# Interrelationship between different components of internal control

A qualitative study in Stockholm Municipality

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**Abstract**

Focus on internal control has increased significantly since the late 1990's - early 2000's due to major corporate accounting scandals such as Enron and WorldCom. The scandals raised global awareness and organizations began to pay more attention to internal control in order to assure reliability and effectiveness of the organization. Previous research on internal control is limited to studies on the evaluation of internal control and is mainly quantitative. The purpose of this research is to get a deeper understanding of how components of internal control interact and affect each other. In order to do that we conducted a qualitative study by interviewing employees in Stockholm Municipality. Our findings show that there is a strong correlation between different components of internal control and that they affect each other in various ways. Good control environment contributes to a better risk identification process, while risk assessment can improve control environment because irregularities can be identified and minimized. Information and communication is a base of risk assessment process because risks are identified through communication between all levels of the organization. However, our findings do not reveal how risk assessment affect the component information and communication. Our study contributes to existing literature by filling the theoretical gap.

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# 1. Introduction

## 1.1 Background

Internal control is a structure of policies, processes and routines that helps the organization to achieve effectiveness and efficiency in operations, reliability of financial reporting and compliance with law and regulations. Internal control consists of components: control environment, risk assessment, control activities, information and communication and monitoring activities (Arwinge, 2013). Focus on the internal control in private and public sector has increased significantly since the late 1990's - early 2000's due to major national and international corporate accounting scandals which raised global awareness and caused stakeholders' trust for publicly traded companies to plunge substantially (Clinton, Pinello & Skaife, 2014). Most well-known examples of corporate fraud and corruption are Enron and WorldCom, two large companies that went bankrupt in the early 2000's due to manipulation of accounting and financial reports in order to improve their performance and attract funding (Pfister, 2009).

These scandals led to a new stricter legislation on corporate governance that was formed in the U.S. during 2002 - Sarbanes-Oxley Act. According to the new legislation companies have to assess the process in which these results are produced in and have better control over it. The purpose of this change was to make it more difficult to deceive internal and external stakeholders by fraud and inaccurate information (Ramos, 2006).

As the new legislation was introduced in the U.S., the need for better internal control in organizations in Europe was becoming more obvious. Several scandals occurred in Sweden, i.e. Motala-scandal, where officials used public funds for private purposes (Johansson, 2002), and Skandia-scandal, where company's funds were used to renovate private apartments (Flores, 2003).

The need to eliminate financial fraud and irregularities was a basis of increased interest in internal control (Johansson, 2002). It is very important that an advanced system of internal control functions well in order to assure reliability and effectiveness of an organization. Therefore, we would like to study how different aspects of internal control interact and affect each other.

## 1.2  Problematization

Internal control in organizations has for a long time been regarded as an important tool for a company to reach its aims (Kinney, 2000; Arwinge, 2013). Previous research examines internal control from different perspectives, namely auditor's and chief's perspective (Huefner, 2011; Hermanson, Smith & Stephens, 2012; Fourie & Ackermann, 2013; Muskanan, 2014). Huefner (2011) studied internal control weaknesses whilst Fourie et al. (2013) and Muskanan (2014) studied internal control system effectiveness. Hermanson et al. (2012) conducted a research on how auditors perceive strength of organizations' internal controls.

Many of the studies on internal control are quantitative (Hermanson et al., 2012; Vijayakumar & Nagaraja, 2012; Fourie et al., 2013; Brown, Pott & Wömpener, 2014; Clinton et al, 2014) and have been done on the evaluation of internal control. Furthermore, Kinney (2000), Rae & Subramaniam (2008) and Arwinge (2013) discuss the need for more research within internal control due to lack of sufficient existing research on the subject. As Rae et al. (2008) and Arwinge (2013) point out there is little research on how different components of internal control interact with each other. Kinney (2000) mentions that there are five major barriers that obstruct further internal control research, e.g. complexity of internal control process and lack of access to data.

We would like to study how different aspects of internal control interact and affect each other. Review of previous research has revealed a need for a qualitative study to get a better understanding of internal control and its components. We would like to conduct a study on this topic from employee perspective because it is an under-researched area and we believe that employees play a vital role in an organization and its functioning. Moreover, we believe that this perspective can give us a broader view of how components of internal control are interrelated because employees work with various work processes and routines differently from the management and may notice something that management does not pay attention to.

## 1.3 Research question

We would like to contribute to existing literature and get a deeper understanding of internal control by studying the following research questions:

How do the components of internal control interact and affect each other?

## 1.4 Aim

The purpose of our study is to get a deeper understanding of how components of internal control interact and affect each other. By studying how various processes of internal control are carried out in an organization we will be able to find interaction and relationship between different components. Thus, we believe that our study will contribute to existing literature on internal control by filling the theoretical gap.

## 1.5 Delimitation

We chose to study how different components of internal control interact and affect each other in public sector instead of private sector because we believed it would be easier to get access to different material due to the principle of public access to information. The principle states that the society is given the rights to study public documents formed by the Riksdag, the Government and other public bodies. Moreover, officials and others working in central government, municipalities and county councils have freedom of communication. Furthermore, we down-scaled our study and limited it to Stockholm Municipality because we had an interest in conducting our research about selected phenomenon in this geographical area but also due to time and resource restrictions.

## 2. Literature review

### 2.1 Internal control

Internal control is effected by management and employees of an organization and is seen as a process that provides reasonable assurance regarding achievement of objectives related to operations, reporting and compliance. Internal control helps the organization to strive for effectiveness and efficiency in operations, reliability of financial reporting and compliance with law and regulations (Arwinge, 2013).

Internal control has traditionally been interpreted as "accounting controls" that are inspected by auditors to assure reliability in financial reporting. However, during the last two decades there has been a shift in focus from accounting and finance to a much broader perspective that includes other activities such as  marketing, logistics and technology. Internal control is crucial for providing reliable information and depends on management and employees that design and execute controls, as well as on internal and external auditors that assess these controls (Pfister, 2009).

Internal control can be seen as effective when management is aware of how to achieve operational effectiveness and efficiency e.g. management must understand whether operational processes  are cost-efficient. Furthermore, reliability in reporting is necessary so that it can reflect the reality of the organization correctly. Besides, laws and regulations should be complied with. When an organization meets regulatory requirements, e.g accounting standards and tax requirements, compliance is reached  (Pfister, 2009).

Daniela (2013) mentions that internal control has a number of features e.g processuality, relativity and universality. Processuality means that internal control is a dynamic process that should continuously be adapted to changes within the entity. Relativity refers to providing reasonable assurance but not absolute assurance against risks. Universality implies that internal control is carried out throughout all levels of an organization and involves every person within it.

In addition, internal control has inherent limitations that can prevent organizations from achieving its objectives. One limitation is that people are in charge of internal control and can make mistakes, errors and commit fraud (Pfister, 2009). Moreover, cost of internal control is also a limitation because costs should not exceed the benefits of achieving internal control (Daniela, 2013).

### 2.2 COSO-model

In 1985 the U.S. established the National Commission on Fraudulent Financial Reporting, known as the Treadway Commission, in order to investigate the causes of fraud in financial reporting and to make recommendations to reduce it. Later on, the Committee of Sponsoring Organization of the Treadway Commission (COSO) was created under the guidance of the Commission (Pfister, 2009). COSO is a voluntary organization aimed at providing companies

with recommendations and guidelines to increase efficiency in internal control. In 1992, COSO developed integrated framework - a guidance for the top management to improve their control in organizations in order to achieve objectives related to the business. Internal control according to COSO's definition:

> *Internal control is a process, effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives related to operations, reporting and compliance (Internal Control - Integrated Framework, Executive Summary, 2013).*

In 2013, an updated version was released to make the framework more relevant for complex organization environment. Internal control framework consists of five major components which are control environment, risk assessment, control activities, information and communication and monitoring. In order to create a functioning internal control, management must make sure that all five components are present and operate together (McNally, 2013).

The five components of internal control described in the COSO framework are as follows:
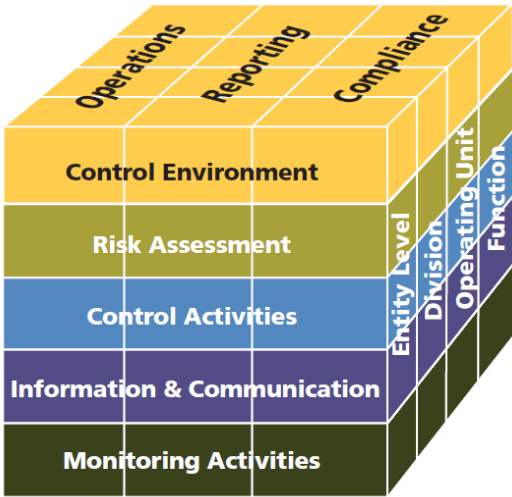


*Figure 1.* Internal Control - Integrated Framework, Executive Summary, 2013

## 2.2.1 Control environment

Campbell, Campbell & Adams, (2006), Lightle, Castellano & Cutting, (2007) and Hermanson et al. (2012) suggest that of the five components in COSO-model, the control environment may be the most critical because it forms the overall tone of the organization with regard to the importance of internal controls. The component consists of standards, processes and structures that provide a basis for evaluating internal control system. This basis describes how the organization intends to achieve its goals and guides employees to the achievement of objectives related to operations, reporting and compliance (Internal Control - Integrated Framework, 2013).

The control environment can be explained as a setting in which the other four components of internal control are located. One of the key aspects in this component is tone at the top, i.e. corporate culture established by organization's leadership, their view on integrity and ethical values. Furthermore, there are organizational aspects of control environment that include staff competence and allocation of personnel's responsibilities (Carrington, 2014).

Lightle et al. (2007) conclude in their study that an effective control environment supports and strengthens other control components, while a weak control environment undermines the other components, declaring them as useless. The authors discuss that in an effective control environment, employees are expected to do the right thing and they know that it will be supported by upper level management even though it can hurt the bottom line. Whilst in a weak control environment, control processes are often overridden or ignored which can provide an opportunity for fraud. The findings of the study suggest that well implemented policies and processes can create and strengthen the control environment. Arwinge (2013) suggests that risk policies should be included in control environment.

The control environment can be affected by internal factors, such as integrity and ethical values in an organization, management's philosophy and operating style, as well as external factors, e.g. competitive environment and laws and regulations that contribute to the construction of organizational structure (Internal Control - Integrated Framework, 2013). Every organization can strive to eliminate or reduce the weaknesses in its operations by designing an effective internal control system (Tsay & Turpen, 2011). Tsay et al. (2011) suggest that establishing a strong control environment is the starting point, but this task can be challenging because it demands changes in the corporate culture throughout the organization, from the operating level to high-level executives, so that management and staff share same mentality.

Ravasi & Schultz (2006), Pfister (2009) and Sadri (2014) define corporate culture as a set of shared assumptions, similar beliefs and appropriate behaviors among management and staff. Further, Ravasi et al. (2006) suggest that these collective behaviors are also need to be taught to new members of the organization. Simoneaux & Stroud (2014) and Sadri (2014) stress the importance of introduction to the company for newly hired employees so that they understand culture and routines in the organization. Furthermore, it is important that management makes sure that employees learn what they need to do in different situations that can arise during a work day (Sadri, 2014).

Many factors, such as organizational structure, control systems and power structures, shape and impact corporate culture. Strong corporate culture, where everyone in the organization shares same values, creates consistency across departments and employees. Employees holding similar beliefs about the organization and how they should behave have significant impact on employee job performance (Sadri, 2014) Sørensen (2002) argues that an organization with strong corporate culture should have better precondition in managing the risks than organizations with a weak corporate culture due to avoidance of failures in coordination, control and communication.

Muskanan (2014) suggests that lack of commitment from top officials leads to poor control environment that affects implementation of internal control negatively. This impacts other internal control components and leaves them ineffective. Further, Muskanan (2014) discuss that lack of formal standards and procedures of different activities, their ineffective implementation and poor monitoring in an organization creates high risk for manipulations, in other words poor risk management.

Control environment may be the most important component of internal control but also the most difficult to manage and evaluate effectively because most parts of it relate to the overall culture in organization (Campbell et al., 2006; Lightle et al., 2007).

## 2.2.2 Risk assessment

Risk assessment involves identifying and analyzing relevant risks which forms the basis for determining how risks will be managed. Risk is defined as the possibility that an event will occur and prevent the organization from achieving its objectives. Risk assessment takes into account different types of internal and external risks (Internal Control - Integrated Framework, 2013). Sources of internal risk come from the nature of business operations, investment activity, financial structure and accounting for day-to-day transactions. Whilst external sources of risk are e.g regulatory environment, such as accounting practices, legislation and regulations, and other external factors such as general economic conditions, interest rates or inflation (Ramos, 2006). Risk assessment plays an essential role in reducing and eliminating the cost of risk and protecting the well-being of the society by making the most effective use of taxpayers' money in public organization (Qiao, 2007). By planning and organizing activities, a company can reduce risks, however, it is impossible to eliminate all risks in the organization, therefore it is important that organizations can accept a certain level of risk (Internal Control - Integrated Framework, 2013).

Moeller (2007) explains risk assessment, in accordance to COSO-model, as a four-step process: identification of risks, estimation of their significance, assessment of the likelihood and frequency and consideration of what measures should be designed. The process of identifying risks should occur at multiple levels of the organization and usually starts with engaging in brainstorming, i.e. bringing together teams from various levels of the organization and discussing what risks can be seen within the organization. As Carpenter (2007) suggests, risk assessments after brainstorming session are significantly higher than assessments given by individuals and brainstorming session generate new quality ideas that were not previously identified. Findings made by Palermo (2014) support the opinion that brainstorming supports risk identification. Furthermore, Palermo (2014) suggests that a "top down-bottom up approach" is also needed to provide organization-wide overview of risks.

The next two steps in risk assessment process are to assess likelihood and significance of the identified risks, it helps management decide which of the identified risks are most critical. When assessing these two elements, a score of 1 to 9 is used to estimate chances if a risk will happen during next one-year period and how severe consequences of the risk can be. Additional information about the identified risks should be gathered before they can be estimated accurately. The identified risks are then averaged by both factors and plotted on a

risk assessment analysis chart. Risks that are rated as high-significant and high-likely are often called the risk drivers or the primary risks and management should focus its attention on these types of risks (Moeller, 2007). However, Samad-Khan (2005) criticize COSO's approach to risk assessment and points out that it is an inappropriate model for risk assessment. Further, Samad-Khan (2005) explains that this method is highly subjective and conceptually flawed because it results in identifying a misleading and false set of risks which affects every subsequent stage of the process negatively. Designed controls and action plans are likely to be non-optimal or lead organizations to create controls in areas that are already over-controlled, while ignoring areas that have major control weakness. Thus, organizations become vulnerable to unexpected risks.

Last step in risk assessment process is consideration of what measures should be designed. Measures can be expressed in wide and uncertain ranges (Moeller, 2007). However, what types of measures are used depend on organizations risk-taking level, also called risk appetite, i.e. a level of risk that can be accepted before response measures are taken. There are four fundamental types of measures: transfer, tolerate, treat, and terminate (Domokos, 2015).

## 2.2.3 Control activities

Control activities involve two elements, namely policy and procedures. A policy determines what activities should be carried out and procedures are the implementation of policies (Ramos, 2006). Policies and procedures help ensure that risks are minimized and prevented, as well as that mistakes and irregularities in financial reports are detected and corrected. Control activities occur at all levels in an organization and at all stages within business processes (Internal Control - Integrated Framework, 2013).

The control activities component should be linked to risk assessment component. After selecting appropriate response measures in risk assessment process, management should select the control activities that are required to make sure that response measures are executed efficiently (Moeller, 2007). D'Aquila (2013) suggests that management should take into account environment, operations and specific characteristics of the organization when selecting and developing control activities. In order to mitigate risks, different types of control activities are needed.

Ramos (2006) mentions that there are several types of control activities:

- Top-level reviews include reviews of actual performance in comparison with budgets and forecasts, as well as analyzing different data, investigating relationships and taking corrective measures. This control activity is an analysis and a follow-up and not a preparation of budget or forecast.
- Information processing can be divided into two groups of information system control activities, i.e. general controls, such as controls over data center operations, system software acquisition and maintenance, and application controls, which ensure that transactions are valid, properly authorized and accurately processed.

- Physical controls ensure the physical security of assets and include adequate safeguards over access to assets, authorization for access and comparison with control records.
- Segregation of duties means assigning responsibilities of authorization and recording of transactions as well as maintaining custody of assets to different people in order to reduce the opportunity for concealing errors and irregularities.

Responsibility and accountability should be appointed to management or employees responsible for the processes associated with identified risks. Further, control activities should be performed  by competent employees with sufficient authority. Management should review control activities from time to time in order to determine if they are still relevant and make necessary changes (D'Aquila, 2013). Furthermore, Ramos (2006) suggests that the design and performance of control activities should be documented in order for monitoring to be precise.

## 2.2.4 Information and communication

Information and communication are basis for a functioning internal control. Management uses information obtained from different sources to support functioning of organization and achieving objectives (Internal Control - Integrated Framework, 2013). Communication plays a vital role in obtaining and sharing the information throughout the organization as well as with external stakeholders, mitigating conflicts and developing understanding and guidance for employees to act in a desirable way (Bharadwaj, 2014).

Carrington (2014) mentions that relevant information needs to be identified. It is crucial that employees are aware of what information is relevant and important to communicate to the management. The existence of different communication channels, which are perceived by employees as "natural" and well functioning in a way that the information is handled correctly, is important so that employees know where to address the information and realize the importance of forwarding it. Thus, good control environment is important in order to have effective communication.

Power (2007) agrees with Carrington (2014) that quality of information and communication reflects in how good control environment is in an organization. In contrary to that, Martin Sanders & Scalan (2014) suggest that information and communication is seen as a component that supports the other components of internal control so that they can function well. In order to support the other components organizations must obtain, generate and use relevant information of high quality as well as communicate it throughout the organization.

Various communications channels, ranging from print publications, phone calls, face-to-face meetings to social network, can be used by organizations to communicate information. Among these tools face-to-face communication is often perceived as an optimal channel for communicating complex information because it facilitates immediate feedback (Crescenzo, 2011). However, if information is communicated via channels that employees dislike it can be ignored (Welch, 2012). Findings of the study by Welch (2012) suggest that management should consider employees as group of diverse individuals rather than a single entity because

workplaces comprise of people with different education levels and communication need. Therefore, alternative channels of communication are necessary to enable employees to choose the most convenient one.

Arwinge (2013) and Svensson (2012) explain that relevant and timely information is necessary to make decisions regarding the organization. Management should consider gathering information from different sources, both external and internal. Timing plays a vital role as well, as it is necessary that information is obtained in time which allows it to be useful to management. Besides, a system for reporting irregularities is critical for internal control to function well. These irregularities should be reported to an individual responsible for the activity as well as to a person on a higher level of management (Ramos, 2006).

## 2.2.5 Monitoring activities

The final component of internal control is monitoring. Continuous evaluation and control of business processes at different levels of organization contribute to providing timely information for the management and the board of directors about deficiencies which later on can be managed. By monitoring work processes, the organization can ensure their quality and effectiveness (Internal Control - Integrated Framework, 2013).

One of the primary objectives of the monitoring component of internal control is to assess the quality of the system's performance over time, recognizing that circumstances will change. Monitoring procedures can be executed in two ways, as an ongoing process and as a part of a separate evaluation (Ramos, 2006). Ramos (2006) mentions that the ongoing process of monitoring may include:

- Supervisory activities, carried out in the normal course of business.
- External communication can consist of e.g complaints from stakeholders. Communicating complaints can indicate system deficiencies in a work process in the organization.
    - External auditors may identify potential weaknesses and provide recommendations on how internal control can be strengthened.
    - The sign-off by employees that an activity is performed. This allows management to supervise the execution of control activities.

There are three fundamental elements which will affect the effectiveness and efficiency of monitoring. The first one is the control environment that includes effective tone at the top, organizational structure and baseline understanding of internal control. Management's beliefs about the importance of monitoring have an impact on its effectiveness and influences the way employees work with monitoring. Organizational structure assigns monitoring roles to management and employees with appropriate competence and objectivity. Baseline understanding helps implement ongoing monitoring and separate evaluations in an effective way by identifying changes in the environment and internal control systems (Arwinge, 2013).

The second element is designing and executing monitoring procedures which involve organization's ability to allocate resources efficiently. The organization needs to understand and prioritize risks. Monitoring procedures should be based on risk assessment process, since risk prioritization is a part of it. Size and complexity of operations, as well as their nature, purpose of monitoring procedures and significance of risks are considered when deciding on scope of monitoring. The scope of monitoring determines what is monitored and who performs the procedures (Arwinge, 2013).

Assessing and reporting results is the last element that affects the effectiveness and efficiency of monitoring. This element includes communication of monitoring results. The organization's ability to communicate irregularities efficiently is crucial for good internal control and effective risk management. Furthermore, the communicated information needs to be relevant, sufficient and timely and also communicated to appropriate employees and management (Arwinge, 2013).

Huefner (2011), Arwinge (2013) and Fourie et al. (2013) emphasize the importance of a functioning monitoring component in order to form effective internal control. Over time, ineffective monitoring leads to weaknesses in other components of internal control and to breakdown of an entire internal control system. Thus, an environment for fraud and waste emerges if other components are not frequently monitored.


## 2.3 Analysis model

Kinney (2000), O'Leary, Iselin & Sharma (2006) Humphrey (2007), Rae et al. (2008) and Arwinge (2013) emphasize the need for further research regarding internal control and its components due to lack of sufficient existing research in this area. In our research we will study three components of COSO-model, namely control environment, risk assessment and information and communication, and how these components interact and affect each other. O'Leary et al. (2006) conducted a research on control environment and concluded that there is a need for further research to understand how control environment interacts with other internal control components. Based on our literature review we believe that control environment is a complex element in internal control because it includes a lot of aspects, such as culture, competence and segregation of duties in organization, and, as Lightle et al. (2007) mention, it supports other components. Furthermore, we believe that risk assessment is important because it is a process that involves communication between employees and management and helps identify and minimize risks in the organization. Carrington (2014) suggests that control environment component can be seen as setting in which other components are located and therefore we believe that weak control environment leads to internal risks. When measures are taken to minimize risks it can improve control environment which in turn makes the organization less vulnerable to risks. The component information and communication plays a vital role in both control environment and risk assessment process because guidelines, attitudes, irregularities etc. must be communicated throughout the organization so that it functions well on all levels.
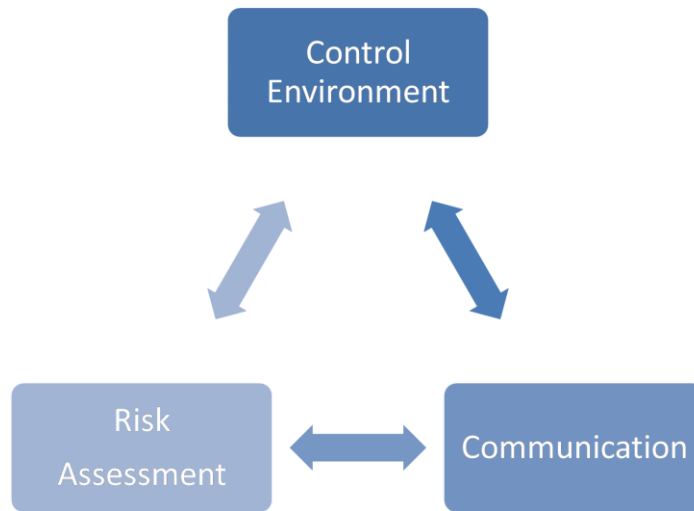
Figure 2. *Analysis model*

The components control environment, risk assessment and information and communication were chosen because we believe that control activities and monitoring are almost integrated with risk assessment and information and communication component in a way that control activities are an outcome of risk assessment process and monitoring is an ongoing process that is carried out through communication. In addition, we see control activities and monitoring as a smaller part of internal control and therefore we believe that studying these components will not contribute to our study to the same extent as the other components.

# 3. Method

## 3.1 Research approach

Within social sciences there are two ontological approaches - objectivism and constructionism. Objectivism advocates that social phenomena are beyond our reach or influence, that people can be taught this reality and that they follow existing rules and regulations. Constructionism, on the other hand, challenges these assumptions and states that social phenomena are constructed in and through interaction (Bryman and Bell, 2013). Regarding epistemology, i.e. what is regarded as acceptable knowledge, there are two positions - positivism and interpretivism. Positivism implies that same methods of research as in natural sciences should be applied in social study. Moreover, positivism states that knowledge can be obtained by gathering facts and that it can be done objectively, i.e. value free. In contrast to positivism, interpretivism requires a different approach to study social phenomena as it seeks understanding instead of explanation (Bryman and Bell, 2013). We as researchers believe in constructionism and that social phenomena are constructed. We undertake an interpretative approach in our study to get a better understanding of internal control. We do not believe that interrelationship between components of internal control in an organization can be studied through positivism as it is difficult to measure and we are not aiming to generate hypotheses and test theory.

The research question we would like to study is: How do the components of internal control interact and affect each other? The aim of our study is to get a deeper understanding of how components of internal control interact and affect each other. In order to achieve the aim of our study we have chosen to apply qualitative research approach. The purpose of using this method is to gain empirical knowledge and understanding about the phenomenon, selected for the study (Farquhar, 2012).

## 3.2 Research design

### 3.2.1 Collection of published sources

In order to conduct our research on internal control we had to get a deeper understanding about the subject, considering that we have not studied it before. By studying scientific articles found in different databases (Google Scholar, Scopus, JSTOR and Emerald Insight) we got an overall picture of the concept and its use both in public and private sector. When searching for scientific articles we used keywords internal control, COSO, public sector, control environment, organizational culture, ethics, risk assessment, communication, control activities, monitoring, audit and material weakness. A wide range of scientific articles was found so we had to select most relevant articles for our study.

Using published sources, such as annual reports, directives, policy documents and reports, has helped us gain better knowledge about internal control and how this process functions in Stockholm Municipality. These sources have also been used as a base in constructing the interview questions. We searched for documents and information on the official website of

Stockholm Municipality, The Committee of Sponsoring Organizations of the Treadway Commission and Insyn Sverige.

## 3.2.2 Collection of primary data

In our study process we collected primary data. Farquhar (2012) describes primary data as the new data collected by the researcher from its original source using different methods, e.g. interviews and observations.

## 3.2.2.1 Choice of data collection method

Primary data was collected by conducting semi-structured interviews, i.e. an approach in which an interviewer uses a list of questions on a specific topic to guide the interviewee. The interview guide is not a rigid set of questions, hence it allows the interviewer to ask additional questions to get clarifications or deeper understanding of a reply. The advantage of this method of collecting data is that it gives flexibility to formulate and ask the respondents follow-up questions but also stay on topic and receive answers that will help with the study (Bryman and Bell, 2013). We believed that semi-structured interviews would provide us with detailed answers and deeper understanding about interrelationship between different components of internal control from employee perspective. If some answers were unclear to us we could ask additional questions and be more specific.

## 3.2.2.2 Choice of interview questions

It was important that the interview questions were aligned with our research question and aim of the study. Our intention with the completed guideline was to get employees' view on how different components of internal control interact and affect each other.

We formed an interview guide with 21 questions. Questions 1-2 were directly related to the respondent and aimed at finding out whether the respondent would like to remain anonymous, if they objected to recording the interview for further transcription and analysis but also to get information about the respondents' background. Question 3 was formed to understand how the respondents perceived the concept of internal control and get an overall picture of the process in the organization. Question 4 was formed to determine what model internal control was based on and to find out whether the respondent applied COSO-model. Questions 5-19 were divided into five groups based on components of the COSO-model in order to facilitate coding of internal control components and further analysis. Moreover, this would give us a common thread throughout the interview. Questions 20-21 were closing questions.

## 3.2.2.3 Choice of respondents

We conducted our research by interviewing controllers, strategists and a financial manager at different departments of seven District Councils and one Specialist Committee located in Stockholm Municipality. Controllers and strategists work for instance with budgeting, monitoring of accounting and the implementation of internal controls. A significant part of their work consists of providing the top-level management with information and material needed to make strategic decisions. Hence, it is important for an organization that internal control is well-established and functioning at this level of organization. We believed that the

chosen respondents would give us answers necessary for conducting our research because their work is related to internal control and they could give us an insight in their work process. The interview with a financial manager was aimed at getting an overall picture of how a District Council is structured and what responsibilities there are at different levels in the organization. This interview gave us valuable information which facilitated further interviews because we were aware of what kind of additional questions we could ask the respondents.

## 3.2.2.4 Implementation of the method

In order to get in contact with possible respondents, we searched the official website of Stockholm Municipality and Linkedin for contact information. Thus, we found  controllers and strategists whom we contacted via e-mail. Furthermore, we contacted department chiefs asking for help getting in touch with employees that were suitable to our study. We contacted 75 people and received an answer only from 35. A reminder letter was sent two weeks after our first mailing and we were able to book additional interviews. In total 12 employees and 1 financial manager were willing to participate in our study. We were aware that this time of year it would be difficult to make appointments with controllers and other employees, who were busy with budgeting for 2016, that is why we contacted as many people as possible.

We visited seven District Councils in Stockholm Municipality (Enskede-Årsta-Vantör, Farsta, Norrmalm, Skarpnäck, Skärholmen, Spånga-Tensta and Södermalm) as well as one Specialist Committee and conducted interviews at respondents' workplace. Three of the interviews were conducted in group, i.e. we interviewed two respondents at the same time. During interviews we used our interview guide to ask same questions to all respondents, further we asked additional questions to get a deeper understanding on how different components interact and affect each other. All the interviews were conducted in Swedish language. In order to minimize the risk of misinterpretation all interviews were recorded using a voice recorder. During the interviews several of the respondents wanted to remain anonymous, therefore we decided to let all of the respondents be anonymous. We believed that it would disturb the reading and be difficult to follow the empirical presentation, analysis and discussion if we used both names and codes. After each interview we transcribed the data. However, we did not transcribe the interview with the financial manager or used it in the study, although the respondent is included in our respondent table (see Appendix 2). When citing the respondents in our empirical presentation, we carefully translated the quotes into English language so that they would not lose their meaning. Thus, the reliability of research would not be affected.

Apart from answers to our questions, the interviews gave us valuable insights of controllers' and strategists' daily work. We got to see the Intranet and the ILS system, an integrated system for management and follow-up, used by Stockholm Municipality. We also received access to different documents related to internal control.

## 3.3 Limitations of chosen method

### 3.3.1 Reliability and validity

Reliability and validity are two of the basic concepts in qualitative research. In order for the collected data to be valid, the research must be relevant to the research question. Furthermore, the data has to be collected in a credible way so that the reliability is considered to be satisfying. Reliability and validity are related even though they are analytically distinguishable. This means that the collected data cannot be valid if it is not reliable (Bryman and Bell, 2013).

Some writers suggest that the concepts reliability and validity in qualitative research should be altered to fit the research and other criteria such as trustworthiness and authenticity could be used when evaluating qualitative research (Bryman and Bell, 2013). Trustworthiness is defined by four components: credibility, transferability, dependability and confirmability.

### 3.3.1.1 Credibility

The term credibility can be used in qualitative research as an equivalent to reliability in quantitative research in the collected and analyzed data (Bryman and Bell, 2013). A critical approach to primary data is required for the study to be considered credible. We attempted to achieve this by citing the respondents' answers. By submitting the findings to the respondents after the transcription of the interviews, the respondents had an opportunity to leave comments about their answers. Thereby, we could get confirmation that the results of the study were valid. This process is called respondent validation (Bryman and Bell, 2013).

Interviewer bias is unavoidable in a research study. Different factors, e.g. facial expression, body language and tone, can affect the interviewee and reduce the credibility of the study (Bryman and Bell, 2013). Questions can also be biased, e.g. leading questions that suggest what the answer should be, so the researcher should avoid using them. Our solution to this issue was to check the interview guideline and practice the interview with a third person to see if some questions needed to be reconstructed or removed. As for the interviews we behaved professional and expressed us with neutral tone in order to minimize interviewer bias.

A critical approach is needed also when collecting published sources because there can be misleading and false information, such as miscalculations and falsified data. We verified the sources of secondary information to assure their credibility by checking the updated websites and using only sources that have a good credibility, for instance scientific articles and documents formed by the Stockholm Municipality and other credible organizations. References to the original sources were used so that the reader could confirm the findings himself.

### 3.3.1.2 Transferability

The term transferability can be used in qualitative research as an equivalent to generalization in quantitative research. It is often suggested that the results from qualitative research are

difficult to generalize beyond the situation in which they are produced. Bryman and Bell (2013) point out the problem when conducting unstructured interviews with a small number of individuals in the selected organization. It is impossible to know if the findings can be generalized to other settings. The interviewees in qualitative research might not be representative of other similar cases. We are aware that findings of our research are limited to chosen municipality and employees and it might be difficult to draw conclusions regarding other organizations. Nevertheless we believe that our study will contribute to the theory on internal control by filling the theoretical gap.

## 3.4 Ethics

When conducting a study, researchers must ensure that the research is done without causing any harm to the participants, in order to do so researchers must consider ethical norms (Farquhar, 2012). We followed an ethical guideline through the entire process, it provided us with different principles which were taken into account when conducting our study. Participants were informed about the purpose of our study and their contribution to it, as well as that there is an opportunity to end the participation in the study at any time and the collected data would not be used then. The collected data will not be used in any other context than in this research. All the respondents were asked whether they wanted to be anonymous and if the interview could be recorded.

# 4. Empirical presentation

We conducted semi-structured interviews and, as we mentioned in the method chapter, questions in the interview guide were divided into different themes in order to facilitate analysis of our data. We applied methods from Grounded Theory in the analysis (Bryman and Bell, 2013). Each interview was recorded and transcribed. The interview transcripts were then coded paragraph by paragraph, thus key points of the data were captured. Key points with similar content were categorized into control environment, risk assessment and information and communication. These categories were then analyzed using theoretical tools presented in our literature review to find connections and interrelationships between the categories. We present our empirical data applying analysis model, discuss each category separately and reveal within the categories how different components interact and affect each other.

## 4.1 Control environment

Respondent 4 points out that all District Councils and Specialist Committees must follow different state laws e.g Kommnunallagen that regulates the organization and responsibility of Swedish municipalities. The City Council provides rules and guidelines for work with internal control and sets objectives that District Councils and Specialist Committees have to work towards. Every District Council must follow these rules, but the way they implement them in practise varies. As respondent 9 mentions "*We have a right to decide and work by ourselves… Not everyone works in a same way, for example, not everyone has meetings with the management or group meetings with head of the department and financial manager*".

Respondent 1 explains that it is important that e.g routines for different work processes exist and function well and irregularities can be discovered. Furthermore, it is important to have an environment where employees feel committed to their work and can point out irregularities to the management. There is a bottom-up communication channel that facilitates information flow and in turn improves internal control in the organization.

In order to create and maintain good and effective control environment, it is necessary to have clear routines for different work processes. Respondent 3 points out that different units (e.g elderly care and social service) and departments (e.g administration and accounting department) have their own routines. Respondent 3 exemplifies: "*If you look at the preschool unit, children's safety is a priority. There is a lot of documentation on how a work process should be followed, e.g. before children can go out to the yard, you have to go out and check if there are no splinters, pieces of glass and other dangerous objects*".

Respondent 1 is saying that District Council A designs lots of routines for different work processes. Communication plays a major part in developing these routines, one can e.g

discuss with employees and management to get information about issues with the routines, as well as look at routines in other District Councils and compare them with the ones you have. Further, respondent 1 explains: *"We work a lot with the development and improvement of routines, that responsibilities take place in the organization and that everyone knows how the work process is structured. Moreover, it is important that the routines are implemented, that everyone who works in line with them knows that they exist, understands the routines and feels the responsibility to follow them. All employees can reason if a routine is sufficient or not".*

Respondents 3 and 4 point out that it is important to inform new employees about routines at the workplace. Thus, they try to minimize the risk of mistakes in the work process. As respondent 4 puts it *"We always inform newly hired staff about ... what rules and routines we have before they can make any mistake"*.

On the other hand, some of the respondents do not design, document and update the routines as frequently as others. Respondent 10 points out that *"some routines are outdated, it takes time to update them all. There are a lot of routines but not everything is written down"*. Respondent 8 mentions *"We do not look over our routines proactively, but only when something happens"*. As an example respondent 8 tells us about a list of contact information that is being updated every year before Christmas holidays. They know from experience that it can be useful to be able to contact staff or management in case of emergency. Respondent 9 also mentions that their routines are not updated frequently but they go through them from time to time.

Another important part of control environment is organizational culture. Respondents 1 and 8 mention that Stockholm Municipality is a large organization and therefore you can not avoid irregularities. As respondent 8 puts it *"We help approximately 2500 people with homecare, and irregularities will occur sometime. It is vital to have that kind of attitude in the organization that allows you to report them"*. Respondent 4 agrees and adds that *"it is important to have support in things you do"*. Respondent 8 mentions that when you have support from management in your work process, it becomes easier to operate the organization. If there is no support from management then focus in different questions may fade and you become less committed to your work.

Respondent 8 continues by saying that in e.g. social services, there is a law called Lex Sarah that requires staff to report irregularities. In District Council G there are instructions that tells you that you have to report complaints and other irregularities. Respondent 8 explains *"Sometimes you may not report enough and in our District Council chiefs meet their*

*employees and explain the importance of reporting irregularities and correcting them*". Respondents 1 and 8 suggest that reporting irregularities leads to correction of them which in turn results in improvement of quality in services provided to the society.

Every District Council and Specialist Committee has its own delegation of authority which documents the division of responsibility. As respondent 9 puts it "*the division of responsibility is controlled hierarchical*" and "*it is an important part of internal control*". Respondent 5 explains that this delegation of authority is updated every year to "*make it clear who can make decisions concerning the economy, spending amounts and how deep down the organization's hierarchy, there are things that head of unit cannot decide on*". Respondent 3 illustrates this by saying that "*head of unit has general responsibility over staff and economy within the unit... head of department has same responsibility over the department...it is their mission to have economy in balance and to achieve objectives... the head of administration has the principal responsibility before the Committee, and it is the Committee that makes the final decision*".

The management decides what kind of training employees get. Learning among employees is very important in the organization because it enhances staff competence and leads to better control environment. All respondents mention that there is an introduction of the organization and workplace for all newly hired staff but it can vary depending on what District Council or Specialist Committee you are looking at. As respondent 5 explains "*How introduction of the organization, education and training are designed depend on chiefs... because of that it can differ between various District Councils and Specialist Committees*".

Respondent 8 explains "*The management introduces Stockholm Municipality for all new employees, they explain how Stockholm Municipality is governed, how they work and what kind of objectives are set. In order to get acquainted with the organization and work processes, newly hired staff has an opportunity to follow and observe experienced personnel. It is very important how you introduce the workplace*". Respondent 3 also emphasizes the importance of introducing essential elements to new employees. It is important that units and departments inform in detail about e.g. existing routines and how they are designed. But it is not only introduction for new employees that is important but also regular training for all employees. Respondent 1 points out that in such a large organization changes constantly occur e.g. new law and regulations, system updates and political changes, so employees need to be informed about them through i.e. workplace meetings and coaching.

Respondent 9 explains that controllers in economic department of District Council F looked through accounting records and discovered the lack of knowledge about tax rules among staff.

To improve the knowledge controllers visit different units and explain how e.g. tax expenditures should be presented in their accounts. Further, respondent 9 states "*These visits are a form of learning in the organization, it creates understanding in different things*".

### 4.1.1 Summary

All District Councils and Specialist Committees have their own way of working with different processes but they all must follow different state laws and rules provided by the City Council. It is important to have implemented routines for different work processes in the organization and an environment where employees can report irregularities to the management in order to improve control environment.

Moreover, there is a clear delegation of authority throughout the organizations and it is crucial that personnel at all levels is aware of the responsibilities. One of many responsibilities the management has is arranging training among employees which enhances staff competence and contributes to establishing a better control environment.

## 4.2 Risk assessment

Risk assessment is one of the major components in internal control and it is especially vital to have a solid risk assessment in public organizations. Public organizations need to maximize utility for the society because they are funded by taxpayers. As respondent 2 puts it "*it is vital that taxpayers' money are used in a correct way. You always ask yourself if it is the right way to spend the money*". The respondents describe risk assessment as a process where you identify different risks in an organization and then estimate the likelihood and consequence level in these risks and score them on a scale from 1-5. These scores are then combined to generate a risk level, a high score means that a risk is highly probable and consequences are severe. Thereafter, risks are entered in ILS system, an integrated system for management and follow-up, that is used by all District Councils and Specialist Committees in Stockholm Municipality. The respondents describe ILS system as a web-based system that is used to clarify political objectives, show the connection between economy, objectives, quality and environment in the organization, as well as to follow up various operations. It is one of many communication channels used in the organization.

The risk matrix is a new feature in ILS system since it has been updated in October 2015.
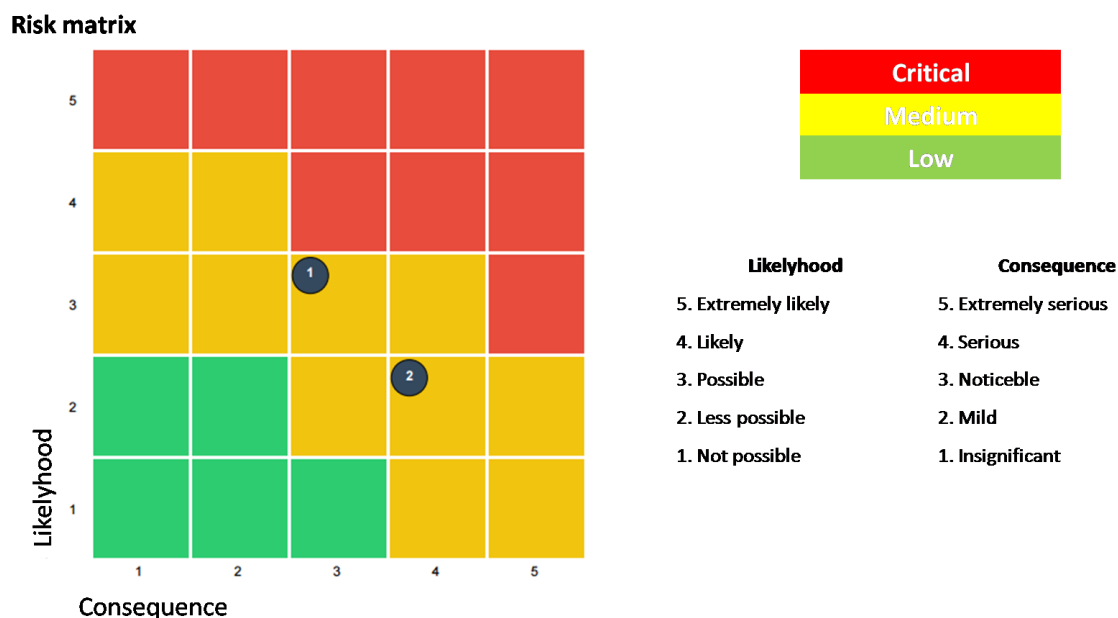
**Risk matrix**

Figure 3. *An adapted version of risk matrix from Stockholm Municipality*

As respondent 8  puts it "*it has become visual for management and for employees*". Respondent 3 explains that this change in ILS system was made because the old system was based on indicators that were not always relevant. Other reasons were a change in focus on objectives and a need to incorporate risk assessment with vulnerability analysis. Many respondents agree that the new system will make their work more efficient and objectives and follow-ups will become more clear, although it will take time.

Examples of risks that can occur in an organization as respondent 9 mentions are financial risks such as irregularities in presenting deductible expenses in their accounts. Another risk which reoccurs in District Council F is managing private funds in elderly care, social care and support care for disabled people. It should be managed in a correct way so that the third part is not affected negatively. Respondents 7, 10 and 11 point out a human resource risk which is high sick leave among the staff. When the staff is absent the quality in work processes can be reduced. Respondent 7 points out a second human resource risk in preschool units and that is a risk of letting a person with criminal intentions into the organization. It is difficult to minimize this risk but they are trying to reduce it by getting an extract from criminal records. Furthermore, respondent 5 describes a risk of lack in competence among staff due to increase in workload and need for hiring more staff in a short period of time. Respondent 5 explains "*Since there are a lot of refugee children coming to Sweden, risk for staff competence increase because we had to hire a lot of people in the autumn and lower job requirements… We need to have clear guidelines so that they can manage their work*".

Risk assessment process can be done in various ways. Respondents 2, 3, 7, 8, 9, 10, 11 and 12 explains that employees, besides controllers, are a part of this process. Respondent 8 explains that each unit is obliged to create risk analysis which is often done through brainstorming , chiefs communicate with employees what kind of risks have been identified and how critical they are. Next, they rank top-ten risks that are summarized at the department-level and here they must reason which risks are most critical, e.g. "*on unit-level you may feel that it is an extremely high risk that a child falls down from a swing in relation to not answering an alarm in nursing home, where a person may be left in the bathroom all night*". All departments prepare one list which is delivered to the executive committee where they decide which risks will be incorporated in the internal control plan for the next year. In some units there are a lot of employees and it can be difficult to gather everyone to discuss identified risks therefore various forms of communication with employees are necessary. Respondent 12 mentions: "*Nursing care unit has 300 employees and it is difficult to gather all of them to discuss what risks have been identified. Nevertheless, the chiefs are very skilled in noticing risks through e.g. employee performance appraisals or workplace meetings*".

On the other hand, in some of the District Councils employees are not involved in risk assessment process to the same extent. Respondents 1 and 13 explain that only controllers discuss risks with chiefs. Furthermore, respondent 5 mentions that this year they did risk assessment themselves without involving units. Respondent 5 explains: "*The ideal scenario is to meet employees and discuss risks with them… However, this year we decided to make units' risk assessment by ourselves because it requires a lot of work and units did not have much time to complete it due to changes in ILS system*".

When risks are identified and scored, the next step in this process is to formulate measures for every risk. There are a lot of different measures and what measures you choose depend on what kind of risks that have been identified. Respondent 7 explains "*You work with measures by ensuring that there are clear routines for work processes, training, creating new routines and informing about them. Sometimes you focus on internal communication to employees or that chiefs need to ensure the work processes but also on external communication, that you need to inform legal guardians, relatives or users when something important happens that they need to know about*". Respondent 2 mentions that in every department there are specialist who work with specific questions, e.g. in preschool department question like children's safety is discussed and in environment department they may discuss questions concerning parks, thus they come up with different measures. Further, respondent 2 sees the specialists as a support function and therefore as a way to minimize the risks.

### 4.2.1 Summary

Risk assessment is a clearly defined four-step process where communication plays an important role. The process includes: identification of risks, estimation of their significance, assessment of the likelihood and frequency and consideration of measures. There is, however, a difference in identification approach among District Councils and Specialist Committee. Some of them do not include employees in the identification process to the same extent as others. An important part of risk assessment process is communication, especially bottom-up flow of information because it facilitates identification of risks.

District Councils and Specialist Committee face different kinds of risks such as financial risks, human resource risks and external risks. These risks are then estimated, the likelihood and consequences are assessed. Each risk receives a value level that is entered in the ILS system. The last step in the risk assessment process is to design measures in order to minimize the risks.


## 4.3 Information and communication

Information and communication is an important component of internal control. All the respondents see communication as a support process which helps them understand work processes, routines and objectives, thereby creating a functioning organization.

Respondent 8 explains that through communication between all levels in the organization errors, irregularities and risks can be identified and corrected in time, in order to prevent them from becoming more serious. Also, risk assessment is one of the main parts in internal control. Without a solid risk assessment, organization will not be able to improve and get more effective.

Communication between all levels in the organization takes place in various ways. As respondent 13 points out "*there is a top-down and bottom-up flow of communication in the organization*", which means that there are channels that allow information flow from management to employees and vice versa. As respondent 7 puts it "*there is a lot of communication in such a large organization and it is necessary to have different channels, from personal meetings to training that ensures knowledge and competence*".

In Stockholm Municipality all District Councils and Specialist Committees use intranet as a communication tool. It is a private network that can only be accessed by the staff. All respondents agree that intranet is a good way to communicate different information such as regulations, programs, training, plans, policies and guidelines. As respondent 8 explains "*Intranet is like a supportive tool for head of departments to distribute information to head of units and employees*". On the other hand, respondents 2 and 12 criticize intranet for not being able to spread this information to the bottom of the organization efficiently because not all personnel uses computer as a work tool.

Furthermore, all respondents feel that it has become more difficult to find information without knowing a specific keyword since Stockholm Municipality changed the intranet system. One

of the problems that respondents 10 and 11 point out is that when you search for information you get information from all District Councils and Specialist Committees in Stockholm Municipality. Besides that, respondent 8 mentions that it can be hard to find anything at all, and then explains: *"If you do not know what you want to find, it is hard to know what information exists. It also depends on how you upload documents, it is vital that you create keywords for the them, e.g. internal control, otherwise you will not get any hits on the document. It is crucial to understand how intranet works"*.

Respondent 13 also explains that it is important to formulate preamble and headings when creating documents so that documents will come up in a search. As an example respondent 13 mentions words "daycare" and "preschool", the first one is used mainly by parents and the second one - by employees, who may be offended by the word "daycare". If you tag word "preschool" in a document, and an employee searches using a keyword "daycare", this document will not come up in the search.

Respondent 8 means that it can be hard to find documents if knowledge about intranet among employees is missing. Therefore, the communicators are important, they can teach employees about different features of the intranet. As an example, the respondent mentions that one of the features is the possibility to update the personal page on the intranet with information like name, occupation and interest. It facilitates the search for information. When controllers search for documents, they will get hits that is relevant to their work.

Respondents 2, 8, 10, 11 and 12 consider SharePoint or public folders as a better alternative for intranet. All documents, that everyone who works in the office need to have access to, can be collected at one place which makes it easier to find them. On the other hand, respondent 13 criticize the idea of SharePoint or public folders. The respondent thinks that it is incomprehensible to create additional ways to store information when employees can instead learn the functions of intranet so it can be more useful to them. Besides, not all of employees have access to SharePoint or public folders so there is a risk that information will not reach everyone in the organization.

Another important communication tool used in the organization is e-mail. All the respondents mention that they receive newsletters from management, as well as that they use e-mail in their daily communication. Respondent 12 exemplifies "*I have an e-mail contact group with 250 employees working in our economy system... As soon as I receive important news I communicate it to them, it is a direct channel*". Besides, respondents 10 and 11 use the calendar function in Outlook to book meetings and feel that "*it becomes more efficient, because we do not need to phone or run to each other*". On the other hand, not everyone in the organization, such as preschool teachers and nursing assistants, uses a computer as a work tool, which makes it difficult to reach them. Hence, it is important to find other ways of communicating and forwarding information to them. Therefore, a vital part of communication is face-to-face interaction, like monthly workplace meetings where employees have an opportunity to communicate flaws and irregularities as well as to receive information from the management. Respondent 8 points out that "*you cannot build an organization only on e-mail and intranet, verbal communication between people is very important. We go to the*

*workplace meetings and talk about the importance of making reports, noticing and forwarding to management when something is not right*".

It is also important to be able to communicate and share information to different stakeholders in order to improve the organization. Social media, like Facebook, Twitter and the official website of Stockholm Municipality, as well as local newspaper are used as a way of external communication.

All District Councils and Specialist Committees have an activity called management of complaints and opinions. The purpose of this activity is to encourage users, residents and other stakeholders to leave complaints and other opinions so that Stockholm Municipality can improve the services that are provided to the society. According to respondent 3, it is a part of internal control that helps management to identify issues that need improvement, e.g. cutting the grass in parks or taking away the trash from public places. Respondent 3 says: "*In preschool you can leave a complaint or a compliment in a box. There is also an app for smartphones where you can leave comments but the most common way to do that is through the official website of Stockholm Municipality*".  If there are a lot of complaints from stakeholders then it is something that needs to be taken into account in the plan for internal control. As respondent 8 puts it "*it is a signal for improvements and we need to set aside more money in the budget for the measures*". On top of that, District Councils and Specialist Committee work with user surveys and "citizens proposals"  in order to improve the quality of their services.

## 4.3.1 Summary

Communication is seen as a support process which helps everyone in the organization understand work processes, routines and objectives and create a functioning organization. There are various channels for communicating information such as face-to-face meetings, e-mail and intranet. Lack in knowledge of functions of different communication tools affects the flow of information and leads to creating alternative channels which can not be accessed by all employees. Although a lot of communication takes place via e-mail contact and social media, face-to-face meetings remain one of the most important channels of communication.

Communication is also used as a part of risk assessment process where reporting irregularities and interaction between management and employees help identify risks in the organization.

# 5. Analysis

## 5.1 Control Environment

Tsay et al. (2011) suggest that in order to create desired control environment in an organization, changing corporate culture is the starting point. Many of the respondents agree that corporate culture, e.g. management's attitude, can change the environment in the organization. As respondent 8 puts it "*The chief's attitude is very important, it is reflected throughout the organization*". The attitude to encourage employees to report different irregularities and not sweep it under the carpet makes them more committed to their work. As several respondents explain, it is important to do the right thing in the organization, they often ask themselves whether they are allowed to do something they have in mind and if they should report when something feels problematic. Employees feel devoted to create welfare for the citizens and without support from the management this dedication can be lost. When reporting irregularities, different risks can be identified which in turn results in designing measures. Thus, respondents tie this aspect of control environment to the component risk assessment.

As mentioned in the literature review, it is important to have clearly defined guidelines (e.g routines and policies) so that the organization can achieve its objectives but also to implement them well in order to strengthen the control environment (Lightle et al., 2007). Respondents have expressed the importance of having clear guidelines such as work processes and instructions for reporting irregularities in order to work towards organizational objectives and efficiency. Respondents believe that these guidelines help to minimize the risks, respondent 5 exemplifies that they have a risk of lack in competence among the staff as we mentioned in the previous chapter and that clear guidelines help new employees do their work correctly, it is seen as a preventive measure. In such way, control environment again interacts with risk assessment.

Power (2007) suggests that there is a strong correlation between components control environment and communication and information. Further, he points out that the quality of information and communication highly depends on how good the control environment is. However, according to several of the respondents, communication is a key aspect in creating a good control environment and therefore it is necessary to communicate all the guidelines to the employees, especially to newly hired staff,  so that everyone is aware of them, follows them and does not make any mistakes from the beginning. This findings support Martin et al. (2014) who suggest that high quality in information and communication is necessary for the other components to function. Simoneaux et al. (2014) and Sadri (2014) stress the importance of introduction to the company for newly hired employees so that they understand the routines and culture in the organization. Many of the respondents share same opinion. Every district has an introductory training where management informs e.g. how Stockholm Municipality is structured and how organizational culture works. On top of that different work processes in units and departments are mentioned, as respondent 3 puts it "*The units inform employees in detail about the routines that are designed so that the organization should function well*".

Moreover, the respondents believe that different channels of communication are needed in order to implement the guidelines throughout the organization. Management needs to adapt the way they communicate to the employees depending on various factors. For instance, there are units where computers are not used as a work tool, then it is necessary to interact "face-to-face" e.g. using workplace meetings.

## 5.2 Risk assessment

Respondents recognize the importance of risk management mentioned by Qiao (2007) who stresses the importance of effective risk management because public organizations have to make the most effective use of taxpayers' money. Respondents work actively to achieve effectiveness in identification and management of the risks.

The whole process of risk assessment in Stockholm Municipality is being carried out in accordance with the COSO framework that describe it as a four-step process: identification of risks, estimation of their significance, assessment of the likelihood and frequency and consideration of what measures should be designed (Moeller, 2007). Respondents mention that identification of the risks requires communication between entities, departments and executive committee. As Palermo (2014) puts it, a "top down-bottom up approach" in risk assessment is needed in order to identify and manage risk . This approach can clearly be seen in District Councils and Specialist Committee, where employees are involved and encouraged to participate in the process. Face-to-face communication, such as workplace meetings where employees and chiefs interact with each other, is a clear example of "top down-bottom up approach" and system of management of complaints and opinions can be seen as bottom up approach. Brainstorming is usually used in order to identify as many risks as possible. Different types of risks can be identified because it involves all levels of the organizations.

Arvinge (2013) points out that control environment includes risk policies and risk assessment processes. Our findings confirm that risk policies are in control environment as well and respondents see these guidelines as an important tool in their daily work that helps minimize risk of irregularities occurring and not being managed.

Sørensen (2002) argues that organizations with strong corporate culture, should have better possibilities in managing the risks than organizations with weak corporate culture, due to avoidance in failures in coordination of work processes, control and communication. As mentioned above, respondents believe that environment created by the management and supported by both parts facilitates identification of risks.

## 5.3 Information and communication

Some of respondents express that good control environment facilitates communication. As we mention above attitudes determine whether employees communicate e.g irregularities and our findings support Power's (2007) and Carrington's (2014) statement, that quality of information and communication highly depends on how good the control environment is.

On the contrary to findings of Power (2007), Martin et. al (2014) suggest that information and communication support other components of internal control and mean that relevant information of high quality should be communicated in order for other components to function well. Several of our respondents instead agree with Martin et. al (2014) by seeing communication as a support process in their daily work and emphasize the importance of clear information about guidelines (e.g. routines and policies) and the importance of communicating this information to the employees. Furthermore, respondents stress the significance of communicating information to the management.

As Crescenzo (2011) mentions, organizations use different types of communication channels, at the same time Welch (2012) points out that if information is communicated via media channels that employees dislike it can be ignored. In our findings, we can see that various communication channels are used in Stockholm Municipality, e.g. face-to-face interaction, e-mail, intranet, facebook, twitter and newsletters. Intranet is one of the major channels used to communicate different information to all employees in Stockholm Municipality. However, as intranet software was changed in the recent years, employees perceive it as more difficult to use and search for information, so many District Councils start using SharePoint and Public folders. Not every employee has access to them so it can affect the control environment negatively and create a risk that information will not reach all employees. Also, those who use alternative ways to communicate and search for information may miss information on intranet. Respondent 8 mentions that knowledge about intranet is important among staff because it is a practical communication channel to use if you know all the functions, without the knowledge more employees will choose alternative ways to communicate information. Thus, the organization will become divided.

Furthermore, Crescenzo (2015) mentions that face-to-face communication is one of the most optimal channels for communicating information. Our respondents share this opinion and explain that an organization cannot be build based only on e-mail, phone calls and social network. Moreover, face-to-face communication, e.g. workplace meetings, is often used to spread important information or news and as a step in risk assessment process. By communicating with employees chiefs are able to notice and identify different issues which can occur at unit and department level and need measures.

Another vital aspect in managing an organization is to create such control environment that facilitates bottom-up communication. As Svensson (2012) suggests, management needs relevant and timely information to make decisions regarding the organization. Carrington (2014) points out that employees need to know where they can address the information and realize the importance of doing it. Our findings show that Stockholm Municipality has a developed channel for such communication, i.e. there is a clear structure for bottom-up

information flow, employees are aware that they can communicate information to their chief that in turn will pass on the information upwards until it reaches the City Council.

In addition, there is a system of  management of complaints and opinions that allows employees but also citizens and other stakeholders to leave comments (e.g. complaints or compliments), this information reaches management and can be used in risk assessment process. As an example, citizens may complain that city parks are littered with trash. In order to eliminate the risk, District Councils can put in extra park cleaning efforts as a measure.

# 6. Discussion

The purpose of our study is to get a deeper understanding of how components of internal control interact and affect each other. We have chosen to focus on three components of the COSO-model, i.e. control environment, risk assessment, information and communication. We have therefore sought to answer the research question: How do the components of the COSO-model interact and affect each other?

We believe that we have achieved the purpose of the study by analyzing our collected data. Each interview session added new knowledge and aspects of the discussed problematization. The interviewees seemed to have a lot of knowledge and understanding of internal control process in the organization and gladly shared it with us. Their interest in this topic gave us substantial empirical data which was analyzed and could in turn give us deeper understanding of interaction between components of the COSO model.

Previous research on how different components interact with each other is very limited which leaves room for our own thoughts and reflections on this phenomenon and gives us a possibility to contribute to the literature by filling the theoretical gap.

The study reveals that there is a strong correlation between the components and that they interact with each other in a mutual way. Moreover, we can conclude that these interconnections are very complex and it is difficult to single out one component from others. This study has identified a clear interaction between components control environment and risk assessment. Good control environment contributes to a better risk identification process, while risk assessment can improve control environment because irregularities can be identified and minimized by measures. A—connection between risk assessment and information and communication is also revealed in our study. Information and communication is a base of risk assessment process, risks are identified through communication between employees and management, but also within the management. However, our findings do not reveal how risk assessment affect the component information and communication. We can assume that it can depend on what questions we asked the respondents, we may have missed to ask additional relevant questions. Further research may find that connection.

As mentioned above, the research shows a mutual connection between control environment and information and communication. Previous research suggests that quality of information and communication reflects in how good control environment (Power, 2007; Carrington, 2014). Other researchers (Martin et al., 2014) point out that information and communication support all the other components of internal control. Surprisingly, our findings support both these statement. We believe this can be explained by the complexity of these components. Control environment has many aspects, such as culture, staff competence, routines, work processes, policies, compliance with law etc., and these aspects need to be communicated in order to have a functioning environment in the organization, at the same time control environment with appropriate channels for communication is needed to spread the information throughout the organization.

We believe that the revealed interconnections between components do not depend on type of organization that we studied. Further, we can speculate that these components can direct or indirect be seen in all organizations, without control of the organization, the organization can become vulnerable to different risks. If not managed risks can lead to failure in the operations. Thus our findings can be generalized to other settings and suggest that these connections can be found in other organizations.

## 7. Conclusion

The review of literature revealed existence of research gap on understanding how different aspects of a system of internal controls affect each other (Rae et al., 2008; Arwinge, 2013). The purpose of study was to get a deeper understanding of how components of COSO-model interact and affect each other. The findings of our study suggest that there is a strong correlation between the studied components control environment, risk assessment and information and communication and that they affect each other in various ways. We believe our findings can be generalized to other settings and suggest that these connections can be found in other organizations.

The theoretical contribution of this study is obtaining a deeper understanding of relationship between three components: control environment, risk assessment and information and communication. As previous research has not directly shed light on this subject, we believe that this study adds to literature by exploring the interrelationships between these components.

Our findings draw attention to questions for further research. The study has not been able to demonstrate how risk assessment affects information and communication. Therefore we recommend to do additional qualitative studies to find the interconnection between these components that we believe exists. Moreover, research should also be undertaken to investigate how components of COSO-model, e.g. control activities and monitoring activities, interact with each other, as well as with the other components.

## 8. Limitations of our study

This study is subject to limitations. First, lack of previous research on the topic made it difficult to relate many of our findings to theory and not be able to compare our findings with researchers. Second, interviews were conducted during a period of change in the ILS system in Stockholm Municipality which might have affected opinions of the respondents. Lastly, chosen method of collection the data may also implement possible uncertainty in empirical data because we could have interpreted our finding in a way that does not consist with respondents actual interpretations.

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# Appendices

## Appendix 1. Interview guide

**General questions for the respondents**

1. Can we use a voice recorder for the interview and do you want to be anonymous in our study or not?

2. Can you tell us about yourself and your position in the organisation?

**Internal control**

3. How can you describe the concept internal control?

**COSO-model**

4. What model for internal control is used as a guideline?

**Control environment**

5. How are duties segregated in the organization?

6.  Which laws and regulations do the organization comply with?

7. How do you design a plan for internal control?

8. How do you spread knowledge about internal control in the organization?

9. Do you use any specific quality systems?

**Risk assessment**

10. How do you identify risks in the organization?

11. How do you mitigate risks?

**Control activities**

12. What control activities are performed in the organization?

13. Do you have guidelines on control activities?

14. How do you ensure that different systems and procedures function reliably?

**Information and communication**

15. How is information communicated between different levels of the organization?

16. How is information communicated to external stakeholders?

**Monitoring activities**

17. How do you monitor different processes?

18. How often are the work process routines updated?

19. How do you evaluate organization's systems and routines?

**Closing questions**

20. Is there anything you want to add?

21.Can we contact you via e-mail or phone call if any further questions come up?

## Appendix 2. Respondent table

| Respondent | District | Time |
|---|---|---|
| Respondent 1 | District A | 52 min 49 sec |
| Respondent 2 | District B | 50 min 59 sek |
| Respondent 3 | District C | 40 min 30 sec |
| Respondent 4 | District D | 42 min 03 sec |
| Respondent 5 | District D | 42 min 03 sec |
| Respondent 6 | District E | NEJ |
| Respondent 7 | District F | 37 min 21 sec |
| Respondent 8 | District G | 1 h 18 min 58 sec |
| Respondent 9 | District F | 34 min 26 sec |
| Respondent 10 | District B | 1 h 47 min 45 sec |
| Respondent 11 | District B | 1 h 47 min 45 sec |
| Respondent 12 | District B | 50 min 59 sec |
| Respondent 13 | District H | 1 h 2 min 17 sec |

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