive. The respondent Ulf Linderoth states that by taking the example of other municipalities into consideration, it is possible to avoid committing the same mistakes the municipality taken as an example might have made in the past. Besides, when taking a proactive approach towards Green IS, and following in another organization's footsteps, they may work in a more structured way towards Green IS and environmental issues, in a greater extent. By doing so, organizations may get more prepared and will not need to be reactive once political decisions and regulations require them to adopt certain practices. The informant Ulf Linderoth mentions that municipalities can take part in forums, providing some examples, such as SOI (Sveriges Offentliga Inköpare) and SKL (Sveriges kommun och landstingsförbund) – their definitions were provided in the "Glossary of Concepts".

5.2.4 6.2.4 Questions regarding normative pressures

According to the informant Ulf Linderoth, the existence of norms, such as the so-called TCO – requirements – TCO was defined in the "Glossary of concepts"-, Energy Star and SIS assist the work with Green IS. Ulf Linderoth states that not all municipalities are versatile when it comes to complying to those requirements, though.

5.2.5 Questions regarding strategy

The informant Ulf Linderoth argues that strategies are not static and hence should be analyzed and adjusted to comply to pressures of different kinds.

5.2.6 Questions about additional pressures

According to the informant Ulf Linderoth, additional pressures are political decisions that regard the European Union in general, and those concerning the local and regional levels.

5.2.7 Additional questions

According to Ulf Linderoth, Malmö Municipality works actively with green practices. Ulf Linderoth states that the external factors (institutional pressures) are positive for organizations; arguing that it is important that municipalities take the opportunity of following in other organization's footsteps to act proactively towards sustainable questions. Ulf Linderoth argues that it is important that organizations are not only reactive towards those questions.

5.3 Eslöv Municipality

5.3.1 Questions regarding the background

According to their representative, Helena Månsson, Green IS can be defined as the information system that assist them in decreasing the use of the planet's resources. Using Green IS is a form of taking advantage of the systems and use technique in the best possible way. Helena Månsson argues that is positive and useful to make use of Green IS not only for their municipality but for other municipalities as well. It is argued that every initiative to use information systems as a means to assist in reducing climate and environmental impact is positive.

Eslöv Municipality has reduced considerably the number of business trips and replaced them by Skype meetings. The use of Skype has also been implemented in the Care sector. According to the informant, Green IS can be applied in different areas, such as community planning - where Internet of Things – defined in the "Glossary of concepts"- can use Green IS for controlling different flows; in the Care Sector (and Welfare), where there is a concern for reducing the number of trips to attend patients personally, when it is possible to monitor them virtually first and then decide if the presence of a personnel is in fact needed. Furthermore, Green IS is also used in order to reduce energy use within the organization's activities. As previously

mentioned, the use of Green IS is regarded as positive for organizations, in general and, furthermore, for the environment and society. The respondent argues that one of the reasons for adopting Green IS was their political goals. The informant Helena Månsson states that the municipality in question did not implement Green IS in a structured way. On the other hand, it seems that they do have a strategy to handle Green IS, since, according to Helena Månsson, they addressed its requirements, analyzed them, carried out a so-called "Surrounding World Analysis" (or "Omvärldsanalyser", the Swedish term) – its definition was provided in the "Glossary of concepts" -, and the municipality has even a project plan to be followed up.

5.3.2   Questions regarding coercive pressures

According to Helena Månsson, the municipality in question needs to work so as to fulfill political goals regarding, for instance, environmental questions. Eslöv is regarded as an "Eco-municipality", which implies that the municipality has to work accordingly and hence comply to regulations concerning environmental questions. The informant Helena Månsson argues that the municipality adopts practices because they are held necessary, since they are part of governmental directives. It is, according to her, the government which has the power to influence what direction municipalities should go. However, even if that is the case, it is possible to have additional goals (own goals).

5.3.3   Questions regarding mimetic pressures

According to the respondent Helena Månsson, external influence comes especially from other organizations that already work with Green IS. It is stated that the municipality that influences Eslöv municipality the most concerning the Green IS related questions is Växjö. Eslöv and Växjö have been in contact to each other and even worked together in questions concerning Green IS. According to the informant Helena Månsson, Eslöv Municipality is open to learn from others and to assist other municipalities by sharing their knowledge and experience; which seems to be the case of the majority of the Municipalities if not all of them. Municipalities may have different points of strength, which is positive, in the sense that they can learn and overcome their weakness by receiving help from other municipalities. In her opinion, this knowledge exchange is due to a lack of competition between municipalities. It is argued that knowledge exchange can even occur between municipalities and profit oriented organizations; which she regards as something positive for municipalities. As an illustration, knowledge exchange as well as construction or strengthening of network can happen during conferences. She states that it would be positive for municipalities if there was a cooperation between the public and private sectors regarding Green IS questions, since it could improve municipalities' work with Green IS, and the other way around. The informant Helena Månsson argues that public and private sectors, in spite of their differences, have a shared goal, which is the preservation of the planet's resources.

5.3.4   Questions regarding normative pressures

The respondent states that non-governmental organizations such as Greenpeace and Naturvårdsverket influence municipalities indirectly, not specifically with Green IS adoption but with the commitment to Environmental questions. The respondent Helena Månsson argues that norms and standards influence municipalities indirectly in their work with Green IS. Examples

of norms and standards that they feel compelled to follow are norms within the Skåne region ("region skånes utryckningar") and SKL (Sveriges Kommun och Landstingsförbund) – its definition was provided in the "Glossary of concepts"-. Furthermore, the interest of other agents (stakeholders) also influence the municipality's work with Green IS; and the same applies to the municipality's suppliers. She argues that they follow norms regarding sustainability and not only Green IS specifically. According to the informant Helena Månsson, municipalities are also concerned about their reputation. For instance, they are interested in calling the attention of citizens and hence bringing more inhabitants to the municipality.

5.3.5 Questions regarding strategy

According to the informant Helena Månsson, the above-mentioned factors influence municipalities even in the creation or improvement of their strategies regarding Green IS and environmental related questions. For instance, municipalities can use the knowledge acquired from their interactions with other municipalities, as a basis for resonating on how to improve their own strategy.

5.3.6 Additional questions

The aforementioned pressures can also affect municipalities negatively, according to the informant Helena Månsson; when an organization has goals that do not include adopting practices taken as suitable by other organizations and social actors. According to the respondent's arguments, it is possible to infer that the institutional pressures felt the most by Eslöv municipality are the so-called Coercive and Mimetic pressures. The informant Helena Månsson did not identify other pressures or influential factors. She states that Eslöv municipality has a proactive approach towards the work with Green IS. Helena Månsson argues that in order to overcome a reactive approach and make the transition towards a proactive one, it is important to take laws and regulations into consideration (as an example, the existence of a political plan regarding Green IS - "ett politiskt handlingsplan"), but also to have engagement on the part of the employees. Accordingly, all the organization (its personnel) should be involved in the work with Green IS.

5.4 Haparanda Municipality

5.4.1 Questions regarding the background

According to the informant Rolf Sannerbjörk, Green IS can be defined as an information system that assists in the question of increasing energy efficacy. The respondent Rolf Sannerbjörk states that Haparanda Municipality work with Green IS. They work, among other things, with sustainable recycling, purchase of second-hand electronic equipment and re-use of their own equipment. The municipality in question is very concerned about environmental questions, and hence give great importance to the fulfillment of environment-related requirements when purchasing products and equipment.

5.4.2 Questions regarding coercive pressures

The informant Rolf Sannerbjörk argues that it is necessary to conform to regulations. However, the existence of regulations is not the main factor that influenced the municipality to adopt Green IS. According to Rolf Sannerbjörk, there is a willingness on the part of the municipality's personnel to work with Green IS. Rolf Sannerbjörk states that it can be difficult to know beforehand the additional costs for the adoption of Green IS.

5.4.3 Questions regarding mimetic pressures

According to Rolf Sannerbjörk, IT personnel from different municipalities usually meet and provide assistance to one another. Nonetheless, Rolf Sannerbjörk points out that there can be political divergences between municipalities, which can become an obstacle to their cooperation. Although there is contact between Haparanda Municipality and other municipalities, Haparanda has not been influenced by others regarding the work with Green IS. Accordingly, Rolf Sannerbjörk points out that Haparanda has taken its own decisions regarding Green IS related issues. There is a willingness for investing more in Green IS. Rolf Sannerbjörk states that it would be positive if small municipalities could share data centers.

5.4.4 Questions regarding normative pressures

According to the respondent Rolf Sannerbjörk, norms, standards and the concern of citizens for environmental questions have not influenced Haparanda Municipality regarding the work with Green IS. In a similar way, Rolf Sannerbjörk argues that reputation seem not to play a big role in the work with Green IS.

5.4.5 Questions regarding strategy

This question was not answered by the respondent.

5.4.6 Additional questions

According to the informant Rolf Sannerbjörk, it is important that organizations acknowledge that Green IS can bring benefits not limited to the organizations but also to the environment. Motivation and engagement on the part of the employees make a positive atmosphere, facilitating the work with Green IS. It is essential, according to Rolf Sannerbjörk, that there is an open communication within the organization.

6 Discussion

When it comes to how the municipalities involved in the current study perceive Green IS, there is a consensus on its benefits for reducing energy consumption and hence increasing energy efficacy; Green IS is also thought to bring positive consequences for society and the environment. Furthermore, two of the respondents, namely Lund and Haparanda Municipalities, associate Green IS to IT equipment which fulfill environmentally related requirements. Lund and Malmö Municipalities related Green IS to the investment in environmental friendly/sustainable practices to decrease ecological impact. Only Malmö Municipality relates Green IS to sustainable business processes.

Regarding the impact of *Coercive pressures* on Green IS adoption, the majority of the respondents argues that regulations influence the adoption of Green IS. Malmö Municipality, for instance, states that political decisions regarding environmental questions encourages Green IS adoption. Eslöv, in its turn, points out that, although there is a need to work towards government-established goals, municipalities can also have their own goals. When it comes to *normative pressures*, Malmö and Eslöv Municipalities state that non-governmental movements are also influential. Eslöv adds that this influence occurs indirectly. Lund and Malmö Municipalities state that they follow standards, respectively, when purchasing products and adhering to TCO requirements, SIS (Swedish Standards Institute). Haparanda Municipality is the only one which reports that norms, regulations and citizens' concern for environmental issues were not the main factors leading to the adoption of Green IS but rather; the municipality's willingness to adopt it. Regarding *mimetic pressures*, three of the respondents, namely Eslöv, Lund and Malmö Municipalities find a correlation between the influence of other municipalities and one's willingness in adopting Green IS. Eslöv argues that there is not competition between municipalities which facilitates knowledge exchange and cooperation between them.

Malmö Municipality agrees with Eslöv Municipality when pointing out that the fact that municipalities have different points of weakness and strengths is positive, since those knowledgeable in a question/an issue can assist those facing difficulties in dealing with that question. Accordingly, Haparanda Municipality argues that there are contact between municipalities' IT personnel. However, he states that other municipalities did not influence Haparanda Municipality's behavior towards Green IS. Two of the respondents, namely, Lund and Malmö Municipalities state that organizations want to be well seen by others and therefore there is concern for their *reputation*. However, they do not see a straight relation between concern for one's reputation and Green IS adoption. In a similar way, Haparanda Municipality states that reputation is not relevant in this specific question.

When it comes to the influence of external factors in a municipality's strategy towards Green IS or sustainable goals, in a greater extent, Lund, Malmö and Eslöv Municipalities argue that the main influences are the example of other municipalities and hence knowledge exchange (Mimetic pressures) and regulations (Coercive Norms). Eslöv Municipality points out that one can improve its strategy by looking at others' examples. There is a consensus among the respondents that a municipality becomes more proactive towards Green IS once there is more involvement on the part of its employees in Green IS related questions. Lund Municipality argues that by becoming more proactive, one does not need to be reactive when, for instance, new political decisions regarding Green IS related issues, or sustainability come out.

7 Conclusion

7.1 Conclusion regarding the theoretical part

Some researchers argue that public organizations are more exposed to external pressures than private ones. Others, on the other hand, argue that both sectors are exposed to the same kind of external pressures (Frumkin, Galaskiewicz, 2004). Although private and public organizations may have different goals, such as, respectively increasing their competitiveness; and benefiting the society (Kankanhalli, Kahli, 2009; Winkler, 2013); in this paper, we take the approach that public and private organizations have similar type of pressures to cope with (coercive, mimetic and normative pressures).

Responding to pressures can be a way to avoid potential conflicts and increase one's legitimacy (Galaskiewicz, 2004; Alkalbani, Deng, Kam, Zhang, 2016). Regulations and policies are examples of coercive pressures (Grant, Marshburn, 2014). Not only the government but also other organizations are influential and hence are able to pressure others to adopt certain practices (Brooks et.al., 2015). It is argued that resource dependency can lead to one organization having influential power over others (Brooks et.al., 2015). Normative pressures can be seen in the necessity to conform to norms, and to take into consideration the perspectives of partners, suppliers, customers or citizens; i.e., those an organization interacts with (Fong Lei, Ngai, 2012). Mimetic pressures can be seen when organizations follow others' footsteps, thus adopting similar practices of other organizations considered successful (Grant, Marshburn, 2014). An organization may mimic others also due to an uncertainty of the consequences of adopting Green IS (Brooks et.al., 2015). In the light of this argument, knowing that other organizations benefited from adopting Green IS can be a reason for an organization to want to mimic their practices. Fong Lei and T Ngai (2012) see a straight correlation between the influence of those external pressures and Green IS adoption.

It is argued that organizations from the public-sector exchange knowledge between one another regarding information systems related questions. It is also likely that there is knowledge exchange between organizations from the private and public sectors (Kankanhalli, Kahli, 2009). According to Aier, Weiss (2012), external pressures may be taken into consideration when organizations work on their strategies. It is argued that the very act of mimicking others can be taken as a strategy on the part of organizations to cope with external pressures (Aier, Weiss, 2012).

7.2 Conclusion regarding the empirical part

The benefits of Green IS are the aspects mostly highlighted by the respondents, with a consensus that its benefits can be felt in the organization level, society and environmental. Some of the benefits reported are increased energy efficacy, decrease of environmental impact and assistance in the work of staff within Elderly Care, for example, when monitoring patients. The majority of the informants see a straight correlation between the necessity to adhere to laws and regulations and Green IS adoption. Additional influences are norms, standards and non-governmental organizations. The majority of the informants state that municipalities take other muni-

cipalities as examples and follow their practices when approaching sustainability related questions. The knowledge exchange coming from these interactions are taken as positive and regarded as playing a great role in one's willingness to adopt Green IS. According to the respondents, concerns for one's reputation do not play a big role when deciding upon the adoption of Green IS. By the answers provided by the informants, is not possible to get a detailed knowledge on how the implementation of Green IS took place in their organizations. On the other hand, based on the answers, it is possible to infer that, for the majority of the informants, mimetic and coercive pressures are the most influential factors when building or working on the improvement of one's strategy towards Green IS and sustainability.

7.3 Connecting the empirical and theoretical parts

We see the same concerns for sustainability, on the part of the municipalities involved. However, they are still different from one another, performing different practices. It is not appointed by any of the respondents that they adhere to norms in order to avoid potential conflicts. Gains in legitimacy is not appointed as relevant either, what contradicts arguments from academic papers used here. Although mentioned by the respondents, the latter do not emphasize the influence of suppliers and citizens in Green IS adoption. Citizens and suppliers are, on the other hand, considered by the literature part of the *normative pressures* (Fong Lei, Ngai, 2012). In a similar way, the influence of environmental organizations, which are considered part of the normative pressures, was mentioned by only one of the respondents.

When it comes to *coercive pressures*, none of the respondents mentioned the question of avoiding punishments as a reason to adhere to regulations - as mentioned by Fong Lei and T. Ngai (2012) -, or the necessity to guarantee grants - as mentioned by Boudreau, Chen, Karahanna, Watson (2011). According to one of the respondents, there is necessity to adhere to international regulations as well, which confirms the literature (Cooper et.al., 2012). Neither of the respondents argue that law and regulations are negative, which contradicts the argument that organizations may regard coercive pressures negatively (Gholami et.al., 2013).

Mimetic pressures are the ones more emphasized by the informants. However, they do not mention that they imitate others because of an uncertainty on how to behave regarding Green IS; contradicting the literature (Brooks et.al., 2015). On the other hand, they emphasize that interaction with other municipalities contributes to making them more knowledgeable about sustainability and other topics. This confirms the argument by Dufner, Holley, Reed (2002) that there is knowledge exchange between organizations in the public sector and that public organizations are influenced by one another (Kankanhalli, Kohli, 2009).

The majority of the respondents states that *external pressures* have a key role in Green IS adoption, thus confirming the argument that defends a straight correlation between influence of external pressures and Green IS adoption (Fong Lei, Ngai, 2012). By the answers of the respondents, it seems that municipalities do have an understanding of the benefits of Green IS and yet follow other municipalities' examples. There is a consensus on the part of the municipalities involved that it is important to take a proactive approach towards Green IS; which is in accordance to the argument that organizations should be proactive instead of reactive in their practices (Brooks et.al., 2015). It is reasonable to infer that, for some of the respondents, interacting with other municipalities is part of their strategy for improving their own practices. It

can be related to the argument that mimicking others can be a strategy to cope with pressures (Alkalbani et.al., 2016).

7.4 Summary

To sum up, it is possible to state that external pressures play a role in adoption of Green IS by municipalities. As it could have been expected, municipalities have, like any other organization, to adhere to regulations and conform to standards and norms. *More influential to the adoption of Green IS* is the *coercive* and *mimetic pressures*; argument seen in the literature and confirmed in the interviews. Municipalities interact and cooperate with one another; which confirms the argument that there is knowledge exchange between public organization. The majority of the municipalities respondents argue that external pressures are positive to organizations, assisting them in directing their work and even in *improving their strategies* towards Green IS and sustainability.

7.5 Criticism towards the present study

As previously mentioned, there are limitations in this study, namely the fact that we only had four municipalities participants and that only four representatives were interviewed. It is therefore not possible to generalize the findings from this study. This way, the findings are related to how the municipalities in question perceive the relation between external pressures and Green IS adoption; and how they take advantage of those pressures when establishing or improving their strategies towards Green IS and sustainability.

7.6 Recommendations for future researches

Given the above-mentioned limitations, we encourage researchers to make a similar study in the Swedish context targeting a greater number of municipalities, from, if possible, varying locations (counties) in order to analyze whether the findings from the present study would be repeated. Another recommendation is to analyze how interactions between Swedish municipalities and private organizations take place, in order to check to what extent there is knowledge exchange between public and private sectors and how it occurs.

8 References

Abareshi, A., & Molla, A. (2012). Organizational green motivations for information techno logy: empirical study. Journal of Computer Information Systems, 52(3), pp.92-102.

Aiello, M.., Donnellan, B., Gelenbe, E.,, Kretsis, M., Pernici, B.,Vom - Brocke, J. (2012) What IS can do for environmental sustainability: a report from CAiSE'11 panel on Green and sustainable IS. Communications of the Association for Information Systems, 30(18).

Aier, S., & Simon, W. (2012) An institutional framework for analyzing organizational responses to the establishment of architectural transformation. Research Platform Alexandria: University of St. Gallen, p. 228.

AlKalbani, A., Deng, H., Kam, B., & Zhang, X. J. (2016) Investigating the Impact of Institutional Pressures on Information Security Compliance in Organizations. Australasian Conference on Information Systems, Wollongong, pp.1-11.

Al-Zu'bi, H.A. (2016) Analyzing the Impact of Green Information System on Environmental Sustainability. International Business Management, 10(14), pp.2719-2723.

Arshad, R., Darus, F., & Othman, S. (2011) The influence of coercive isomorphism on corporate social responsibility reporting and reputation. Social Responsibility Journal, 7(1), pp.119-135.

Avital, M., & Van Osch, W. (2010) From Green IT to Sustainable Innovation. Journal of Association for Information Systems: Americas Conference on Information Systems, p. 490

Bengtsson, F., & Ågerfalk, P. (2011) Information technology as a change actant in sustainability innovation: Insights from Uppsala. *The Journal of Strategic Information Systems*. Volume 20, Issue 1, pp. 96-112.

Bharati, P., Carberry, E.J., Chaudhury, A., & Levy, D. L. (2017). Social Movements as Catalysts for Corporate Social Innovation: Environmental Activism and the Adoption of Green Information Systems. Business and Society, p.0007650317701674.

Bjørn-Andersen, N., Gholami, R.., Hasan, H., Molla, A., & Watson, R.T. (2016). Information systems solutions for environmental sustainability: How can we do more?. Journal of the Association for Information Systems, 17(8), p.521.

Bose, R., & Luo, X. (2011) Integrative framework for assessing firm's potential to undertake Green IT initiatives via virtualization - A theoretical perspective. Journal of Strategic Information Systems, 20, pp.38-54.

Boudreau, M.C., Chen, A.J., & Watson, R.T. (2010) Information Systems and Environmentally Sustainable Development: Energy Informatics and New Directions for the IS Community, Management Information Systems Quarterly, 34, pp., 23–38.

Boudreau, M.C., Chen, A.J., Karahanna, E., & Watson, R.T. (2011) An institutional perspective on the adoption of Green IS & IT. Australasian Journal of Information Systems, 17(1).

Boudreau, M.C, Chen, A. J., Karahanna, E., & Watson, R. T. (2009) Organizational adoption of green IS and IT: An institutional perspective. Journal of Association for Information Systems: Proceedings of the 13th International Conference on Information Systems, Phoenix, p. 142.

Brauer, B., Eisel, M., & Kolbe, L. M. (2015) The State of the Art in Smart City Research – A Literature Analysis on Green IS Solutions to Foster Environmental Sustainability. Journal of Association for Information Systems: Pacific Asia Conference on Information Systems Proceedings, 74.

Brauer, B., & Kolbe, L. (2016) Towards IS-enabled Sustainable Communities–A Conceptual Framework and Research Agenda. AIS Electronic Library: Twenty-second Americas Conference on Information Systems, San Diego, p. 18.

Brocke, J.V., Dwyer, C., Elliot, S., Melville, N., & Watson, R.T. (2012) Green information systems: directives for the is discipline. AIS electronic Library: Thirty-Third International Conference on Information Systems, Orlando, pp. 1-4.

Brooks, S., Sarker, S., & Wang, X. (2013) A review of green IS research and directions for future studies, Communications of the Association for Information Systems, 37(1), pp.395429.

Brooks, S., Sarker, S., & Wang, X. (2012) Unpacking green IS: a review of the existing literature and directions for the future. Springer Linq: In Green business process management, pp. 15-37.

Brooks, S., Sarker, S., & Wang, X. (2015) Understanding Green IS Initiatives: A Multitheoretical Framework. Communications of the Association for Information Systems, 37(1), pp.1-32.

Brown, I., McGibbon, C., & Petzer, C., (2011) Adoption of Green IS in South Africa: an exploratory study. In Proceedings of the South African Institute of Computer Scientists and Information Technologists Conference on Knowledge, Innovation and Leadership in a Diverse, Multidisciplinary Environment, pp. 330-333.

Berrone, P.l, Fosfuri, A., Gelabert, L., & Gomez-Mejia, L.R. (2013) Necessity as the mother of 'green' inventions: Institutional pressures and environmental innovations. Strategic Management Journal, 34(8), pp.891-909.

Bryman, A. (2002) Samhällsvetenskapliga metoder. Liber, Malmö

Business Insider, (2016) Here is how the Internet of Things will explode by 2020 http://www.businessinsider.com/what-is-the-internet-of-things-definition-20168?r=US&IR=T&IR=T [2017-05.20]

Butler, T. (2011) Compliance with institutional imperatives on environmental sustainability: Building theory on the role of Green IS. Journal of Strategic Information Systems, 20, pp. 626.

Carbo, J., Dao, V., & Langella, I. (2011). From green to sustainability: Information Technology and an integrated sustainability framework. The Journal of Strategic Information Systems, 20(1), pp.63-79.

Chen, S.S., Chuang, Y..W., Lai, V.S., & Liu, C.K. (2013) Technical Isomorphism And Organizational Homogenization. Journal of Association for Information Systems: In European Conference on Information Systems, p. 103.

Chen, H., Dos S., Brian. L., Mookerjee, V. M., & Zhiqiang, Z. (2008) Is IT really becoming a commodity? Association for Information Systems: International Conference on Information Systems Proceedings 2008, 73.

Cooper, V., Hassan, H., & Molla, A. (2014) A green IS Taxonomy. Faculty of Business Papers, Australia, University of Wollongong, pp. 98-107.

Cooper, V., Ijab, M.T., & Molla, A. (2012) Green information systems (green IS) practice in organisation: tracing its emergence and recurrent use. Association for Information Systems: America Conference on Information Systems Proceedings, 6.

Cooper, V., Corbitt, B., Deng, H., Molla, A., Peszynski, K., Pittayachawan, S., & Teoh, S.Y. (2008) E- readiness to g-readiness: Developing a green information technology readiness framework. 19th Australasian Conference on Information Systems, Christchurch, pp. 669-678.

Corbett, J., & El-Idrissi, S.C. (2016) Green IS research: A modernity perspective. Communications of the Association for Information Systems, 38(30), pp.596-623.

Cordeiro, J. Zhu, Q. & Sarkis, J., (2013). Institutional pressures, dynamic capabilities and environmental management systems: Investigating the ISO 9000–Environmental management system implementation linkage. Journal of environmental management, 114, pp.232-242.

Currie, W., & Gozman, D. (2014). Institutional pressures on financial services firms: the role of information systems in regulatory compliance. In: 8th Mediterranean Conference on Information Systems, Italy, Verona, p. 37524.

Deng, Q., & Ji, S. (2015) Organizational Green IT Adoption: Concept and Evidence. Sustainability, 7(12), pp.16737-16755.

Deng, Q., Ji, S., & Wang, Y. (2015) Green IT Practice Disclosure: An Examination of Corporate Sustainability Report in IT Sector. AIS Electronic Library, Canada, Sprott School of Business: Carleton University.

Denscombe, M. (2000) Forskningshandboken – För småskaliga forskningsprojekt inom samhällsvetenskaperna. Lund, Studentlitteratur.

Dufner, D., Lyn. M. H., & Reed, B. J.(2002) Can private sector strategic information systems planning techniques work for the public sector?. Communications of the Association for Information Systems, 8(1), p.28.

Eslövs kommun, (2016). Ekokommunen Eslöv
http://www.eslov.se/miljoklimat/kommunensmiljoarbete/ekokommunen.15210.html   [2017-05-21]

Eurocies (2016) Green Digital Charter- collection of casestudies
http://www.eurocities.eu/eurocities/documents/Green-Digital-Charter-collection-of-casestudies-2016-WSPO-AHRL63) [2017-05-20]

European Comission, (2015). Creating a digital Society, Digital single market
https://ec.europa.eu/digital-single-market/en/society [2017-05-20]

Fong-Lei, C., Wai, T., & Naghi., E. (2012) Green IS assimilation: A theoretical framework and research agenda. Americas Conference on Information Systems, p. 2.

Frumkin, P., & Galaskiewicz, J. (2004) Institutional Isomorphism and Public Sector Organizations. Journal of Public Administration Research and Theory: Oxford Academic, 14(3), pp. 283-307

Gholami, R., Molla, A., Ramayah, T., & Sulaiman, A.B. (2013) Senior managers' perception on green information systems (IS) adoption and environmental performance: Results from a field survey. Information & Management, 50(7), pp.431-438.

Goodin, R. E., Moran, M., & Rein, M. (red.). The Oxford handbook of public policy, 689-708. New York, NY: Oxford University Press.

Grant, N.C, & Marshburn, D. G. (2014) Understanding the Enablers and Inhibitors of Decision to Implement Green Information Systems: A Theoretical Triangulation Approach. Americas Conference on Information Systems, Savannah, pp. 1-9.

Gosain, S. (2004) Enterprise information systems as objects and carriers of institutional forces: the new iron cage?. Journal of the Association for Information Systems, 5(4), p.6.

Gutierrez, O., & Zhang, W. (2007) Information systems research in the nonprofit context: A new frontier. Americas Conference on Information Systems 2007 Proceedings, p.353.

Hilpert, H., Kranz, J., & Schumann, M. (2013) Leveraging Green IS in logistics. Business and Information Systems Engineering, 5(5), pp.315-325.

Hjertströn, A., Nilsson, E. SVT Nyheter (2016). Här är Norbottens bästa miljökommun
https://www.svt.se/nyheter/lokalt/norrbotten/har-ar-norrbottens-basta-miljokommun [2017-05-21]

Iacobelli, L. B., Merhout, J.W., & Olson, R. A. (2010) Green/Sustainable IT/IS: Concepts and Cases. Americas Conference on Information Systems, p. 104.

Idemudia, E.C., & Raisinghani, M.S. (2015) Green Information Systems for Sustainability. Handbook of Research on Waste Management Techniques for Sustainability, p.212.

Ijab, M.T. (2011) Studying Green Information Systems as Practice. Association for Information System: In Proceedings of SIG Green Workshop, Sprouts: Working Papers on Information Systems, 11, p. 16.

Ijab, M. T., Kassahun, A. E., Molla, A., & Teoh, S. Y. (2010) Seeking the "green" in "Green IS": A spirit, practice and impact perspective. Association for Information Systems: Proceedings of the 14th Pacific Asia Conference on Information Systems, Taipei, Taiwan, p. 46.

James, S., Lahti, T., (2017) Eco-municipalities- Sweden and the United States A System Approach to create sustainable communities
http://www.instituteforecomunicipalities.org/Eco-municipalities.html [2017-05-21]

Jarrahi, M.H., Sawyer, S. (2014). Sociotechnical approaches to the study of Information Systems. In Computing handbook, Third Edition: Information systems and information technology, pp. 5-1.

Jacobsen, D.I. (2002) Vad, hur och varför? Om metodval i företagsekonomi och andra samhällsvetenskapliga ämnen. Lund, Studentlitteratur.

Jenkin, T.A., McShane, L. & Webster, J. (2011). An agenda for 'Green'information technology and systems research. Information and Organization, 21(1), pp.17-40.

Jun, S., Yang, Z., Zhang, Y., & Wang, Y. (2016) Green Information Systems, green culture and green innovation effectiveness: A triad model. Association for Information Systems :Pacific Asia Conference on Information Systems Proceedings, 98.

Kankanhalli, A., & Kohli R. (2009) Does public or private sector matter? An agenda for ISresearch in E-Government. Association for Information Systems: Pacific Asia Conference on Information Systems Proceedings, 9.

Koo, C., Sarkis, J., & Watson, R.T. (2013) Green information systems & technologies-this generation and beyond: Introduction to the special issue. Information Systems Frontiers, 15(5), p.695.

Kvale, S. (1997) Den kvalitativa forskningsintervjun. Lund, Studentlitteratur.

Linderoth, Ulf, Malmö Stad, (2017). Hållbar IT http://malmo.se/Kommun--politik/Sa-arbetar-vi-med.../IT-och-digitalisering/Hallbar-IT.html [2017-05-21]

Loeser, F. (2013) Green IT and Green IS: Definition of constructs and overview of current practices. AIS Electronic Library: Proceedings of the Nineteenth Americas Conference on Information Systems, Chicago, Illinois.

Loos, P., & Watson, R.T. (2013) Information Systems for Environmental Sustainability. Business & Information Systems Engineering, 4(5) pp.47-47.

Lunds Kommun, (2017). Lunds kommuns Hållbarhetsarbete
    https://www.lund.se/globalassets/lund.se/bygg_bo/klimat-miljo-och-hallbarhet/rele-
    vantamiljodokument/lunds-kommuns-hallbarhetsarbete-en-sammanfattning.pdf [2017-
    05-22]

Lunds Kommun, (2017). Miljöprogram LundaEkoII
    https://www.lund.se/bygga-bo--miljo/klimat-miljo-och-hallbarhet/undersida-kli-
    mat2/miljoprogram---lundaeko-ii/ [2017-05-22]

Lunds Kommun, 2017. LundaMats-Hållbara resor och transporter
    https://www.lund.se/trafik--stadsplanering/lundamats---hallbara-resor-och-transporter/
    [2017-05-20]

March, J. G., & Olsen, J.P. (2004) The logic of appropriateness, Arena, 9.

Marett, K., Otondo, R.F. & Taylor, G.S. (2013) Assessing the Effects of Benefits and Institut-
    ional Influences on the Continued Use of Environmentally Munificent Bypass Systems
    in Long-Haul Trucking. Management Information Systems Quarterly, 37(4), pp.1301-
    1312.

Marketing and Strategy. (2017) Environmental Scanning
    http://www.mbaskool.com/business-concepts/marketing-and-strategy-terms/13284en-
    vironmental-scanning.html [2017-05-21]

Malhotra, A., Melville, N.P., & Watson, R.T. (2013) Spurring impactful research on informat-
    ion systems for environmental sustainability. Management Information Systems Quar-
    terly, 37(4), pp.1265-1274.

Modell, S. (2012) Strategy, political regulation and management control in the public sector:
    institutional and critical perspectives. Management Accounting Research, 23(4),
    pp.278-295.

Muhammad, M.R. (2009) Antecedents of IT Alignment in Public Sector: Case of E-Syariah
    Implementation in Malaysia. Association for Information Systems: UK Academy for
    Information Systems Conference Proceedings 2009, 36.

Naden, C. (2015) The newly revised ISO 14001 is here
    https://www.iso.org/news/2015/09/Ref1999.html [2017-05-20]

Oinas-Kukkonen, H., & Shevchuk, N. (2016) Exploring Green Information Systems and Tech-
    nologies as Persuasive Systems: A Systematic Review of Applications in Published Re-
    search. AIS Electronic Library: Thirty Seventh International Conference on Information
    Systems, Dublin, p.1-11.

Oliver, C. (1991) Strategic responses to institutional processes. Academy of Management Re-
    view, 16(1), pp. 145-179.

Parent, M., & Tingling, P. (2002) Mimetic Isomorphism and Technology Evaluation: Does Imitation Transcend Judgment?. Journal of the Association for Information Systems, 3(1), p.5.

Peters, B.G. (2000) Institutional theory: Problems and prospects. Social Science Open Access Repository: Reihe Politikwissenschaft/ Institut fur Höhere Studien, Abt Politikwissenschaft

Qiuhong, T., Wang, H., & Wenhui, Y. (2013) Beyond ANT and Sociomateriality: Explore Symbolic Power to Information System Adoption. Journal of Association for Information Systems: Pacific Asia Conference on Information Systems Proceedings, p.232.

Rause, M. (2007) Digitalization
http://whatis.techtarget.com/definition/digitization [2017-05-10]

Rause, M. (2016) Virtualization
http://searchservervirtualization.techtarget.com/definition/virtualization [2017-05-20]

Recker, J., Sedera, D., & Tushi, B. (2014). Green it segment analysis: an academic literature review. AIS Electronic Library: Twentieth Americas Conference on Information Systems, Savannah, pp.1-15

Rensfeldt, Elsa, Norrbottens Kuriren (2016). Haparanda allt miljövänligare Visar granskning http://www.kuriren.nu/nyheter/tornedalen/haparanda-alltmiljovanligare-visar-granskning8899586.aspx [2017-05-21]

Silvius Gilbert, A.J. (2012) The role of Organizational Change in Green IS: Integrating Sustainability in Projects. Association for Information Systems: 5th International Conference on Information Resources Management, Vienna, 35.

Sveriges kommuner och landsting. (2017) Om SKL
https://skl.se/tjanster/omskl.409.html [2017-05-20]

Sveriges Offentliga Inföpare.(2017) Sveriges Offentliga inköpare
http://www.soi.se/om-soi [2017-05-20]

Sveriges Rikes Lag.(2016) Lag (2016: 1145) om offentlig upphandling
https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag20161145-om-offentlig-upphandling_sfs-2016-1145 [2017-05-20]

TCO-Development. (2017) TCO Certified
http://tcocertified.se/tco-certified/ [2017-05-20]

Zheng, D. (2014) The Adoption of Green Information Technology and Information Systems: an Evidence from Corporate Social Responsibility. Association for Information Systems: In Pacific Asia Conference on Information System, p. 237.

Winkler, T. J. (2013) IT Governance Mechanisms and Administration/IT Alignment in the Public Sector: A Conceptual Model and Case Validation. Association for Information Systems: Wirtschaftsinformatik Proceedings 2013. 53.

Wijkman, A., Karlsson, V., m fl., TCO Development (2015). Sveriges kommuner saknar strategi för hållbar IT https://www.dagenssamhalle.se/debatt/sveriges-kommuner-saknar-strategi-foer-hallbar-it15250 [2017-03-31]

Appendix 1 -Table regarding information on the articles used and their relevance.

The following table consist of a list of articles used in the current paper, with information on their respective titles, authors and year of publication, methods, and theories. Additionally, it is informed how relevant each article was for this paper, from a scale from "Not Relevant", "Not So Relevant" to "Relevant".

Tabell 1: Table regarding information on the used articles and their relevance

Nr	Title	Authors & Year	Method	Theories	Relevance
1	A Green IS taxonomy	Hasan, H., Molla, M., & Cooper, V, (2014)	Literature review (Academic papers)	Institutional Theory	Not so relevant
2	A research agenda on Managerial intention to Green IT adoption: From Norm Activation Perspective	Lei, C.F. & Ngai, E.W.T. (2014)	Literature review	Norm Activation Model (NAM), belief-action-outcome framework, theory of reasoned action, theory of planned behavior, personal norm, Institutional Theory	Not so relevant
3	A Review of Green IS Research and Directions for Future Studies	Brooks, S., Sarker,S., & Wang, X. (2013)	Literature Review: Analyses of theoretical and practical literature	Strategic green IT alignment framework, Resource-based view, Institutional theory, technology-organization environment framework, adaptive structuration theory,	Relevant
4	Adoption of Green IS in South Africa - An exploratory study	Brown, I., McGibbon, C., & Petzer, C.(2012)	Qualitative Research – semi-structured interviews with representatives from seven companies	Institutional Theory, Integrative Model	Not so relevant
5	An agenda for Green Information Technology Research	Jenkin, T.A., Webster, J. & McShane, L., (2011)	Literature review (academic literature)	Institutional Theory, Resource Dependency Theory, Organizational Learning Theory Resource Based View (RBV) of the firm, Natural-Resource-Based View of the firm	Relevant
6	An Institutional Perspective on the adoption of Green IS & IT	Aier, S., & Weiss, S. (2012)	Quantitative Research-survey with 75 organizations	Natural-Resource-Based View of the firm,Institutional, Theory Institutional isomorphism	Relevant

7	Analyzing the Impact of Green Information System on Environmental Sustainability	Al-Zu´Bi, H., (2016)	Quantitative Research - Questionnaires 6 companies as participants	Processing theoretical frameworks	Not so relevant
8	Assessing the effects of benefits and institutional influences on the continues use of environmental bypass systems in Long-Haul trucks	Marett, K., otondo, R.F., Taylor, G.S (2013)	Quantitative Research paper-and-pencil survey, 212 participants	Self-Determination Theory, Institutional Theory	Relevant
9	Beyond ANT and Socio-materiality: Explore Symbolic Power to Information System Adoption	Tang, Q., Wang, H., Ye, W., (2013)	Literature Review- Theoretical papers	Practice Theory, Actor-Network Theory (ANT), Social-Material Theory, institutional theory	Relevant
10	Compliance with institutional imperatives on environmental sustainability: Building theory on the role of Green IS.	Butler, T. (2010)	Literature Review (Theoretical papers), Empirical Study (Qualitative Research – participant observation, semi-structured interviews)	Institutional Theory, Organizational Theory, Sense-making Theory	Relevant
11	Enterprise Information Systems as Objects and Carriers of Institutional Forces: The New Iron Cage?	Gosain, S. (2004)	Literature Review (Theoretical papers)	Institutional Theory, Neo-Institutional Theory, Structuration Theory	Relevant
12	Social Movements as Catalysts for Corporate Social Innovation Environmental Activism and the Adoption of Green Information Systems	Bharati, P., Carberry, E., Chaudhury, A., & Levy, D.L. (2017)	Literature Review, Empirical Study (Quantitative Research)	Institutional Theory	Relevant

13	Exploring Green Information Systems and Technologies as Persuasive Systems: A Systematic Review of Applications in Published Research	Oinas-kukkonen, H., & Shevchuk, N., (2016)	Literature Review	Persuasive Systems Design (PSD) model, Goal Setting Theory, Theory of Reasoned Action/Planned Behavior	Relevant
14	From Green IT to Sustainable Innovation	Avital, M., &Van Ocsh, W. (2010)	Literature Review (Based on an empirical research from another paper), Case Study Method.	Sustainable Innovation Approach (Framework), Societal and Institutional Frameworks	Relevant
15	From Green to Sustainability: Information Technology and an integrated sustainability framework: Green Information Systems for Sustainability	Dao, V., Carbo, J., & Langella, I. (2011)	Literature Review (Theoretical papers)	Resource Based View, Corporate Social Responsibility (CSR) framework, Green Information Technology Systems (IT/IS) research framework	Relevant
16	Green Information Systems (Green IS) Practice in Organisation: Tracing its Emergence and Recurrent Use	Cooper, V., Ijab, M.T., & Molla, A., (2012)	Empirical Study (Qualitative Research - semi-structured interviews and document collection)	Theory of Practice, Institutional Theory, Organization Theory.	Relevant
17	Green information systems & technologies – this generation and beyond: Introduction to the special issue	Koo, C., Sarkis., J., & Watson, R.T. (2013)	Literature Review (based upon papers with theoretical approaches, empirical studies, both quantitative and qualitative researches)	Accountability Framework, Strategic Management Framework, Theory of Belief-Action-Outcome, Coordination Theory.	Not so relevant
18	Green Information Systems, Green Culture and Green Innovation Effectiveness: A tried Model	Sun, j., Wang, Y., Yang, Z., & Zhang, Y. (2016)	Quantitative Research (Surveys and questionnaires)	Technology-Organization Environment (TOE) framework, Resource-Based View	Not so relevant

19	Green IS Assimilation: A Theoretical Framework and Research Agenda	Lei, C.F. & Ngai, E.W.T. (2012)	Literature Review (Theoretical papers)	Institutional Theory, Organizational Information Processing Theory, Organization Theory	Relevant
20	Green IS. Information Systems for Environmental Sustainability	Loos, P., vom Brocke, J., & Watson, R.T. (2013)	Literature Review (Theoretical papers)	Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM)	Not so relevant
21	Green IS Research: A Modernity Perspective	Corbett, J., & El Idrissi, S.C.(2014)	Literature Review (Theoretical papers)	Institutional Theory, conceptual framework of the modernity tetrahedron, Beliefs-Actions-Outcomes (BAO) Framework.	Relevant
22	Green IT/IS Adoption as Corporate Ecological Responsiveness: An Academic Literature Review	Dalvi-Esfhani, M. (2017)	Literature Review (Academic papers: journals and material from conferences)	Corporate Social Responsibility (CSR), Corporate Ecological Responsiveness (CER)	Relevant
23	Green IT and Green IS: Definition of Constructs and Overview of Current Practices	Loeser, F. (2013)	Literature Review (Both theoretical papers and empirical research)	Theory of the Natural Resource-Based View	Relevant
24	Green IT – An Implementation Framework	Grant, G., Mann, H., & Mann, S. (2009)	Literature review, proposal of a structural framework	Deming's theory of continuous improvement (principle of the Deming Cycle)	Relevant
25	Green IT Segment Analysis: An Academic Literature Review	Recker, J., Sedera, S., & Tushi, B.T. (2014)	Literature Review (Academic papers, both theoretical and case studies and analyzes of additional materials from conferences)	Technology Organization Environment, Organizational Theory, Institutional Theory, Actor Network Theory, Motivation Theory	Relevant
26	Information Systems Solutions for Environmental Sustainability: How Can We Do More?	Bjørn-Andersen, N., Gholami, R., hasan, H., & Watson, R.T. (2016)	Literature Review (Theoretical academic papers)	The belief action-outcome framework, affordance theory	Relevant

27	Information Technology as a change actant in sustainability, Insights from Uppsala.	Bengtsson, F., & Ågerfalk, P.J (2011)	Literature review	Actor Network Theory	Relevant
28	Institutional Isomorphism and Public Sector Organizations	Frumkin, P., & Galaskiewicz, J (2004)	Literature Review, Empirical Study (Analyzes of the results of a quantitative study)	Institutional Theory, Organization Theory	Relevant
29	Institutional Pressures on Financial Service Firms: The Role of Information Systems in Regulatory Compliance	Currie, W., & Gozman, D. (2014)	Qualitative research (semi-structured, in-depth interviews)	Institutional Theory	Relevant
30	Institutional Theory: Problems and Prospects	Peters, B.G. (2000)	Literature Review (Theoretical studies)	Institutional Theory	Relevant
31	Investigating the Impact of Institutional Pressures on Information Security Compliance in Organizations	AlKalbani, A., Deng, H., Kam, B., & Zhang, X.J. (2016)	Quantitative research (survey questionnaire)	Institutional Theory	Relevant
32	Investigating User Resistance to Information Systems Implementation: A Status Quo Bias Perspective	Kankanhalli, A., & Kim, H.W. (2009)	Quantitative Research (field survey with a number of employees of a given company, data collection procedures and test of the data gathered)	Status Quo Bias Theory, Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Unified Theory of Acceptance and Use of Technology (UTAUT).	Relevant
33	Leveraging Green IS in Logistics Developing an Artifact for Greenhouse Gas Emission Tracking	Kranz, J., & Schumann, M. (2013)	Literature Review (Theoretical and empirical papers)	Institutional Theory	Not so relevant
34	Mimetic Isomorphism and Technology Evaluation: Does Imitation Transcend Judgment?	Tingling, P., & Parent, M. (2002)	Quantitative Research (surveys with Likert-type scale, Web-based case study evaluation with 348 participants)	Institutional Theory	Relevant

35	Necessity as the mother of 'Green' Inventions: Institutional Pressures and environmental innovations	Berrone, P., Fosfuri, A., galabert, L., & Gomez- Meija, L.R. (2013)	Quantitative Research (Analyses of data regarding the performance of different firms in environmental questions, data from databases: TRI,CHI,COMPUSTAT)	Institutional Theory, Resource Based View (RBV).	Relevant
36	Organizational Adoption of Green IS & IT: An Institutional Perspective	Chen, A.J., Boudreau, M.C., Karahanna, E., & Watson, R.T. (2009)	Quantitative Research (A questionnaire-based, cross-sectional field study)	Institutional theory, Natural-Resource-Based View	Relevant
37	Organization Green IT Adoption: Concept and Evidence	Deng, Q., & Sha-obo, Ji. (2015)	Literature Review (theoretical studies)	Theoretical Framework on Organizational Green IT adoption (OGITA), Diffusion of Innovation Theory (DOI), Institutional Theory, Resource Based View (RBV) of the firm and Organizational Cultural Theory.	Relevant
38	Organizational Green Motivations for Information Technology: Empirical Study	Abareshi, A., & Molla, A. (2012)	Quantitative Research (survey with 176 organizations)	Organizational Motivation Theory	Relevant
39	Senior managers' perception on green information systems (IS) adoption and environmental performance: Results from a field study	Gholami-Sulaiman R., & Molla, R. (2013)	Quantitative Research (Survey Questionnaire – 600 companies)	Belief-Action-Outcome framework (Framework chosen by the authors), Theory of Reasoned Action (TRA), Motivation-Ability-Expectation, Motivational Theory, Institutional Theory, Technology-Organization-Environment.	Relevant
40	Sociotechnical approaches to the study of Information Systems	Jarrahi, M.H., & Sawyer, S. (2013)	Literature Review (theoretical studies)	Institutional Theory, Adaptive Structuration Theory (AST), Actor network theory (ANT)	Relevant

41	Spurring Impactful Research on Information Systems for Environmental Sustainability	Malhotra, A., Melville, N.P., & Watson, R.T. (2013)	Literature Review (theoretical studies and empirical studies - case interpretation, survey, and field experiment)	Institutional Theory	Relevant
42	Strategy, political regulation and management control in the public sector: Institutional and critical perspectives	Modell, S., 2012	Qualitative Research (three-year research, semi-structured interviews with 19 participants, group discussions	Institutional Theory, functionalist accounts of Strategic Management Accounting (SMA) - not a framework, though.	Relevant
43	Strävan mot en hållbar kommun – En fallstudie avEkologisk Grön IS I Varbergs Kommun	Bengtsson, M., Brandt, C.H. (2013)	Qualitative Research (Semi-structured interviews, analyses of the data gathered and documents)	Resource-Based View (RBV)	Relevant
44	Studying Green Information Systems as Practice	Ijab, M.T. (2011)	Literature Review (Theoretical papers)	Belief-Action-Outcome (BAO) framework, Theory of Practice, Energy Informatics Framework.	Relevant
45	Technical Isomorphism and Organizational Homogenization	Chuang, Y.W., Liu, C. K. W., Lai, V. S. K., & Shiuann-Shuoh, C. (2013)	Quantitative Research (pilot test – interview with a few companies - questionnaires with a Likert-type scale; 500 companies as participants)	Institutional theory	Relevant
46	The adoption of Green Information Technology and Information Systems: An evidence from corporate Social Responsibility	Zhend, D. (2014)	Literature Review (Theoretical papers)	Corporate Social Responsibility framework (CSR), Theory of Innovation Diffusion, technology-organization-environment (TOE) framework.	Relevant
47	The influence of coercive isomorphism on corporate social responsibility reporting and reputation	Arshad, R.,Darus, F., & Othman, S. (2011)	Quantitative Study (Sample comprising of 117 companies located in Malaysia, analysis of their CSR annual reports)	Corporate Social Responsibility (CSR), Institutional Theory	Relevant

48	The State of Art in Smart City Research - A literature Analysis on Green IS solutions to foster Environmental Sustainability	Brauer, B., Eisel, M., & Kolbe, L.M. (2015)	Literature Review, "Literature Discovery Process"	Proposed Conceptual Framework	Relevant
49	Towards a typology of Green IS strategies: Insights from case study research	Erek, K., Loeser, F., & Zarnekow., R (2012)	Exploratory case study, cross-case analysis (exploratory multiplecase study), Qualitative research: 36 semi-structured interviews.	Organization-centric conception of IS strategy, Resource-Based View (RBV)	Relevant
50	The Sustainability Imperative in Information Systems Research	Albizri, A., Bharati, P., Bourdreau, M., Butler, T., Fridgen, G., Seidel, S., Watson, R.T., & Watts, S. (2017)	Literature Review (Theoretical papers)	Triple-bottom-line principle, explanatory and predictive theory, business school theory, economic theory.	Relevant
51	Towards a Structurational Model of Green Information Systems	Compeau, D., & Kennedy, M. (2016)	Literature Review (Theoretical Papers)	Structurational Theory, Practice Theory, Resource Based View, Actor Network Theory,Institutional Analysis,Theory of Planned Behavior (TPB).	Relevant
52	Towards IS-enabled Sustainable Communities - A Conceptual Framework and Research Agenda	Brauer, B., & Kolbe, L (2016)	Literature Review (Theoretical Papers)	User-centric framework	Relevant
53	Understanding Green IS Initiatives: A Multi-Theoretical Framework	Broks, S., Sarker, S., & Wang, X. (2015)	Literature Review (Theoretical and Empirical papers – case studies)	Adaptive Structuration Theory, Organizational Theory Natural Resource-based View (NRBV).	Relevant
54	Understanding the Enablers and Inhibitors of Decision to Implement Green Information Systems: A Theoretical Triangulation Approach	Grant, N.C., & Marshburn, D.G. (2014)	Literature Review (Theoretical and Empirical papers – case studies)	Institutional Theory, Management Fashion Theory, Status Quo Bias Theory, Institutional Isomorphism	Relevant

55	Unpacking Green IS: A Review of the Existing Literature and Directions for the Future	Brooks, S., Sarker, S., &Wang, X. (2012)	Literature Review (practitioner and academic literature)	Implementation Framework	Relevant
56	Was the Copenhagen Summit doomed from the start? Some insights from Green IS research	Dwyer, C., & Hasan, H. (2010)	Literature Review (Academic papers and papers from workshops)	Institutional Theory, Green IT Adoption Model	Relevant
57	What IS Can Do for Environmental Sustainability: A Report from CAiSE'11 Panel on Green and Sustainable IS	Aiello, M., Donnellan, B., Gelenbe, E.,Pernici, B., & vom Brocke , J.(2012)	Literature Review (Academic papers)	Basel Action Network (BAN)	Not so relevant
58	Institutional Motivations in the Adoption of Innovations: The Case of E-Government	Jun, K.N., & Weare, C., (2011)	Quantitative study, analyzes of data from bi-annual surveys regarding municipal e-government	Communications Theory, Contingency Theory, Institutional Theory	Relevant

Appendix 2 -Table regarding the interview guide

Table regarding the pieces of literature and hence concepts which influenced us when building our interview guide. The table is divided into two sections, one regarding the concepts related to each question and a second one, regarding information on the articles where the concepts in questions were taken from.

Tabell 2: Interview Guide

Categories (and related concepts)	Interview Questions
Definition of Green IS	1- How would you define Green IS (Green Information System)?
Benefits of Green IS	1.1) How do you perceive Green Information Systems (Green IS)? Is it positive, helpful for your organization, or for organizations in general? In what ways is it positive? In what areas of operations /activities can it be useful, in your opinion?
Benefits of Green IS	1.2) In your opinion, how beneficial is Green IS for your organization, or organizations in general, society, to a greater extent, and the environment? Please, provide some examples of benefits in these aspects (organization, society and environment).
Green IS Implementation	2- Has your organization implemented Green IS? Why or why not?
Green IS Implementation	3- If so, what are the requirements for its implementation, in accordance to your experiences?
Green IS Implementation	4- How is Green IS implementation carried out? In other words, what are its steps, from the consideration of adopting Green IS to its final implementation?
Institutional Pressures	5- How do external factors influence the way your organization, or organizations in general, regard/perceive Green IS? Please, develop your answers.
Institutional Pressures (Coercive)	5.1) To what extent does the existence of laws and regulations influence an organization when it comes to its willingness to adopt Green IS? What regulations and laws are the ones most taken into account when deciding upon adopting Green IS?
Institutional Pressures (Coercive)	5.2) To what extent does the existence of environmentalist groups, such as NGOs, influence an organization when it comes to its willingness to adopt Green IS? What movements or groups are the most influential ones, in your opinion?

Institutional Pressures (Normative)	5.3) To what extent does the existence of other organizations in the same field of activity - and which have already adopted Green IS - influence an organization's willingness to adopt Green IS? What organizations come to your mind?
Institutional Pressures (Normative)	5.4) To what extent does the existence of norms/standards- for instance, in the geographic area where an organization which has not yet adopted Green IS is located - influence an organization when it comes to its willingness to adopt Green IS? Could you please give example of norms/standards?
Institutional Pressures (Normative)	5.5) To what extent do the expectations of stakeholders, such as organization's partners and customers (or in this case, citizens) regarding one's commitment to environmental sustainability influence an organization's willingness to adopt Green IS? Could you please exemplify in what ways it occurs?
Green IS adoption & Question on Reputation	5.6) To what extent does the pursuit for improving an organization's reputation influence its willingness to adopt Green IS?
Green IS adoption & Question on Legitimacy	5.7)To what extent does the pursuit for legitimacy influence an organization's willingness to adopt Green IS?
Institutional Pressures	5.8) In your opinion, are there other external factors that influence an organization's behavior towards Green IS?
Benefits of Institutional Pressures	6 - In what ways, according to your opinion, can an organization take advantage of aforementioned external factors/pressures and benefit from them?
Impact of Institutional Pressures on IS adoption	6.1) In what ways can those external factors be beneficial or negative for an organization when it comes to handling Green Information Systems' related questions?
Institutional Pressures & Organizations' Strategy	6.2) In you opinion, is it possible to improve one's strategy towards becoming a more sustainable organization by taking into consideration those external factors?
Public Organizations and Knowledge Exchange	6.3) To what extent do public organizations (municipalities) interact with one another and exchange their knowledge and experiences regarding Green IS?How does such interaction or knowledge exchange benefit organizations which have not yet adopted Green IS?
Particularities of public organizations	6.4) In your opinion, does the fact that public organizations are not competing for customers facilitate such interactions between public organizations with one another? Why is that?

Institutional Pressures (mimetic) & Influencial power of organizations	6.5) In your opinion, to what extent do public organizations (municipalities) influence one another? Are there municipalities more influential than others? In what ways?
Interaction & Knowledge exchange between Public and Private Sectors	6.6) In your opinion, to what extent do public (municipalities) and private organizations interact and exchange knowledge regarding Green IS related questions?
Interaction accross sectors & Green IS implementation	6.7) In your opinion, to what extent can public organizations follow the example of private organizations regarding the adoption and implementation of Green IS? Why is that?
Reactive Versus Proactive approach towards Green IS	7- In your opinion, how can organizations change their approaches towards Green IS, from having a reactive approach to a more proactive one?
Reactive Versus Proactive approach towards Green IS	7- (Cont.) In other words, how can organizations overcome the phase where Green IS adoption is seen as a matter of compliance to norms and so on; and start seeing it as an opportunity to take advantage from.

Tabell 3: Categories in the Interview Guide VS. Literature

Categories	Literature (Relevant Articles)
Definition of Green IS	Loeser, 2013; Deng, Ji, 2015;C. Grant, G. Marshburn, 2014.
Benefits of Green IS	Arshad, Darus, Othman, 2011; C. Grant, G. Marshburn, 2014; Silvius, 2012; Loeser, 2013; Brooks,Wang and Sarker, 2013; Brooks, Sarker, Wang, 2015; Corbett and El Idrissi, 2014; Bharati, Carberry, Chaudhury, Levy, 2017; Ali Al-Zu'Bi, 2016.
Green IS Implementation	Brooks, Sarker, Wang, 2015; Brooks, Sarker and Wang, 2013; Fong Lei, T. Ngai, 2012; Lei and Ngai, 2012.
Institutional Pressures	Boudreau,Chen,Karahanna,Watson, 2011; C. Grant and G. Marshburn, 2014; AlKalbani, Deng, Kam, Zhang, 2016; Fong Lei & T. Ngai, 2012; Currie, Gozman, 2014.
Institutional Pressures (Coercive)	C. Grant and G. Marshburn, 2014; Boudreau, Chen, Karahanna,Watson, 2011; Brooks, Sarker, Wang, 2015; Fong Lei & T. Ngai, 2012.

Institutional Pressures (Normative)	C. Grant, G. Marshburn, 2014; Fong Lei, T. Ngai, 2012; Brooks, Sarker and Wang, 2015; AlKalbani, Deng, Kam, Zhang, 2016; Aier and Weiss, 2012; Cooper, Ijab, Molla, 2012.
Green IS adoption & Reputation Question	Tang, Wang, Ye, 2013
Green IS adoption & Legitimacy Question	Bharati, Carberry, Chaudhury, Levy, 2017; C. Grant, G. Marshburn, 2014.
Benefits of Institutional Pressures	Aier,Weiss, 2012; AlKalbani, Deng, Kam, Zhang, 2016; Chen, Chuang, K. W. Liu, S. K. Lai, 2013; Cooper,Ijab,Molla, 2012.
Impact of Institutional Pressures on IS adoption	Bharati,Carberry,Chaudhury,Levy, 2017; Brooks, Sarker, Wang, 2015; Cooper, Ijab, Molla, 2012; Cooper, Hasan and Molla, 2014; Corbett and El Idrissi, 2014; Fong Lei, T. Ngai, 2012.
Institutional Pressures & Organizations' Strategy	Aier,Weiss, 2012; AlKalbani, Deng, Kam, Zhang, 2016; Boudreau,Chen,Karahanna, Watson, 2011; Cooper,Ijab,Molla, 2012.
Public Organizations and Knowledge Exchange	Dufner, Holley, Reed, 2002; Kankanhalli, Kohli, 2009; Winkler, 2013.
Particularities of public organizations	Dufner, Holley, Reed, 2002; Winkler, 2013; Kankanhalli and Kohli, 2009; Dufner, Holley, Reed, 2002.
Institutional Pressures (mimetic) & Influencial power of organizations	Boudreau,Chen,Karahanna, Watson, 2011; Fong Lei & T. Ngai, 2012; C. Grant, G. Marshburn, 2014; Brooks, Sarker and Wang, 2015.
Interaction & Knowledge exchange between Public and Private Sectors	Kankanhalli, Kohli, 2009
Interaction accross sectors & Green IS implementation	Kankanhalli, Kohli, 2009
Reactive Versus Proactive approach towards Green IS	Avital, Wietske van Osch, 2010; Brooks, Sarker,Wang, 2015; Gholami, Molla, Ramayah, Sulaiman, 2013.

Appendix 3 -Transcription-Lund Municipality (In Swedish)

Informant: Evalotta Elnertz
Intervjuare: Azra Balic
Sekreterare: Azra Balic och Ana-Carolina Donetto De lima
Datum: 2 maj 2017.
Klockan: 15.00

AB = Azra Balic
K1 = Evalotta Elnertz

AB: Tänkte vi startar med lite bakgrund för att sedan gå över till huvudfrågorna för studien och slutligen gå över till avslutningsfrågorna.

AB: Hur skulle du definiera Grön IS (Gröna Informationssystem)?

K1: Jag har en definition från 2011 som jag har kvar här som vi går efter men den är inte helt täckande och den kommer lite från vad jag upplevde på de här utbildningarna. Jag kan läsa dessa punkter, det kommer handla om vara eller tjänst som levereras som IT produkt:

- Ska ha en eller flera miljöfördelar jämfört med liknande produkt och tjänst det vill säga den skall vara grön
- Den skall ha en tydlig miljölösning, det vill säga vara 25 % bättre än en annan lösning
- Övriga miljöaspekter skall minst motsvara medelvärdet inom produkt och tjänsteområdet. Jag vet inte riktigt vad vi om fram till här.
- Alla bedömningar skall vara väldokumenterade helst av oberoende bedömare.

Detta sa vi för 6 år sedan. Vi hade inte med mycket annat eftersom det var mest hårdvara som vi pratade om då

AB: Eftersom Grön IS idag tar hänsyn till hela affärsprocessen även inkluderat den sociala biten. Är detta något ni har i åtanke.

K1: Man kan säga såhär, att rent generellt så har vi försökt att inte prata så mycket om grön IS eftersom Lunds kommun har ett stort miljöfokus. Vi har miljöprogram och miljöledningssystem Alla verksamheter skall vara gröna, så att när vi sedan har tittat på vår verksamhetsplan så har vi sätt att vi måste jobba med Grön IS. Så ideén ligger i hela processen, från övergripande verksamhetsplan till förvaltningarnas verksamhetsplaner till vår aktivitetslista. Även då både gällande anskaffning och avyttring av produkter. Vi har försökt följa hela spåret från inköp till avveckling. Vi drar även nytta av digitaliseringen för att få Grön IS. Det är inbyggt i vår tanke-sätt och tankegång. Det är inte enbart en definition utan det ingår i verksamhetsprocessen. Det finns i hela systemet så inte det är enbart IT avdelningen som är Grön och resten av verksam-heterna gör någonting annat. Hela Lund skall vara Grön.

AB: Hur uppfattar du gröna informationssystem (Green IS)? Är det positivt/användbart för din organisation eller för organisationer i allmänhet? På vilket sätt är det positivt? På vilka områden av verksamheten kan det vara bra att tillämpa det, enligt din åsikt?

K1: Vi har massor med exempel där vi har infört saker som haft positiv miljöpåverkan. Plockat bort papper från avdelningarna till exempel. Grön IS är positivt för hela och genom hela verksamheten. På sätt och vis är det bra att prata om Grön IS, men åt andra sidan när jag hör ordet kan jag också få ont i magen för det blir ett spår. Vi ska ha en grön verksamhet, ett grönt Lunds kommun. IT är en del av det. Så ibland kan jag känna att det är för mycket Grön IS. Har vi en grön IT strategi. Nej men vi har en grön verksamhetsstrategi. Är detta fel eller rätt då? Vi pratar inte om Grön Ekonomi eller Grön HR så varför skilja Grön IS från hela verksamheten?

AB: Hur bra är Grön IS för för kommunen, eller organisationer i allmänhet, samhället, i större utsträckning och miljön? Vänligen ge några exempel på fördelar i dessa aspekter (organisation, samhälle och miljö).

K1: Så ena sidan är bra för att man får fokus åt andra sidan blir det för mycket stuprör. Men samtidigt tror jag att det beror väldigt mycket på vilken organisation man har. Vissa organisationer styrs av IT men i organisationer som Lunds kommun ligger ansvaret på verksamheterna och då är det lika bra att strategi ligger där ute också eftersom IT utgör 10 procent av verksamheten och om det inte är så här så hade det fortfarande varit 90 procent av verksamheterna som inte hade varit Gröna.

AB: Har din organisation implementerat Grön IS? Varför eller varför inte? Om så är fallet, vad är kraven för genomförandet i enlighet med dina erfarenheter?

K1: JA kommunen har implementerat Grön IS eftersom Grön IS är ett delmål av att hela vår kommun ska vara Grön. Definitionen var lite som den jag sa, att det fanns en definition och sen har vi när vi har gjort våra verksamhetsprojekt eller utvecklingsprojekt att sätta miljömål. Vi har t.ex. haft aktiviteter som virtualisering och aktiviteter som att minska våra transporter genom samutnyttjande. Sen har vi haft aktiviteter att implementera avvecklingar som köps tillbaka och återanvänds.

AB: Hur genomförs Grön IS implementation? Med andra ord, vilka är stegen, från övervägande till slutgiltigt genomförande?

K1: Oftast är det så att vi beskriver ett utvecklingsområde sen tar vi fram en projektplan då sätter vi de mål till vad det är vi vill uppnå. Vi har t.ex haft resfria möten med hjälp av link när vi har jobbat med vård och omsorg. Sen sätter vi upp aktiviteter och följer upp. Det är väl den grova implementeringen som vi kan ha. Sen i vårt miljöledningssystem så definierar vi årligen aktiviteter och ställer högre krav på olika upphandlingar så att vi har en struktur.

AB: I vilken utsträckning påverkar förekomsten av lagar och förordningar en kommun när det gäller viljan om att anta Green IS? Vilka regler och lagar är de som mest beaktas vid beslut om att anta Grön IS?

K1: Detta är väl mer en miljöstrategs fråga men lagar som ändrar beteenden är sådant vi påverkas av. T.ex. den nya kemikalieskatten som snart kommer. Sen klart det finns andra lagar som påverkar och styr t.ex etiska sådana gällande bland annat informations-känslighet. Lagar kring inköp och upphandling är ganska stora. Även interna policyn och reglementen och regelverk styr oss mycket. Vi har bland annat lundamats och lundaeko som styr oss. Det kan vi plocka fram material till dig om sen har vi miljöledningssystem och då är det ISO som gäller. Men där sätter man miljömål och krav och alla verksamheter skall förhålla sig efter detta.

AB: I vilken utsträckning påverkar förekomsten av miljöorganisationer, såsom icke-statliga organisationer, en kommun när det gäller viljan om att anta Grön IS? Vilka rörelser eller grupper är i så fall de mest inflytelserika, enligt din åsikt?

K1: Detta var inte lätt du. De är drivande så klart sen så blir de också påverkade i sin tur. Men vi styrs av politiken och man har väldigt hög ambitionsnivå.

AB: I vilken utsträckning påverkar förekomsten av andra organisationer inom samma verksamhetsområde, det vill säga de som redan har antagit Grön IS, en organisations vilja att anta Grön IS?

K1: Det är väl klart att man delar erfarenhet mellan kommunerna. Man delar kravspecifikationer inför upphandlingar och delar på erfarenhet. Vi har bland annat tittat på Malmö Kommun men eftersom vi istället ser begreppet som helhet och inte utefter " enbart Grön IS" är vi inte uppdaterade längre hur andra kommuner har det. Det ligger också en morot i utmärkelser samtidigt som man inte vet hur det här bedöms. Vi hade ju inte en Grön IS strategi dock hade vi en Grön verksamhetsstrategi. Vi har dock ett diplom som hänger på väggen en utmärkelse internt för vårt miljöarbete.

AB: I vilken utsträckning påverkar normer/standarder en organisations vilja att införa Grön IS. Kan du ge exempel på normer/standarder?

K1: Vi följer statens och kommunens satta normer och standarder främst gällande inköp men jag kan inte komma på exakt vad alla heter. Men jag skulle vilja säga att vi jobbar proaktivt med med detta. Vi har gjort väldigt mycket. Men sen jobbar vi inte enbart med grön IS utefter miljöperspektiv. Någon konkret är GRO som vi alltid tar med oss vid inköp.

AB: I vilken utsträckning påverkar intressenternas (kunder, partners, medborgare) intressen och engagemang för miljö-hållbarhet en organisations vilja att införa Grön IS? Exemplifiera på vilka sätt det uppstår?

K1: Vi märker det väl mest på e-tjänstesidan när det gäller att beställa tjänster, då våra medborgare gärna vill dela med sig av sina förslag och emellanåt får vi in sådana också och tangerar de också men de måste först passera politiken. Någon ville t.ex att vi skulle skriva på toa-papper men det gick inte igenom. Vi tar hänsyn till medborgare och partners.

AB: I vilken utsträckning påverkar strävan efter att förbättra organisationens rykte dess vilja att anta Grön IS?

K1: Det spelar generellt stor roll. Man vill ju vara stolt över sin kommun oavsett om det handlar om om Grön IS eller inte. Det blir ju ens identitet och resultat och då vill man ju vara bra.

AB: I vilken utsträckning påverkar legitimering en organisations vilja att anta Grön IS? Finns det andra yttre faktorer som påverkar organisationens beteende mot Green IS?

K1: Ja, ekonomin påverkar vårt beteende aningen. Det är alltid en balansgång över vad saker och ting får kosta.

AB: Hur kan dessa yttre faktorer vara till nytta respektive negativa för en kommun gällande frågor om hantering av Gröna informationssystem.

K1: Alla dessa faktorer som vi precis har pratat om skulle jag vilja säga är positiva för arbetet med Grön IS. Man får fokus. Det kanske kan kosta lite vilket är negativt men annars är det mest fördelar som dessa faktorer för med sig.

AB: Kan man enligt din åsikt förbättra strategin för att bli en mer hållbar organisation genom att ta hänsyn till dessa externa faktorer?

K1: Ja det här med hållbarhet handlar om ekologisk, ekonomisk och social hållbarhet. Vi pratar mycket om detta gentemot kommunens mål. Dessa faktorer kan vara verktyg som kan minska eller öka utvecklingen av strategi men för oss har det hjälpt oss förbättra vår strategi. Har skapat mer insyn, delaktighet och liknande.

AB: I vilken utsträckning samverkar kommuner med varandra och utbyter kunskap och erfarenheter angående Grön IS? Vilka fördelar har sådan interaktion eller kunskapsutbyte för organisationer som ännu inte har infört Grön IS?

K1: Allt är offentligt så det är enkelt att samarbeta också och dela kunskap. Men det är ju positivt att utbyta kunskap och erfarenhet och slippa göra saker på två ställen oavsett om det gäller beskrivningar eller problem. Någon annan har kanske gjort samma sak tidigare och då kan man ta del av denna kunskap istället för att falla i groparna. Vi har t.ex arbetat i sådana projekt kommunerna emellan t.ex gällande basklienter. Det är mindre ekonomi som går åt.

AB: Tror du att det faktum att kommunala organisationer inte konkurrerar om kunder underlättar sådan interaktion offentliga organisationer emellan? Varför är det så?

K1: Ja definitivt så är det generellt offentliga organisationer emellan. Alla handlingar och dokument är ju offentliga. Allt är väldigt öppet.

AB: Enligt din åsikt, i vilken utsträckning påverkar kommuner varandra? Finns det kommuner som är mer inflytelserika än andra? På vilka sätt?

K1: Man gör bland annat gemensamma upphandlingar. Klart det finns kommuner som syns och hörs mer. Men väldigt mycket handlar om storleken och förutsättningarna från kommun till kommun.

AB: Enligt din åsikt, i vilken utsträckning interagerar offentliga (kommuner) och privata organisationer med varandra och utbyter kunskap om Grön IS-relaterade frågor?

K1: för lite tyvärr men ja, vi har i genomförandet av digitalisering bland annat interagerat med den privata sektorn gällande Grön IS.

AB: Enligt din åsikt, i vilken utsträckning kan offentliga organisationer följa exemplet med privata organisationer när det gäller antagande och genomförande av Green IS? Varför är det så?

K1: vid upphandling och digitalisering

AB: Hur kan organisationer ändra sin inställning till Grön IS, från en reaktiv inställning till en mer proaktiv?

K1: Man måste prata om det uppifrån och ner. Så länge man inte pratar om det så finns det inte.

Appendix 4 -Transcription- Malmö Municipality (In Swedish)

Informant: Ulf Linderoth
Intervjuare: Azra Balic, Ana Carolina Donetto De Lima
Sekreterare: Azra Balic och Ana-Carolina Donetto De lima
Datum: 4 maj 2017.
Klockan: 13.20

AB/AC = Azra Balic/Ana Carolina Donetto De Lima
K2= Ulf Linderoth

AB/AC: Tänkte vi startar med lite bakgrund för att sedan gå över till huvudfrågorna för studien och slutligen gå över till avslutningsfrågorna.

AB/AC: Hur skulle du definiera Grön IS (Gröna Informationssystem)?

K2: Jag skulle väl säga Informationssystem som förutom att de själva är energieffektiva över hela sin livscykel stödjer verksamhetsprocesser som är ekologisk, ekonomiskt, socialt och etiskt hållbara och bidrar till att minska det ekologiska fotavtrycket.

AB/AC: Hur uppfattar du gröna informationssystem (Green IS)? Är det positivt/användbart för din organisation eller för organisationer i allmänhet? På vilket sätt är det positivt? På vilka områden av verksamheten kan det vara bra att tillämpa det, enligt din åsikt?

K2: Vi i Malmö stad har högt ställda krav gällande alla upptagna områden ovan. Specifikt har en reduktion av den ekologiska belastningen under lång tid stått högt på inriktningen för Malmö stad. Det har visat sig vara mycket positivt och vi har uppnått många utmärkelser för vårt gröna arbete hittills. I den digitala utvecklingen som vi för närvarande befinner oss i början av har Malmö stad fattat politiska beslut om en inriktning. Benämnd digitala Malmö. I denna finns bland annat att med hjälp av ICT teknik minska det ekologiska fotavtrycket. Finns många områden idag där gröna IS system ihop med förändrade arbetsprocesser rejält kan bistå utvecklingen kring att reducera den ekologiska belastningen. Exempelvis inom styr och reglerutrustning, välfärdstjänster men också ruttoptimeringar. Vår organisation har sedan 2010 arbetat med Green ICT via Green Digital Charter och har uppnått en väldigt hög köptrohet emot utpekat sortiment och idag är vi med stormsteg på väg mot och in i det digitala samhället. Att nya systemstöd som stöttar processförändringar är ett måste. Malmö stad måste för att klara av sina framtida utmaningar ta ett rejält ansvar för sina handlingar varför den gröna sidan idag är lätt att motivera.

AB/AC: Hur bra är Grön IS för för kommunen, eller organisationer i allmänhet, samhället, i större utsträckning och miljön? Vänligen ge några exempel på fördelar i dessa aspekter (organisation, samhälle och miljö).

K2: Självklart mycket positivt även om begreppet inte används så frekvent idag. Reduktion av miljöbelastningar både i stort som smått är viktigt för samtliga organisationer idag som vill se sig som en långsiktig organisation.

AB/AC: Har din organisation implementerat Grön IS? Varför eller varför inte? Om så är fallet, vad är kraven för genomförandet i enlighet med dina erfarenheter?

K2: Vi har tidigt satsat på Grön IT men redan då spillde detta över på att med stöd av ICT teknik inklusive system stötta förändring av verksamhetssystem som är mera optimerade för ett hållbart samhälle. Malmö stad har inte som begrepp implementerat Grön IS under detta begrepp. Vi har byggt vidare på de uppdrag kring Green Digital Charter(EU-inriktning), miljöpolicy med mera som redan är antagna för stadens räkning men inkluderat även Grön IS. I dessa krav är det viktigt att man har har verksamheten med sig att de förstår vad som behöver beaktas respektive vad som inte bör beaktas. Inte med piskan utan mera som information och morot.

AB/AC: Hur genomförs Grön IS implementation? Med andra ord, vilka är stegen, från övervägande till slutgiltigt genomförande?

K2: Vi har alltid med den gröna sidan i business case, projektbeskrivningar med mera. Det är idag en vedertagen hantering att reduktion av den ekologiska belastningen ska vara med. Det är inget som någon verksamhetsföreträdare motsätter sig.

AB/AC: I vilken utsträckning påverkar förekomsten av lagar och förordningar en kommun när det gäller viljan om att anta Green IS? Vilka regler och lagar är de som mest beaktas vid beslut om att anta Grön IS?

K2: Offentliga organisationer har krav på sig att följa LOU(Lagen om offentlig upphandling). Det gör att offentliga organisationer måste specificera sina miljökrav. Det går inte att hänvisa till en märkning ex TCO, Svanen och så vidare. Däremot kan man framföra motsvarande som krav. Alla kommuner är inte så bevandrade i och kring kravställandet runt miljön.

AB/AC: I vilken utsträckning påverkar förekomsten av miljöorganisationer, såsom icke-statliga organisationer, en kommun när det gäller viljan om att anta Grön IS? Vilka rörelser eller grupper är i så fall de mest inflytelserika, enligt din åsikt?

K2: Miljöorganisationer påverkar självklart oss ständigt. Exempelvis TCO kring certifiering av hårdvara.

AB/AC: I vilken utsträckning påverkar förekomsten av andra organisationer inom samma verksamhetsområde, det vill säga de som redan har antagit Grön IS, en organisations vilja att anta Grön IS?

K2: Alltid bra om man som organisation kan erhålla underlag, informationsutbyte med mera från någon organisation som redan genomfört och nått goda effekter. Det underlättar väldigt mycket.

AB/AC: I vilken utsträckning påverkar normer/standarder en organisations vilja att införa Grön IS. Kan du ge exempel på normer/standarder?

K2: Finns det standarder som går att använda i samband med framställandet av krav så stöttar det rejält arbetet. TCO-krav, energy star, epeat, SIS och så vidare.

AB/AC: I vilken utsträckning påverkar intressenternas (kunder, partners, medborgare) intressen och engagemang för miljö-hållbarhet en organisations vilja att införa Grön IS? Exemplifiera på vilka sätt det uppstår?

K2: Har man samarbetspartner som stöttar den gröna utvecklingen utan att det blir så svårt så skulle jag vilja säga att arbetet underlättas rejält över tiden. Har politikerna vilka är medborgarnas förlängda arm, intresse och engagemang så är det ett mycket tydligt incitament till att införa gröna IS. I Malmö stad finns det mål och uppdrag mot den gröna sidan inklusive IS.

AB/AC: I vilken utsträckning påverkar strävan efter att förbättra organisationens rykte dess vilja att anta Grön IS?

K2: Malmö stad har ett miljö-prefix sedan lång tid och Grön IS stärker detta ändå mera. Är positiva förtecken som även ligger rätt i tiden. Att organisationen har en tydlig hållbarhetsinriktning. Så klart ryktet spelar roll.

AB/AC: I vilken utsträckning påverkar legitimering en organisations vilja att anta Grön IS?

K2: Licenserna kan i en del fall vara en begränsande faktor då Sverige är ett litet land och utbudet inte är så stort inom vissa områden. I Vissa fall är det näst intill monopol. Dock har även de flesta av dessa leverantörer även en grön inriktning idag men deras förändringar går inte alltid så fort som man önskat.

AB/AC: Finns det andra yttre faktorer som påverkar organisationens beteende mot Green IS?

K2: Påtryckningar, politiska beslut både inom EU men även nationellt och regionalt och lagstiftningar som förändras.

AB/AC: Hur kan en organisation utnyttja ovan nämnda externa press/tryck och dra nytta av den?

K2: Politiska beslut är en bra bas att stå på i sitt gröna arbetet vid införande. Att det finns engagemang ifrån styrelsen som vill att organisationen ska åt ett visst håll. Har man något beslut att luta sig emot i grunden så underlättar det självklart vägvals-diskussioner.

AB/AC: Hur kan dessa yttre faktorer vara till nytta respektive negativa för en kommun gällande frågor om hantering av Gröna informationssystem.

K2: Jag Bedömer de flesta beslut som bra då de understryker redan för de som är igång med den gröna och hållbara utvecklingen. För de som inte har kommit igång kan det vara en väckarklocka att dra igång arbetet

AB/AC: Kan man enligt din åsikt förbättra strategin för att bli en mer hållbar organisation genom att ta hänsyn till dessa externa faktorer?

K2: En strategi måste vara levande och när påtryckningar av olika slag kommer så bör ens strategi genomlysas om den eventuellt behöver uppdateras. Kan vara till nytta att spetsa tills sina krav om det har kommit påtryckningar från något håll. Det underlättar alltid om det finns önskemål och påtryckningar från flera olika håll. Det visar också på att man inte är ensam. Sverige är ett litet land i helheten.

AB/AC: I vilken utsträckning samverkar kommuner med varandra och utbyter kunskap och erfarenheter angående Grön IS? Vilka fördelar har sådan interaktion eller kunskapsutbyte för organisationer som ännu inte har infört Grön IS?

K2: Det delas mer och mer underlag, information mellan varandra. Det mesta är offentligt tillgängligt vilket gör att det finns en öppen inställning att stötta varandra. En offentlig organisation är bra på något medan en annan har något annat bra att förmedla. Det samverkas mer och mer mellan kommuner inklusive i olika forum. Detta ger en stor fördel för de som inte kommit igång eller inte kommit så långt att det finns material att tillgå. Man behöver inte börja från noll och man är sällan ensam. Vi är 290 kommuner med likartade krav och behov kring uppdragen.

AB/AC: Tror du att det faktum att kommunala organisationer inte konkurrerar om kunder underlättar sådan interaktion offentliga organisationer emellan? Varför är det så?

K2: Jag ger ett entydigt svar, JA. Vi har olika kunder och vi har i grunden likartade uppdrag via kommunallagen. Dessutom hur stor en kommun är så kan man alltid dra lärdom från andra organisationer.

AB/AC: Enligt din åsikt, i vilken utsträckning påverkar kommuner varandra? Finns det kommuner som är mer inflytelserika än andra? På vilka sätt?

K2: Ja det finns vissa som är längre komna än andra. Det finns olika forum där man kan dela information mellan varandra. Kring upphandling finns SOI. I övrigt finns SKL (Sveriges kommun och landstingsförbund), Ramavtalsupphandlingar, dela digitalt med mera. En del är mera aktiva än andra vilket också är lite känt. Stockholm kring smart stad. Västerås kring digitalisering inom äldreomsorgen och så vidare.

AB/AC: Enligt din åsikt, i vilken utsträckning interagerar offentliga (kommuner) och privataorganisationer med varandra och utbyter kunskap om Grön IS-relaterade frågor?

K2: Inte så mycket som det vore önskvärt men är helt övertygad om att detta kommer att öka rejält den närmaste tiden kring digitaliserings-begreppet för att lösa utmaningarna framöver

vilka är kompetensbrist, verksamhetsutveckling och effektivitet och så vidare. De som inte redan tagit till sig det gröna begreppet kan få svårt att profilera sig framöver.

AB/AC: Enligt din åsikt, i vilken utsträckning kan offentliga organisationer följa exemplet med privata organisationer när det gäller antagande och genomförande av Green IS? Varför är det så?

K2: Privata organisationer kan ha tydligare och framför allt snabbare beslutsvägar. Den demokratiska processen gör att det ibland kan upplevas som lite väl långa hanteringstider innan beslut fattas inför ett införande.

AB/AC: Hur kan organisationer ändra sin inställning till Grön IS, från en reaktiv inställning till en mer proaktiv?

K2: Alla behöver kanske inte vara proaktiva men de ska i alla fall inte vara reaktiva. Det finns många goda exempel att tillgå från kommunerna och andra organisationer varför man kan utvecklas med stöd av erfarenheter från andra. Detta gör att man inte behöver begå några misstag, i alla fall inte samma misstag. Detta gör att goda exempel gör att man som organisation kan strukturerat arbeta framåt och nå effekter och behöver inte bli reaktiva när det till slut kommer politiska beslut eller lagstiftat att man måste införa. Avslutningsvis behöver det absolut inte bli dyrare bara för att man beaktar "Grönt" och hållbart.

Appendix 5 -Transcription- Eslöv Municipality (In Swedish)

Informant: Helena Månsson
Intervjuare: Ana Carolina Donetto De Lima
Sekreterare: Azra Balic och Ana-Carolina Donetto De lima
Datum: 9 maj 2017.
Klockan: 11.00

AC = Ana Carolina Donetto De Lima
K3 = Helena Månsson

AC: Tänkte vi startar med lite bakgrund för att sedan gå över till huvudfrågorna för studien och slutligen gå över till avslutningsfrågorna.

AC: Hur skulle du definiera Grön IS (Gröna Informationssystem)?

K3: Grön IS kan man säga, alltså vi har inte själva jobbat så mycket med Grön IT i Eslövs kommun. Men det som jag tänker på rent spontant är informationssystem som gör att man förbrukar mindre av klotets resurser. Det handlar om att hantera IT system på bästa sätt. Både systemen och även att vi nyttjar tekniken det är främst då vi från utveckling. T.ex inom vården att vi minskar resandet bland annat.

AC: Hur uppfattar du gröna informationssystem (Green IS)? Är det positivt/användbart för din organisation eller för organisationer i allmänhet? På vilket sätt är det positivt? På vilka områden av verksamheten kan det vara bra att tillämpa det, enligt din åsikt?

K3: Det är mycket positivt för organisationer att arbeta med grön IS för allt som vi kan göra för att minska klimatpåverkan är väldigt positivt. Det kan handla om resor t.ex. Det kan handla om att återanvända den värmen som utvecklas utifrån IT system. Där gör vi en hel del saker inom, inom eslövs kommun ja. Vilka områden det är positivt inom vår verksamhet kan vara inom samhällsplanering och hur man tänker på hur vi kommer kunna styra olika flöden. T.ex IoT där vi kan styra olika trafikflöden och behöver vi kanske inte behöver ha rödljus om det inte finns någon trafik utan man känner istället av bilflödet istället. Kan vara inom vård-delarna där man jobbar mycket med att minska körandet och klimatpåverkan då där vi kör ut väldigt mycket till brukare. Då kan man istället använda sig av nattugglor och istället för personliga besök ser man via de att brukarna mår bra. Alltså man kan applicera detta inom många områden och givetvis också inom energiförbrukning på våra fastigheter. Är det ingen i fastigheterna på kvällar så kan vi ju sänka temperaturen.

AC: Hur bra är Grön IS för för kommunen, eller organisationer i allmänhet, samhället, i större utsträckning och miljön? Vänligen ge några exempel på fördelar i dessa aspekter (organisation, samhälle och miljö).

K3: Jag ser detta som väldigt positivt för alla delarna både organisationen, samhället och miljön och vi kommer kunna utveckla samhället på ett mycket mer effektivt sätt om vi nu tänker på

smart city saker. Jag tror det är väldigt bra ja och det är en nödvändighet att vi jobbar med de här frågorna. Vi har redan gjort en hel del av dessa saker inom t.ex media-relationen och använt det också vid reglering av kylar och frysar i köken och sådana saker. Men det främsta användningsområdet är skype att minska resor. Men det man inte tänker på med skype är att man inom vården kan göra bedömningar av patientens hälsostatus genom att faktiskt filma de och låta fler personal bedöma brukarna och placeringen ska det vara på ett korttidsboende eller annat boende.

AC: Har din organisation implementerat Grön IS? Varför eller varför inte? Om så är fallet, vad är kraven för genomförandet i enlighet med dina erfarenheter?

K3: Ja vi använder Grön IS, det för att vi har politiska mål. Vi är en ekokommun i Eslöv som innebär att vi ska jobba med en rad olika områden och har policyn. Nämnden har som mål att ta ner energiförbrukningen och så vidare. Ja det är ju helt enkelt ett politiskt mål. Kraven, det handlar om att göra bra kalkyler, det handlar mycket om att effektivisera olika förbrukningar av jordens resurser helt enkelt. Vi har väl inte gjort det på ett strukturerat sätt egentligen, det kan jag inte säga. Vi kommer att på vår förvaltning anställa en hållbarhetsstrateg som kommer jobba med de här frågorna på vår förvaltning. Så några krav kan jag inte säga, det handlar också om mycket engagemang från hela verksamheten för att det skall lyckas med alla våra miljömål oavsett om det är Grön IS eller några andra miljömål.

AC: Hur genomförs Grön IS implementation? Med andra ord, vilka är stegen, från övervägande till slutgiltigt genomförande?

K3: Ja, det handlar om att ha en kravbild från början över vad det är man skall uppnå, göra omvärldsanalyser egentligen beroende på vilka system som passar in dels i vår tekniska miljö men även utefter verksamheternas perspektiv. Sen sätter man upp ett projekt kring det här att införa vad det är för stödsystem som förs in. Och sen ha en plan för hur man underhåller det sen.

AC: I vilken utsträckning påverkar förekomsten av lagar och förordningar en kommun när det gäller viljan om att anta Green IS? Vilka regler och lagar är de som mest beaktas vid beslut om att anta Grön IS?

K3: Jag tänker mig att de miljömål som regeringen utfärdar dom har vi att följa. Dessutom har vi på lokal plan politiker som sätter mål som pekar på den här inriktningen speciellt det faktum att vi är en ekokommun och jobbar ännu mer intensivt med det här. Vilka de exakta lagarna och förordningarna är det kan jag inte namnge men det är bland annat den allmänna miljödebatten som påverkar oss också givetvis.

AC: I vilken utsträckning påverkar förekomsten av miljöorganisationer, såsom icke-statliga organisationer, en kommun när det gäller viljan om att anta Grön IS? Vilka rörelser eller grupper är i så fall de mest inflytelserika, enligt din åsikt?

K3: Ja det är indirekt Greenpeace, Naturvårdsverket som påverkar oss mycket ja. Ja sen finns det en hel del andra organisationer inom forskningen så att säga. Men så är det så att vi ha en

miljöavdelning inom vår kommun och då är det så att de har sina områden de jobbar med och då mynnar det ut i våra mål som en ekokommun. Så vi har ingen direkt påverkan från IT-avdelningen.

AC: I vilken utsträckning påverkar förekomsten av andra organisationer inom samma verksamhetsområde, det vill säga de som redan har antagit Grön IS, en organisations vilja att anta Grön IS?

K3: Givetvis om man jobbar väldigt mycket med det här området så blir man ju påverkad. Det är ju den indirekta påverkan från andra organisationer.

AC: I vilken utsträckning påverkar normer/standarder en organisations vilja att införa Grön IS. Kan du ge exempel på normer/standarder?

K3: Normer och standarder påverkar kommunen indirekt att arbeta med grön IS. Det kan ju handla om vad region skåne uttrycker eller SKL (Sveriger kommuner och landsting) som vi följer också ja. Men några direkta normer och standarder kan jag inte ange. Påverkan kommer främst från andra organisationer som jobbar väldigt mycket med detta.

AC: I vilken utsträckning påverkar intressenternas (kunder, partners, medborgare) intressen och engagemang för miljö-hållbarhet en organisations vilja att införa Grön IS? Exemplifiera på vilka sätt det uppstår?

K3: Vi har även medborgare som kan lämna e-förslag om Grön IS eller andra miljöåtgärder. Och då har vi det som en utredning vidare och det kan påverka oss också ja. Även leverantörer påverkar oss gällande bland annat upphandlingar av IT-utrustning.

AC: I vilken utsträckning påverkar strävan efter att förbättra organisationens rykte dess vilja att anta Grön IS?

K3: Det handlar ju mycket om vilka mål vi får av politikerna sen kan vi ju bryta ner dessa och få lite mer konkreta mål. Så det har vi ju, kan vi göra ja. Men just nu har vi inte den typen av mål på Grön IS inom kommunen. Vi jobbar ju i stort med hållbarhetsfrågor på olika plan. Och vårt rykte är viktigt när vi skall locka till oss medborgare. Vi jobbar med grön IS men vi har inget program som säger nu skall vi införa grön IS.

AC: I vilken utsträckning påverkar legitimering en organisations vilja att anta Grön IS?

K3: Det handlar även här mycket om de mål som vi får från politikerna. Det är de som bestämmer inriktningen som vi skall jobba med.

AC: Finns det andra yttre faktorer som påverkar organisationens beteende mot Green IS?

K3: De utöver de som vi har pratat om här är inga som jag kan nämna så utöver de vi har pratat om här.

AC: Hur kan en organisation utnyttja ovan nämnda externa press/tryck och dra nytta av den?

K3: Det kan ju vara så att man lyfter upp frågan om det är så att politikerna inte ser det har vi möjlighet att lyfta frågor själva och då är det ett bra exempel att det finns yttre faktorer som påverkar oss och hjälper oss och ser hur andra t.ex har gjort på det området.

AC: Hur kan dessa yttre faktorer vara till nytta respektive negativa för en kommun gällande frågor om hantering av Gröna informationssystem.

K3: Dessa yttre faktorer kan vara negativa på något sätt att det kan bildas en opinion som på ett sätt verkar vara av gott syfte men om man tittar var verksamheten befinner sig i organisationen så kanske det inte har samma syfte utan har andra konsekvenser som man måste ta hänsyn till som inte de yttre faktorerna ser utan bara har del-kunskap om hur det fungerar.

AC: Kan man enligt din åsikt förbättra strategin för att bli en mer hållbar organisation genom att ta hänsyn till dessa externa faktorer?

K3: Ja, absolut kan de vara till hjälp. Det handlar om att ta upp goda exempel från andra för att föra en omvärldsbevakning och sen ha möjlighet att göra en strategi kring det, ja. Det är en positiv resurs som man kan ta nytta av ja. Det som påverkar kommunens arbete mot Grön IS mest är lagen men även att titta på vad andra kommuner gör för goda exempel, och dra nytta kring hur de har gjort sin resa kring Grön IS, ja. Någon kommun som jag tänker på mest när det gäller Grön IS är Växjö kommun ja. Ja vi har kontakt med kommunen, jag känner IT- chefen där och vi har varit på besök några gånger.

AC: I vilken utsträckning samverkar kommuner med varandra och utbyter kunskap och erfarenheter angående Grön IS? Vilka fördelar har sådan interaktion eller kunskapsutbyte för organisationer som ännu inte har infört Grön IS?

K3: Det är fördel med kommuner emellan, vi är väldigt öppna och delar med oss av erfarenhet så det är väldigt positivt. Det IT-chefs nätverk som är etablerat i region Skåne är väldigt värdefullt just eftersom vi utan problem kan dra nytta av varandra. Någon är t.ex. Bra på Grön IS, någon annan på automatisering och så vidare.

AC: Tror du att det faktum att kommunala organisationer inte konkurrerar om kunder underlättar sådan interaktion offentliga organisationer emellan? Varför är det så?

K3: Vi är öppna organisationer inom offentliga sektorn inget är hemligt. Vi har jättemycket utbyte av varandra. Klart öppenheten underlättar.

AC: Enligt din åsikt, i vilken utsträckning påverkar kommuner varandra? Finns det kommuner som är mer inflytelserika än andra? På vilka sätt?

K3: Vi interagerar väldigt mycket med varandra. Klart vissa kommuner är mer synliga och hörs mer.

AC: Enligt din åsikt, i vilken utsträckning interagerar offentliga (kommuner) och privata organisationer med varandra och utbyter kunskap om Grön IS-relaterade frågor?

K3: Man kan samarbeta helt klart även om det är lite knepigare men oftast så brukar de kunna dela med sig av kunskap i sig hur de har gått tillväga och så vidare ja. Och det handlar mycket om att åka på konferenser inom det ämnesområde som vi befinner oss inom för att dela med sig och knyta kontakter och bygga nätverk. Det ser jag gärna att man gör både inom privat och statlig sektor och de emellan. Jag tycker interaktionen mellan privat sektor och offentlig bör öka men allt handlar om resurser som man har att sätta till. Det är ju jätte-värdefullt att titta inte bara på kommuner utan även på den privata sektorn för man kommer olika långt inom olika områden.

AC: Enligt din åsikt, i vilken utsträckning kan offentliga organisationer följa exemplet med privata organisationer när det gäller antagande och genomförande av Green IS? Varför är det så?

K3: Här har vi väldigt olika förhållningssätt eftersom uppdragen är väldigt olika i en kommun och på ett privat företag. Men oavsett så har vi samma mål med att faktiskt ta vara på jordens resurser och vara rädda om de som möjligt. Detta är ju detsamma oavsett om du är ett privat företag eller statlig kommun. Att faktiskt bygga en image på att vara väldigt miljömedvetna och jobba med grön IS. Det finns liksom ett högre syfte oavsett om man är offentlig eller vinstdrivande.

AC: Hur kan organisationer ändra sin inställning till Grön IS, från en reaktiv inställning till en mer proaktiv?

K3: De lagar och förordningar vi har att förhålla oss till hjälper till, till en viss del men det handlar om engagemang från verksamheterna för att man ska lyckas verkligen. Och man kan inte gå hela vägen om man bara tittar på lagar och förordningar utan det gäller att man har ett politiskt handlingsprogram som säger att vi skall jobba med hållbarhet även inom Grön IS. Hela verksamheten måste jobba med det inte bara IT-Avdelningen.

Appendix 6 -Transcription- Haparanda Municipality (In Swedish)

Informant: Rolf Sannebjörk
Intervjuare: Azra Balic, Ana Carolina Donetto De Lima
Sekreterare: Azra Balic och Ana-Carolina Donetto De lima
Datum: 5 maj 2017.
Klockan: 11.00

AB/AC = Azra Balic/Ana Carolina Donetto De Lima
K4= Rolf Sannebjörk

AB/AC: Tänkte vi startar med lite bakgrund för att sedan gå över till huvudfrågorna för studien och slutligen gå över till avslutningsfrågorna.

K4: Yes, jag funderar på vad är gröna informationssystem? Jag funderar lite själv på vad det är egentligen. Jag har inte något svar på det egentligen. Alltså det är lite luddigt, men jag kan tänka mig alltså hur det, ur ett hållbarhetsaspekt då. Det här är svårt och det finns flera delar men vi på ITavdelningen har både politiska och individuella mål att nå och för oss innebär Grön IS då energieffektivisering med stor hänsyn till etik samt sociala aspekter och villkor i hela produktions- och processkedjan. Men jag har framförallt tittat på det initialt utefter ett hållbarhetsperspektiv. Så vi på IT-avdelningen har individuella mål och politiska mål och ett av våra mål har varit att köpa in energieffektiv utrustning, alltså energisnål utrustning. Ett tag fanns ju en grön märkning, någon klöver eller grön märkning. Sen finns det ju en del fairtrade och sådant också. Hur tillverkas det och hur det tas till vara på och hur fabriken och personalen har det. Arbetsmiljö och arbetsvillkor och sådant där. Det är lite svårare att komma åt den biten. Flera tillverkare använder samma fabrik i Kina. Men som jag sa har jag framförallt tittat initialt från ett hållbarhetsperspektiv. För fem, sex år sen börjades det tittas och göras mätningar och beräkningar och kikade på vad som var aktuellt då, men jag hade batteribackup på 20 kW. Jag var tvungen att att prioritera på att dra ner på den batteri-backup. Sista vi köpte var på 15 kW. Då får man tänka att det är förbrukningen huvudsakligen, men sen ska man tänka på att de ska ha en dräglig miljö också, då ska det kylas och med kylning blir förbrukningen det dubbla. Sen bor vi ju långt norrut så på vintern kyler vi med fri luft. Så vi har minusgrader och tar luft utifrån för att kyla. Så det är ju en grej vi lägger krut vid, att köpa energi till utrustningen. Utvecklingen har ju gått framåt och utrustningen har gått framåt också. Från tillverkarsidan konkurrerar med miljövänligare utrustning men enheterna har blivit mindre. Däremot har vi golvet i serverrummet, det första var jättelitet, det nya är gigantiskt och nu tittar vi på att göra ett mindre serverrum. Energiförbrukningen på servern, den är på kyla, vi kyler ner ett stort utrymme som inte behöver kylas ner, speciellt sommartid. Ska ha ca 20 grader sådär, så då kan vi krympa ner det och energieffektivisera där också genom att bara kyla ner halva ytan. Då kan jag räkna på hur mycket skulle exempelvis ta där. Sen har vi ju en andra grej just nu, nu vet jag inte om jag svarar på era frågor, jag bara berättar. Men vi kan ju ta och sen titta igenom dem. Och som vi gör också då som man säger, då har vi ett annat perspektiv och det gäller ju skrotning och så av elektronik, då mycket av elektroniken är, vad heter det, innehåller ja då kanske metaller och sådant som som kan tas till vara på och som vi försöker få dem i, vidare då skrota på ett riktigt sätt. Sen har vi börjat köpa in då, vad heter det nu, köpa in datorer, nya till verksamheten. Jag säger nya, men de är inte nya. Vi köper rekondade datorer, begagnade datorer, man ser knappt

att de att blivit använda alltså och det är ju också en besparing, på många sätt. Dels sparar vi pengar, samma sak med energieffektiv av servern. Vi sparar pengar på det, på mindre energi.

Sen vet jag inte om blir några besparingar, energibolagen höjer ju avgiften hela tiden. Det ökar ju kostnaderna. Men då har vi ju att vi ska köpa när det kommer på året. Så att spara pengar, så sparar de, beroende på modell och sådär, kanske 25-50 procent lägre kostnad att köpa in. Sen kan vi ju säga så här, då återanvänder vi det går det inte till skroten och blir avfall, så vi gör dubbel nytta. Vi tar och använder produkterna längre tid och får då effekten att det blir inte elektronikskrot av det hela alltet. Det tror jag också är en del att försöka hitta sådana lösningar, kanske inte alltid behöver köpa nytt. I vissa fall måste man köpa nytt, det finns inte begagnade att få tag i. Men jag skulle tro att de senaste åren här så, har vi sparat resultatet på tavlan här. Jag kan visa er energibesparingarna som vi har gjort, men jag vet inte om ni ser dem.

AB/AC: Nej.

K4: Under 2016, så vad heter det nu, när vi återanvände begagnade datorer så har vi sparat 1882 kilo koldioxid på att använda begagnad utrustning då. Så det motsvarar energin för att driva 181 kylskåp i ett år eller värma upp 8 lägenheter i ett år eller köra 0,3 varv runt jorden med bil. Det är ju en del i det jag kallar grön IT. Försöka sakerna så länge. Sen kanske du kan använda din server så länge, det är ju beroende på hårdvara, vi måste ju ha någon form av hårdvarumässig support och sådana saker på våra grejer där. För det är verksamhetskritiska system och de måste ju nästan gå hela tiden. Om någonting går sönder så måste vi snabbt ta och bryta grejer och ersätta det annars står hela verksamheten still. Där är det alltså lite svårare att köra begagnade datorer. Där kan man ja kanske upphandlingsmässigt kan styra lite och ställa krav. Jag ska göra en upphandling på nya servrar och sådant där och kan då kanske ställa krav på energiförbrukning och sådana där saker. Sen blir det lite svårare kanske med sådant där som när man ser på när det gäller, då man tänker tillbaka då till fabriken. Är det schyssta villkor i fabriken men det är lite svårare att förhandla om.

AB/AC: Alltså det är mycket svårare men, det är ju ändå positivt att ni ändå har det i åtanke, den sociala och etiska biten. För det är ju också den som är tillägget till gröna IS från grön IT och så att man tar hänsyn till hela affärsprocessen.

K4: Mmm, ja, jajamänsan. Så att vi ska titta lite på frågorna, jag pratar en massa. Implementera grön, ja, det har vi väl gjort.

AB/AC: Hur har ni genomfört det?

K4: Jag har inte förankrat det politiskt, eller med ledningen, utan jag har bara bestämt att det ska vi göra. Sen är de kanske omedvetna om att vi håller på med det här. Vi kanske bör marknadsföra bättre inom organisationen också. Vad heter det, de där första i stycket där är ganska besvarade där. Alltså det som är svårt, lag och förordningar i kommunen så såhär och vad som kan vara svårt det här med grön IT och sådant där. Det mest svåra det är ju LOU, lagen om offentlig upphandling. Kanske kan ställa till, man kanske inte får vad man det exakt man vill ha. Men vi är ju bundna till den lagstiftningen och vad vi kan göra är att ändra lagstiftningen

för att påverka det där. Sen det här med, vad heter det nu, externa miljöorganisationer, så är det inga jag har pratat med, nej. Det är självmant om det här med grön IT. Jag har heller inte pratat med andra organisationer. Nej det har vi inte gjort utan det bara blev så. Vi ska ju ha sådana verksamhetsmål som matchar de politiska målen och många av de politiska målen kanske är lite mera visioner som hållbar utveckling och sdaänt där. Då tyckte vi att man kunde utveckla det här målet mer också med att köpa in energieffektiv utrustning. Man skulle kunna utöka det målet, jag har en massa idéer själv. Utöka målet och just att man köper in då och försöker återanvända massa begagnade, rekondade datorer. Så att utöka det där målet och det är ju ett, kanske i de politiska målen som vi tyckte att fokusera på. Normer och standarder, ja jag kan inte säga någonting. Jag har inte tänkt i de termerna, normer och standarder. Kanske ingenting med vilja, men det kan ju vara det som ger en vid upphandlingar precis det man vill ha. Det är jättesvårt att specificera. Ska man börja sätta gränser på energieffektivisering, alltså ytterst energieffektiv det är och sådana saker så måste man vara ganska duktig och känna till hur ser marknaden ut lite djupare och så och sätter man för hårt det här kravet så om någonting kostar en halv miljon så hux flux så sätter man så hårt krav så kostar det en och en halv miljon istället. Kanske inom offentlig verksamhet kan det vara lite tufft och motivera så stort. Sen om det är frågan om att det kostar femtio tusen så kan det ju vara om det är energieffektivare. Så tittar man över hela livscykeln, så kan det ju ändå bli billigare. Det som kan vara en grej som är lite, det ser jätteolika ut i olika organisationer också. Det är ju den i organisationen som det kommer in i direkt, hela bygget, då är det ju fastighetsgivaren som betalar elräkningen, så att jag betalar ingen el, utan det det gör han. Varför ska jag då köpa lite dyrare grejer då till mitt serverrum, jag får ju ingen kickback utav det, utan det ligger på fastighetssidan som drar nytta av det. Det kan ju vara en sådan här faktor i vissa organisationers målbild finns inte riktigt, varför ska jag göra något? Kanske att det kostar i serverhallen någon krona mera men å andra sidan sitter de på de här datorerna då som vi köpt begagnat, det kostar ju mindre då istället. Vi ska titta mer där. Grön IT kan ju vara beroende av att spara pengar, som mål och sådant. Vi håller på att titta på service och tekniker. Vi har börjat titta nu och nästa tid då ska vi se till helheten istället. Då kan man säga "Är detta grön IT?". Ja, kanske i det här fallet att det är grön IT. Hur påverkas organisationens rykte, jag vet inte. Licensfrågan kan man väl säga, om det har någonting med grön IT att göra.

AB/AC: Jag skrev nog fel där vid licens. Legitimering eller legitimation.

K4: Okej, okej. Nej, det tror jag inte. Just att du har fått någon typ av certifiering på någonting eller så, nej. Jag tänkte på Microsoft-licensen och betalar en massa miljoner till dem varje år. Sen kan man väl säga, yttre faktorer alltså, eller externa faktorer kanske som påverkar er och funderar lite grann på det. Vi hade tidigare faktiskt ett sådant där projekt på gång, men då har vi tittat på så mycket alltså det flesta har bärbara datorer alltså lite svårare att ta med sig. Ibland ser man ju att när folk går hem på kvällen så kan de ha datorn uppe och det är ju någonting man skulle vilja komma åt att få dem att stänga ner datorn. För det är ju onödigt även om den går och somnar in, för då blir det lite att den tar mindre energi då. Men det är något man borde, men jag tror just att när det är stationära datorer där har man kanske verktyg som kan göra så att står en dator på på kvällen klockan sju så poppar ett upp något på skärmen "Nu kommer datorn stängas av". Sen kan det ju vara lite farligt i vissa fall kanske man har satt igång någonting på jobb som måste gå och det tar väldigt lång tid. Så att jag harinte riktigt koll på hur det ser ut med att man stänger av maskinen och energi. Men jag ser det på min sida, på business alltså företagssidan där så ser jag ju att om jag har kommunen i min lista så ser jag att datorerna kan vara igång ganska länge. Yttre faktorer, jag vet att jag har pratat mycket men samverkan mellan kommunerna, vi har väl en samverkan faktiskt, med kommunerna emellan. Sen kan jag väl säga

att vi inte direkt har diskuterat politik och grön IT, så jag kan inte pratar om det. Men däremot har vi diskussioner, då är det 14 kommuner i Norrbotten. Det är ju flera kommuner som har flera serverhallar. Då har vi ju frågat "Är det rimligt att vi i Norrbotten har tjugoåtta till trettio serverhallar?" Och då kan man ju tänka att den frågan blir väldigt svår om jag vill effektivisera drift och sådana saker då ser man ur ett hållbarhetsperspektiv så att varje serverhall tar upp energi, kanske klarar vi oss på tre till fyra stycken och då betydligt säkrare än vad vi har idag. Det är mer den typen av lösning, så kan man säga även utan att nämna grön IT. Det är ett led i tänket därför att vi behöver kyla ner just de termerna kanske annat grön IT som beteckning på energisidan. De diskussionerna för vi på kommun och kommer starta upp en utredning om det här första steget hur det skulle kunna se ut, vad som finns för möjligheter och hinder och sådant. Sen tror jag i framtiden så kommer sådant här, vad heter det, servrar och såna ting kommer kanske minska.

Vad har vi för möjlighet att ställa krav på Microsoft? Så stora är vi inte, jag var på ett möte igår med Microsoft. Mycket bestäms i USA och där har det beslutat så och Sverige är ett väldigt litet land, men vi kan ju alltid framföra åsikter då. Vi kommer aldrig upp till mycket men det är målet. Sen har vi egna mål som vi har men det är typ gemensamma serverhallar. Men det är för tidigt att säga, lite kommunal samverkan sådär, kanske inte riktigt, kanske inte kan prata grön IT men andra termer. Det kan vara svårt det också för små kommuner är det ju alltid potentiella problem med att gå ihop med serverhallarna. Det är ju arbetstillfällen som försvinner och det är ju ganska viktigt. Det kan ju bli politiskt och allt möjligt, man är ju mån om de egna arbetstill-fällena. Samtidigt så ser vi på kommunsidan det går ju över kostnader, alltså till äldreomsorgen och sådant. Vi måste ju jobba smartare också. Jag har ju länge varit förespråkare för att folk ska använda mer video. Just för den här effektiviteten, sen tror jag inte riktigt på den här fysiska träffen också, den är otroligt viktig också. Som IT-chef, vi träffas en gång i månaden, då kan vi säga att jag är med i Kiruna. Det är trettiosex mil till Kiruna, ner till Luleå tretton mil och till Piteå arton mil. Sen har vi ju Gällivare och Pajala. Så vi försöker få ihop det nu med möten med alla, så det blir enormt mycket resor att göra och kan vi ta åtminstone vartannat möte med video så alltså sparar vi ganska mycket. Alltså det blir miljöeffekt på det. Så jag pratar ganska mycket för att försöka få flera att använda sig av det. Sen borde man ha såna varje gång du kör ett video så får du ett poäng. Den som har flest poäng i slutet av månaden får en trisslott. Men så fort du bokar en bil blir man av med alla sina poäng och får börja från noll igen. Men jag vet inte om det går igenom för att vi ska ju prata med andra organisationer också och det var inte så lättköpt att folk skulle koppla upp sig med skype eller köpa företags-skype. Det är lite si och så. Jag tror att det här med video kommer bli lättare att koppla upp sig mot kända organisationer. Då vet vi vad vi har. Det borde ju vara så ungefär. Det ska bara funka när man kopplar ihop det där. Vi kör mer och mer video. Det är fruktansvärt effektivt. Man har två-timmars möte och ska vi åka bil alla så går det en hel dag till mötet. Det går mer arbetstid, plats och ställe, plus att vi sparar in på koldioxidutsläppen. Så det är en viktig faktor. Jag tror att det är grön IT, måste det vara. Vi har inte antagit något dokument då, med grön IT. Sen är vi en offentlig organisation, det beror på alltså lite grann om man inför eller jobbar och tänker på det sättet. Beror väl på vad IT har, hur IT ligger till i själva organisationen och sådär. Ibland sitter de längst nere i källaren och lappar servrar och då blir det kanske inte så mycket. Man håller igång det man kan hålla igång. Sen när det gäller det här med mer proaktiv så, det handlar bara om vilja.

AB/AC: Proaktiv är, exakt, viljan och reaktiv är mer tvingande.

K4: Ja, jag vet inte, det känns svårt att, och få det här tvingande. Jag skulle vilja säga så här att, om man kan visa på vinsterna med det, då tror jag, det här är ju lätt för mig, nu har jag ju nästa

del i projektet är i sista veckorna. Vi har också sparat ganska mycket. Jag pratar om just det här vi köper recondad utrustning och sådant där då. Vissa var lite arga med tanke på repor och allt. Tyckte man borde köpa nytt. Men nu har man liksom accepterat min vision. Så jag tror att om man kan visa på vinsterna, alltså de interna ekonomiska vinsterna, för det finns ju faktiskt sådana också. Sen finns det ju mer globala, alltså vinster. Det här med koldioxidutsläppen och de här bitarna. Då tror jag man kan få upp medvetenheten. Jag tror att man måste vara, jag börjar inse det själv efter att ha jobbat kanske lite för mycket i det tysta att det är först nu sista tiden vi har pratat med och meddelat varandra inom organisationen. Att vi faktiskt gör saker på den här sidan. Inte bara sitter nere i källaren och kör servern. Nu är det slut på sådant där. Det funkar mycket bättre. Jag vet inte, jag har pratat mycket, tycker ni att ni har fått svar på frågorna?

AB/AC: Ja, men ni hade ingen ju inte någon direkt strategi för grön IS?

K4: Nej, det har vi inte.

AB/AC: Nej, ni har ett grönt verksamhets-tänk istället, alltså vad det gäller mer att ni förankrar att hela kommunen ska vara grön istället.

K4: Både jag och min kollega här som jobbar på miljösidan har sett till att ett och annat blivit gjort. Det har funnits den här politiska visionen och där finns det att man ska jobba aktivt för en hållbar livsmiljö. Det är som ett övergripande mål. Sen tror jag att när kanske har verksamheten i just det här hållbarhetstänket, sen finns det lite grann i, vi har nu sista tiden en sådan där checklista, där vi skriver då tjänsteskrivelsen med kritiken och sådant där. Där finns ju det här med hållbarhetstänk och allt möjligt som man ska beakta. Om jag skriver att jag ska investera i en ny server så kanske jag ska nämna där att en effekt av att vi kommer att minska koldioxidutsläppen med si och så mycket. Detta ska alltså med i själva tjänsteskrivelsen också.

AB/AC: Det som jag har förstått lite, rätta mig om jag har fel, det är mycket ändå att trots att ni jobbar för det lite så ligger det ändå på den nivån att härmande, tvingande och normativ press påverkar ert arbete med grön IT eller grön IS, med tanke på att det blir mer er strategi för det.

K4: Ja, vi har ju haft den strategin på IT-avdelningen och det är väl kanske mycket min vilja som har varit där, att jag har velat tillföra det här och kört på det konceptet. Det har ju inte varit något tvingande och det är fortfarande ingen som har sagt att vi måste göra det här. Det vi gör idag, det är ju jag som har hittat på det här och hitta lösningar på sådant där. Hjälpa killarna på IT-sidan. Så i vårat fall kanske det är lite granna så. Mycket har hängt på mig, själva genomförandet. Det finns inget dokument, eller något utifrån tvingande som så inte.

AB/AC: Alltså, med tvingande menar vi mycket med lagar och regler och förordningar och så.

K4: Ja, jag känner inte att de har påverkat oss. Jag kan inte hitta någonstans att de ska ha påverkat oss. Det här med grön IT. Jag har svårt att hitta de punkterna så här snabbt i alla fall. Vi har bara sett det som något bra att ha i en del av vårt jobb och jobba aktivt med det. Det är klart att man skulle ha och styra med dokument och visst, med den här politiska visionen är det mycket också, hållbar utveckling och sådant här. Då har vi tittat mot de politiska målen, vad man kan hitta och jobba med. Fast vi har inte kallat det för grön IT, det är ett namn som har

började poppa upp nu på sista tiden. Vi har försökt göra saker på ett annat sätt med miljöhänsyn. Jag tror att grön IS är ganska olika beroende på vem man frågar också. Vissa kanske pratar om digitalisering, "Vad är digitalisering?" och det har jag inget rakt svar på.

AB/AC: Det är ju mycket digitalisering, upphandling, avfallshantering och sånt här man tänker på. Många tänker inte på den sociala och etiska biten.

K4: Nej, tyvärr är ju de sociala och etiska bitarna svåra grejer. Vi som en kommun i Norrbotten. Med nio och ett halvt tusen invånare, så om vi pratar politiskt, hur mycket kan vi påverka? En liten, liten del kanske vi kan påverka. Man borde kanske gå ihop alla kommuner och hela Sverige och ställa krav, kanske med ett EU-perspektiv. Då skulle det få större genomslag. Jag tror det är viktigt att att ha de sakerna i åtanke, absolut. Sen hur man hanterar de sociala och etiska aspekterna, det är svårare, mycket svårare.

AB/AC: Tror du att det hade varit lättare för er om ni hade varit en större kommun? Att arbeta aktivt för detta, eller spelar det ingen roll på storleken?

K4: Jag tror inte det spelar någon roll på storleken, inte på det sättet vi har jobbat. Vi har jobbat ganska mycket internt, inne på IT-avdelningen. Sen är det ju så att en mindre kommun kan vara mer snabbfotad också. Kan lösa många problem i kaffepausen. En stor kommun med många anställda, där är det inte säkert att de som jobbar, till exempel, på miljöavdelningen skulle sitta i samma byggnad som IT-avdelningen. Så skulle nog säga att så som vi har jobbat är enklare i en liten kommun. Annars ska man nå ut till så många människor och har större tröghet. Det är som att styra om en Atlantångare. Fast det kan vara trögt ibland i små kommuner också. Jag vet inte, det är svårt att svara på. Det är så här, jag ska bara koppla in här, jag tog bara en annan bärbar dator. Jag har så dåligt med batteri. Så, jag tyckte det började dra ganska fort från batteriikonen.

AB/AC: Samverkar ni något med privata organisationer gällande grön IS?

K4: Den enda samverkan vi har är när vi köper produkter. Annars har vi inte direkt någon samverkan.

AB/AC: Tror du att det skulle vara något positivt att ha samverkan?

K4: Det beror på, hur skulle man samverka med dem?

AB/AC: Kunskapsutbyte och såndat i så fall.

K4: På ett sätt har vi ju en viss del kan man säga. Vi har ju vissa partners vi jobbar med, men det är ju mer att de säljer saker till oss. Visst får vi ju viss kunskapsöverföring när vi studerar olika produkter. På så sätt finns det ju. Inte kanske det här med att man sätter sig ner i något rundabordssamtal. Sen beror det ju på externa partners också. Om man tittar här uppe så de flesta företag är jättesmå. Det är ju nästan ingen som har egna servrar, utan köper tjänsterna. Jag vet inte, det kanske är mer så att vi skulle ha mer att tillföra. Det kunde ju vara så att man

har konferenser och seminarier, ur ett större perspektiv. Jag vet inte hur mycket det skulle till-
föra. Sen kan man kanske inte bara springa och byta ut grejer för att det är energieffektivt. Inte
så miljösmart att slänga saker som är funktionsdugliga. Man har ju tillverkningsprocessen och
alltihopa. Jo, nu tror jag att jag pratat om allt, vissa kanske inte har något direkt svar, men jag
kanske har berört de flesta. Är det någonting ni funderar över så är det bara att dra iväg ett mail
eller något sådant där. Det går bra.