SCHOOL OF
ECONOMICS AND
MANAGEMENT

LUND UNIVERSITY

Department of Business Administration

BUSN79, Degree Project in Accounting & Finance

Spring 2020

Management Control & Risk Management Integration

- An Empirical Study of Swedish Banks

Alexandra Graff and Olivia Borgström

Preface

We would like to start by thanking our supervisor, Johan Dergård for his appreciated guidance and feedback during our research process of this master thesis. We would also like to express our gratitude to the all the banks that dedicated their time and participated in our survey with valuable contributions. Finally, we thank each other for constantly communicating and supporting each other to be able to complete this master thesis.

Lund 29 May 2020

--------------------------------	-----------------------------------
Alexandra Graff	Olivia Borgström

Authors: Alexandra Graff & Olivia Borgström

Title: Management Control & Risk Management Integration

Supervisor: Johan Dergård

Examiner: Rolf Larsson

Methodology: This paper utilized a qualitative research design with a survey used to answer the proposed research question.

Purpose: The purpose of this paper was to explore how Swedish banks have integrated management control and risk management and, if bank size and strategy had any effect on the level of integration.

Abstract: The research area of management control and risk management is relatively novel, especially in the integration aspect of the two. The regulated environment of banks is of interest to this topic due to an already existing high extent of risk management within the organizations. This study uses theoretical foundations of established management control systems and risk management factors, aiming to gain insight into whether banks integrate the two. Another aspect this study takes into consideration is the role strategy and size plays in the design of control and risk management systems. For this part, the number of employees and three types of strategies are used as a measurement method. The study is of a qualitative nature utilizing a survey approach focusing on five controls and three types of risk. We conclude that the banks that participated in our thesis, integrated risk management and management control systems in their everyday operations. Furthermore, the variables size and strategy had an effect on the level of integration.

Keywords:
Risk management, Management control system, MCS, Banks, Strategy, Size, Integration

1 Introduction

In the following chapter the background to management control systems and risk management will be presented along with an introduction of previous research in this area. The problem discussion will be introduced following the problem formulation and limitations to the paper.

1.1 Background

Management control systems have over time had a number of definitions and there have been various conceptions of what should be considered a MCS, depending on different viewpoints. A broad stance on what management control is explains it as systems, rules, practices, values and other activities put in place by management that direct the behavior of employees to ensure it is consistent with the objectives of the organization (Otley & Berry, 1980). Thus, due to its purpose, MCS have gained great importance for many organizations that employ them to achieve better control.

Over time, the more traditional purpose of management control has expanded to newer forms with informal controls as a means to influence behavior and for strategic purposes. There have also been new approaches of looking at how different forms of management control can become integrated. Studies have looked at how the integration of different control systems can be advantageous such as integrating management control with financial accounting (Taipaleenmäki & Ikäheimo, 2013; Woods, 2009). The result was successful and the developments in IT has been a facilitator in the integration process. Thus, management control systems can have an impact on separate systems in an organization if used in an integrated manner. Malmi and Brown take a similar approach and emphasize the relationship between control systems by designing management control as a package. This approach is argued to be beneficial for developing a better theory on how the control range should be designed in a way that supports the objectives of the organization, the control activities, as well as help drive the performance of that organization. The package approach can also help realize the impact of the various controls. Studying management controls systems and their accompanying controls as being related and integrated has been supported by previous researchers due to the complexity and relationship between variables which is the basis of Malmi and Brown's package approach (Malmi & Brown, 2008). Something that has proven to influence how organizations design their MCS is strategy and it is argued that MCS need be aligned with the overall strategy of the organization (Young & Selto, 1991; Chenhall, 2005; Chenhall & Langfield-Smith, 1998; Ittner, Larcker, & Randall, 2003). Many studies have looked at how strategy affects the control systems in organizations and have hypothesized that strategy affects them in multiple ways, depending on how strategy is categorized (Otley, 2016). Furthermore, researching the aspect of organizational size and its connection with the management control system in place is another interesting angle. Larger organizations have more resources compared to smaller ones which could affect how they design and integrate control systems (Child & Mansfield, 1972; Chenhall R., 2003). Since organizations can differ substantially in size, with varying levels of resources available, that is another aspect that can be researched in relation to management control systems. Therefore, the management control system in an organization depends on various factors that differ from company to company.

1.2 Problem discussion

One important factor related to management and integration is risk management. Risk management has become increasingly important for companies, especially financial institutions in recent years. This stems from regulatory pressure existing in the industry and has led to frameworks such as COSO, Sarbanes-Oxley, the Basel Accords, and the Cadbury Report which all push towards a heightened risk management structure (Mikes, 2011; Crawford & Nilsson, 2018). The unfolding of the financial crisis was another factor that put pressure on financial institutions to embrace risk management and governance (Lundqvist, 2014; Woods, 2009). Even before the financial crisis unfolded, risk management has been of interest in the banking sector due to both regulators and participants in the market wanting to reduce the uncertainty in the sector. The volatility of asset markets along with decisions by traders and investment managers prove how the financial services industry is quite unique (Kaplan & Mikes, 2012). The financial crisis led to a push towards having executives devoted to enterprise-wide risk management and failures in previously existing risk management processes and a lack of it in banks have also fueled a need for better risk management (Mikes, 2011). The regulations put in place have also encouraged a more holistic risk management approach and researchers have developed frameworks on how risk can be linked with various strategies and how the entire organizational structures can be altered to include risk management (Giovannoni, Quarchioni, & Riccaboni, 2016). Thus, this can also be interpreted as the management control system having a role in facilitating and promoting risk governance. The role of management control has evolved in a response to challenges faced by companies operating in uncertain environments which has led to a more dynamic and complex approach. Due to this, organizations are straying from the earlier cybernetic and traditional approach to MCS. The more open approach has enabled control systems to facilitate innovation which can provide a competitive advantage (Chenhall & Moers, 2015).

Although risk management and management control systems have been studied extensively as two separate phenomena, there does not exist substantial research in the area of integration between the two. The few studies that do exist focus on financial institutions due to their regulatory requirements leading to a greater need for risk management, thus the relationship can be more easily identified. However, there is a lack of research comparing the integration between different types of banks, depending on size and strategy. Strategy has shown to have an effect on control systems, thus in relation to risk management it is an interesting aspect. Similarly, with size, organizations that are large and have more resources may design their control systems differently from the smaller organizations. The case studies that exist to this day focus on either one or two banks. Since regulation has shown to greatly influence the extent of risk management within organizations, specifically banks, it raises the question of how the risk management in different banks vary. Since regulatory requirements push these institutions to integrate risk governance and since the more dynamic and flexible management control systems today facilitate flexibility much more than before, organizations can integrate risk management in their control system more efficiently. Studies have shown that company strategy plays a role in designing the control system and also the degree of integration with risk management (Chenhall R. , 2003). Thus this can apply to bank strategies as well (Crawford & Nilsson, 2018). Bank size is the other factor that is of interest since there is a lack of research in that area in relation to risk management and management control. There has been a lack in understanding how risk management can affect or influence decision-making which is partly due to the lack of studies (Chenhall & Moers, 2015). Thinking of risk management as being separated from the overall management control system and having a small effect on strategy is counterintuitive (Bhimani, 2009). Taking this together with the existing literature on how integrated controls can bring benefits such as better decision-making abilities, the importance of integrating risk management and management control systems become quite clear. The lack of understanding and awareness of the positive aspects in integrating different control systems can lead to organizations designing their MCS without integrating things such as risk management. Thus, more research in the area of integration between risk management and MCS is needed to gain a better insight into the topic and the opportunities associated with it.

1.3 Purpose

This study has two purposes, the first purpose of this thesis is to generate an understanding of how and if banks integrate risk management into their management control systems. What is meant by integration in this paper is how the two concepts, risk management and management control are brought together and united. We will measure how banks use management control to affect and prevent their risks. Five controls will be used to measure how banks integrate the two. The second purpose of the study is to investigate the effect size and strategy plays in the level of integration. Specifically, we investigate how this differs between different Swedish banks and what emphasis is put on risk management in their control frameworks, if any.

Using controls from Malmi and Brown’s package approach to management control along with control definitions by Merchant and Van der Stede, we study how risk management is integrated in these within various Swedish banks. Incorporated in the management control components are also risk management aspects such as different types of risks and relevant risk controls. For the risk management perspective, Kaplan and Mike's characterization of risk is employed and integrated with the chosen controls. Bedford and Malmi’s characterization of strategy is applied to determine the individual bank strategies. Hence, this paper aims to answer the following empirical question:

- How have banks varying in size and strategy integrated risk management into their management control systems?

In order to answer the research question, a theoretical framework will be developed based on relevant literature covering management control and risk management. This integrated theoretical framework is an additional contribution of this thesis.

2 Theoretical framework

In the following chapter, an introduction of the theoretical framework will be presented. Basic assumptions and previous research will be accounted for and the paper's self-made framework will be introduced.

2.1 The Framework of Malmi & Brown

There exist multiple frameworks in relation to management control systems, and in order to fully analyze the research topic of this paper, controls were chosen from two main frameworks and will be used as a theoretical base. Teemu Malmi and David A. Brown wrote the paper on *Management control systems as a package – Opportunities, challenges and research direction.* The authors provide a new typology for MCS, which is constructed based on the disparity between decision making and controls and how managers use controls to manage their employees behaviour. The writers suggest a concept of management controls, rather than having organisational controls. The Management controls system package consists of cultural controls, planning, cybernetic controls, reward and compensation, administrative controls (Malmi & Brown, 2008; Otley & Berry, 1980). The package approach suggested by Malmi & Brown suits the purpose of this paper which is analyzing integration between systems thus it was deemed appropriate. From this framework controls deemed the most useful and interesting in relation to the research topic were chosen to be part of the analysis.

The first parameter in the framework, *planning control*, is a tool to help organisations set out goals for a specific area and thereby direct employees' efforts and behaviour. It also provides a standard for the workers in relation to achieve the company’s goals and clarifies what the management is expecting. The planning control will also function as a coordination through a set of goals and thereby control the group or individual employee. An important aspect of planning control is to understand if it's used to decide future activities or if it's used as a tool to engage employees to their work commitments. Secondly, *cybernetic controls can* be either an information system or control system, the difference is based on "how" the company uses it. Cybernetic controls can help management find unwanted patterns of and underlying behaviour or activities within the organization. By having more knowledge of unwanted activity or behaviour, it can facilitate decision making. There are four basic cybernetic systems brought up in the article: budgets, financial measures, non-financial measures and hybrids that consist of both financial and non-financial measures. Thirdly, *reward and compensation controls,* is a control that sets out to increase motivation and work performance with the individual employee and work teams within the organization. The basis of the argument is that rewards and compensation leads to an increased effort in different work tasks, as compared with not having rewards or compensations in place. By having this control in place it can lead to improved performance in effort direction, effort duration and effort intensity. Fourthly, *administrative controls,* is a system that can directly control the behaviour of the individual and groups, within the organization. Through monitoring behaviour the employees are made accountable for their behaviour, performance and task that have been performed or not performed. Employees behaviour can be monitored through the organization design and structure. By implementing a structure within the organization it can work as a control to reduce the variability of behaviour and increase predictability threw out the organization. According to the authors the design and structure of the organization is something that a manager can change and in return can be used as a control. The employees are held accountable for their performance through the governance structure of the corporation, which relates to the company's board structure and management. The governance structure is the authority and accountability lines as well as systems that the organization has to ensure activities are met. This could be scheduled meetings, deadlines and creating agendas which directly influences the behaviour of the employees. Lastly, *culture control,* are values, beliefs and social norms that influences the behaviour and action of the organization's members. This is a control manager rarely can control but is a control that can be used to control the behaviour of various members of the organization (Malmi & Brown, 2008).

2.2 The Framework of Merchant and Van der Stede - Object of control framework (adapted from Hutzschenreuter)

Jens Hutzschenreuter wrote a book *Management control in Small and Medium-Sized Enterprises*. For this paper, the *object of control framework* of Merchant and Van der Stede is analyzed more carefully as it presents result control and action control, as well as personal control and cultural control. The authors analyze how these four different controls influence the MCS within an organization (Merchant & Van der Stede, 2012; Hutzschenreuter, 2009). Components of this framework were chosen and will be used in the research approach of the paper in a similar manner as with Malmi & Brown.

According to the authors result control and action control are implemented directly throughout the organization. Result control is a control of outputs through management, which are enforced achievement of objective goals through monitoring and rewarding outputs. Some examples of how a manager can exercise this control is through performance measurements, budgeting, reports of achievements and reward structure. Action controls, unlike result control, aim to prevent undesired behaviour, rather than enforce targets. Action control is exercise through management and intents to promote desired behaviour for task accomplishment. Examples of how managers could perform action controls is through physical or administrative restrictions, supervision of rules, operational or procedure guidelines (Merchant & Van der Stede, 2012).

Personnel control and culture control are viewed by the authors as indirect controls, which means that they are not controls directly implemented by the management. Personnel control is a pursuance of self-control by the individual employees with the aim of fulfilment of job requirements. Techniques of exercising personnel control is through recruitment policies, training programmes and job design. Culture control on the other hand, are group controls among the members of the organization, through the establishment of shared values, beliefs and social norms. This control is exercised through codes of conduct, group-based rewards, interaction amongst employees and that the managers is looked upon as a role model (Merchant & Van der Stede, 2012).

Previous literature has by using Merchant and Van der Stede framework, *object of control framework,* studied how the four categories are best implemented in different organizational structures. Furthermore, how innovative companies have placed a greater weight in implementing indirect controls rather than focus on direct controls (Haustein, Luther, & Schuster, 2014).

2.3 Risk Management

Various risk management frameworks have been developed over the years. Some categorize risks into different types, others take a contingency approach. More recently a combination of the two have been adopted as proposed by Kaplan and Mikes. The three categories of risk are defined as preventable, strategy, and external risks. An important point to note is that any of the risks can be detrimental for the strategy and survival of an organization. Category 1 refers to preventable risks and these are risks arising internally. These risks can be controlled and eliminated and some examples are unethical or illegal actions by employees or managers. Different control modes for this type of risk include integration of a model with a culture and compliance emphasis and development of mission statements, systems with values, systems with rules and boundaries, or internal controls. The second category refers to strategy risk, which comes from the company strategy. Examples of strategy risks are credit risks from lending money for banks, or risks arising through R&D activities. These risks are different in its nature from preventable risks since a component of them are desirable. In order for a company to accomplish its strategy and its accompanying returns, the company needs to take on some risk. However, those risks still need to be managed. Ways to manage these risks include having discussions and using tools such as risk maps or key risk indicators. There can also be allocation of resources to mitigate some risk. The third category refers to external risk, which arise from things happening outside an organization. External risks are outside the control of the organization and include things such as natural, political, or macroeconomic events. Thus, in order to manage these risks the focus needs to be on identification and impact mitigation. Examples of these are stress tests, scenario planning, or war gaming (Kaplan & Mikes, 2012). In order to design an effective risk management process, these three categories can be used to tailor it.

2.4 Strategy

The relationship between strategy, MCS and risk management has appeared in previous studies. Through previous literature it has been determined that strategy plays a role in how control systems are designed in organizations. Since strategies can vary quite extensively, the type and characterization of strategy has an effect on controls as well. Examples of strategies include characterizing organizations as defenders, prospectors, analyzers, and reactors. There are also the three strategies of low cost, differentiation, and focus (Otley, 2016). In order to determine the role strategy plays in the integration process in our study, Bedford and Malmi's characterization of strategy is applied, which is based on (Chenhall, 2005; Chenhall & Langfield-Smith, 1998; Ittner, Larcker, & Randall, 2003). Here, strategy is divided into three main types, low cost, innovation/differentiation and customer focus. Examples of characteristics for the low cost strategy include offering low cost products/services and low price. Innovation/differentiation strategies include being early to the market with new products/services, providing an extensive range of products/services, and experimenting with new products/services. The customer focus strategy includes providing products/services of high quality, meeting delivery agreements, and providing superior customer services (Bedford & Malmi, 2015).

2.5 Integrated Theoretical Framework

A custom framework has been created to identify how MCS and risk management are integrated. Various frameworks regarding management control exist and, in this study, controls deemed most appropriate to the research topic were chosen from different sources. The framework is built using the previously mentioned frameworks based on Malmi & Brown and Merchant & Van der Stede. Based on components of these two frameworks the customized model is developed to show how these variables are integrated with the previously mentioned risk management categories from Kaplan and Mikes. In order to facilitate the integration between controls and risk management, we linked each control to the risk management factors that we deemed appropriate. What the linkages we deemed appropriate means for this study is that our chosen set of management control factors can best be integrated to support risk management with certain types of risk, not all risks. Thus, we link the risks with the control factors which explains how the control factors could be used to mitigate those risks. The framework also presents examples of risks related to each risk type and control and examples of how these risks can be controlled.

In order to examine how the management control system and risk management integrate, risk management had to be defined. The angles chosen are the three categories of risk by Kaplan and Mikes, namely preventative, strategy, and external risks. For our model to include both the aspect of risk management and management control, these were integrated with the five types of controls. The categories were included in our model due to the fact that the categorization provides insight on the different ways on how to manage risks. This facilitates the analysis of how controls can be used and integrated with risk management, since the categories provide a broad understanding of risk. The topic of management control is defined as mentioned in previous sections as systems and activities that direct employee behavior (Malmi & Brown). Thus, when relating it to risk management it is of importance to the study that by risk management what is meant are risks that relate to those systems and activities. To facilitate the understanding of our model, some examples of risks in each category will be given. Specifically, how they relate to management control.

Excluded

From Merchant and Van der Stede result-, action- and culture control have been chosen in our own model. Starting with why personnel control is excluded is due to limitation regarding the research approach. Because the study consists of survey studies that are distributed to higher employee management, we believe that a form of deeper analysis would need to take place to be able to properly analyze the impact that personnel control can have on an organization. Such analysis would consist of interviews with not only management but also employees that are a key part of the day to day operation of the organization.

Result & Action

Result- and action control are chosen because of the essence of the paper, which is to research the banking sector. An assumption in the paper is that the banking sector is highly controlled by regulations, such as laws and ethics of what a manager should follow. These types of regulations come both from the laws of the country, financial inspection agencies and the statutes of the organization. Therefore, the need to have direct controls is believed to be an essential part of the day-to-day operation of banks. The result control has been linked to all three types of risks. A key characteristic of this control is monitoring and rewarding outputs and most types of risks can be monitored. Thus, the controls and risks are interrelated due to the monitoring abilities which also relates to rewards. The action control, another direct form of control with an emphasis on behavior control through management. This includes things such as prevention and promotion of certain behaviors. This control is also linked with all three types of risk and can be used to control them due to them being linked to restrictions, manuals, and procedure guides. Although the external risk may be not as controllable, through this control it can be somewhat managed.

Cultural

The cultural control is chosen as this is an aspect that is believed to play an important part in every organization and that is looked upon differently from manager to manager. Analyzing how much weight the different organizations put on more direct controls and indirect controls in relations to risk management is one of the interesting aspects this paper aims to analyze. The culture control which relates to shared values, norms, and beliefs is linked to strategy and preventable risks. Having a risk-averse culture could help reduce these risks but the occurrence of external risks is not linked with the organizational culture in our model.

Planning

The planning control includes setting out goals of the organization and standards related to those. The type of risks we link to this control are all three: external, preventative and strategy. The reason for this is that all risks can be a part of the planning process. If potential risks are included in the planning control, the organization can control them to some extent.

Reward

From Malmi & Brown reward & compensation and planning control are chosen. Rewards and compensation which in our model relates to preventable and strategy risk. The rewards and compensation is about motivating employees and controlling their effort in various ways. This can be used to control the two mentioned types of risk, however uncontrollable external risks are not as suited. Thus, our model focuses on strategy and preventable risks with this particular control.

Our framework is built up in a logical way with vertical and horizontal columns. Beginning with an explanation of the vertical columns, the first column includes management controls and our five chosen controls which will be further explained in the following paragraph. The second column includes the type of risk that we linked to each type of control, (preventable, external, or strategy). Three controls were linked to all types of risk (result, action, planning), and the other two (reward/compensation, culture) were linked to two types of risk. The chosen risks are displayed in the column. The third column contains examples of risks related to each individual type of risk. Since the type of risk affects the risk, we provide an example for each risk linked to the control. The fourth column contains examples of how to control each of the previously mentioned risks. This is also how the study will measure the extent the bank integrates risk management and management control. Thus, there is a logical flow from left to right linking the risks and controls. The horizontal columns are divided into the individual chosen management controls. This framework will be used in order to answer our research question in a survey following the same format but with questions related to each type of risk and control.

Table 1. Our framework based on Kaplan & Mikes, Malmi & Brown and Merchant and Van der Stede

Management Controls (Adopted by Malmi & Brown / Merchant & Van der Stede)	**Type of Risk** (Adopted by Kaplan & Mikes)	**Examples of risk**	**Examples of controls**
Result control	Preventable, Strategy, External	Preventable: theft Strategy: employee mistakes/poor performance External: macroeconomic events/recession	Preventable: inventory control, budget deviation, cash count Strategy: report of achievements, cash count External: analysis
Action control	Preventable, Strategy, External	Preventable: unauthorized actions by employees to customers Strategy: access to confidential information External: technical issues, system malfunctions	Preventable: procedure guidelines, supervision of rules Strategy: physical/administrative restrictions External: manuals/technical support
Culture control	Preventable, Strategy	Preventable: unethical behaviors Strategy: difficulties controlling social settings/behaviors	Preventable: code of conduct Strategy: managers serving as a role model
Planning control	Preventable, Strategy, External	Preventable: misinterpretations of goals/plans Strategy: deviation from original goals External: macroeconomic/environmental/political factors	Preventable: regular meetings to discuss all plans/goals & progress Strategy: back-up plans, follow-ups External: awareness, ability to adapt and be flexible with existing goal/plan
Reward/compensation control	Preventable, Strategy	Preventable: unethical/inappropriate rewards Strategy: employee expectations/dissatisfactions	Preventable: code of conduct/restrictions Strategy: meetings with human resources department, follow-ups

3 Methodology

In the following chapter the research approach will be presented and the research method will be explained. A detailed description of the survey study will be presented and the data analysis approach will be explained.

3.1 Research approach

This paper employs an exploratory research approach in order to gain a deeper understanding and insights into the topic of management control and risk management integration within Swedish banks. Furthermore, we strive to gain an understanding about the connection between risk management, management controls, bank strategy and size. The research method is of a qualitative nature with an emphasis on words rather than numbers and with the objective of gaining insight into the relationship between theory and research (Bryman & Bell, 2015).

In order to gain a comprehensive overview of the various bank approaches to our research topic, it was determined that a survey would provide the best insights and volume desired. Surveys come in many different forms with many distribution options such as written, oral, or online surveys. With a limited amount of time and a large target audience with the intent to investigate integration of management control and risk management, an online survey approach was deemed the most fitting due to its many benefits. Online surveys are commonly recognized due to its association with flexibility, speed and timeliness, question diversity, and ease of follow-up. Online surveys also provide an easy way to enter data and analyze it (Evans & Mathur, 2005). With a quite short period of time for undertaking the research, our online survey approach suited those limitations due to its ease of access for respondents and the short time to respond.

3.2 Research Group Selection

We decided to focus on one sector in our study, namely banks. With our research question having a focus on risk management and management control, banks were of interest due to their regulatory pressured nature. These regulations have led to a need for risk management for banks more than other sectors. Thus, they were deemed appropriate and interesting to the topic since the main research purpose involves risk management. The sector chosen facilitates our analysis of how management control integrates with risk management. Swedish banks were chosen due to its ease of access and thus it was a convenience selection (Bryman & Bell, 2015). The chosen research group, banks are divided into LLC banks, savings banks, member banks, and branches of foreign banks in Sweden. The banks differed in size which made it possible to analyze small, medium, and large banks. The list of banks was taken from Finansinspektionen, the financial supervisory authority in Sweden (Finansinspektionen, 2019). Since all banks were of interest to our study, we contacted them through email with a link to our survey in order to ask about their willingness to participate. The survey was sent out to 104 banks. The range of employees within these banks was between 11 and 600. The target group for the email and survey was employees with managerial positions within the bank. This includes positions such as CFOs, office managers, administrative managers, controllers, or any kind of managers with relevant experience in management. The reason why these were targeted is because they have certain knowledge and experience necessary for answering the stated questions in the survey and it increases the validity of their contributions.

3.3 Variable Measurement

The dependent and independent variables of the study will be introduced in this section. The independent variables are used to test the effects of the dependent variables (Bryman & Bell, 2015).

3.3.1 Dependent Variables

Management control system (MCS) and risk management (RM) are the dependent variables of this study. Management control system: In order to conceptualize management control systems, five variables are used (action, result, culture, planning, and reward & compensation) which are taken from Malmi & Brown and Merchant & Van der Stede.

Action, result and culture control are taken from Merchant & Van der Stede. Action control is understood as prevention of undesired behavior and promotion of desired behavior for task accomplishment. Result control can be described as enforcing target achievement through monitoring and rewarding outputs. Culture control can be described as control through establishment of shared values, social norms and beliefs (Merchant & Van der Stede, 2012; Hutzschenreuter, 2009)

Planning and reward & compensation were taken from Malmi & Brown. Planning control can be described as a tool to help organizations set out goals for a specific area and thereby direct employees' efforts and behavior. Reward & compensation can be described as motivating and increasing the performance of individuals and groups through attaching rewards to control effort direction, effort duration, and effort intensity (Malmi & Brown, 2008; Otley & Berry, 1980).

Risk management: In order to conceptualize risk management three types of risk are used (preventable, strategy, and external) which are based on Kaplan & Mike's characterization of risk. Preventable risk is defined as risks that can be controlled and eliminated and some examples are unethical or illegal actions by employees or managers. Strategy risk comes from the company strategy. Examples of strategy risks are credit risks from lending money for banks, or risks arising through R&D activities. These risks are different in its nature from preventable risks since a component of them are desirable. In order for a company to accomplish its strategy and its accompanying returns, the company needs to take on some risk. External risk arises from things happening outside an organization. External risks are outside the control of the organization and include things such as natural, political, or macroeconomic events (Kaplan & Mikes, 2012).

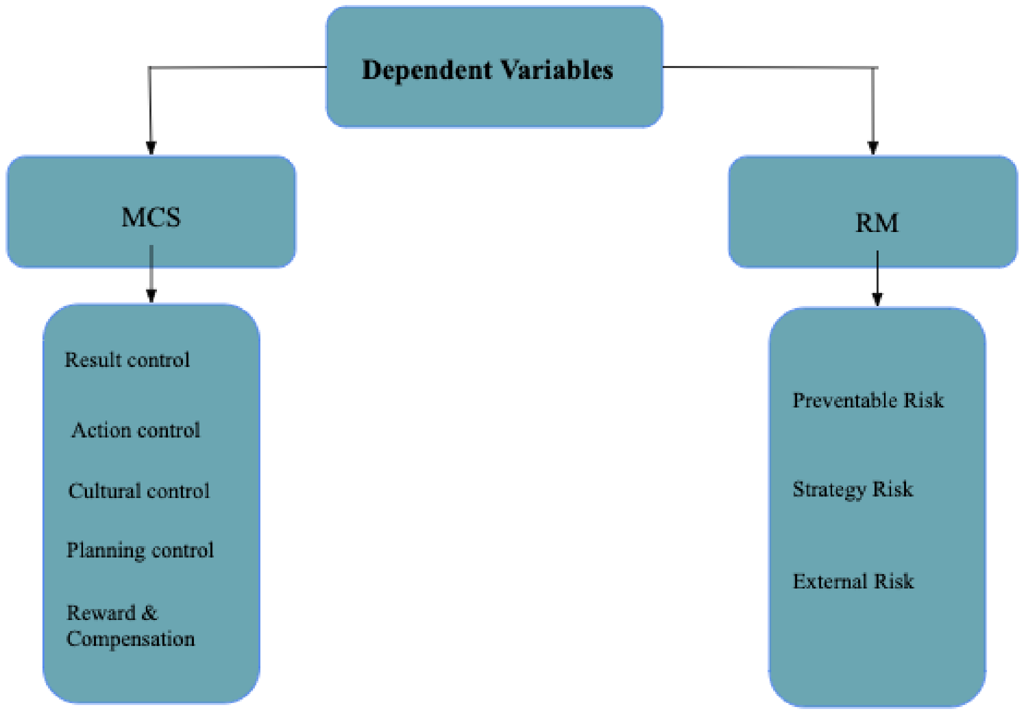

Figure A - Dependent Variables

3.3.2 Independent variables

Size and strategy are the independent variables of this study. Size: In order to conceptualize size it has been divided into three groups based on the number of employees in the bank, small, medium, and large. Small banks are defined as banks that have between 0-49 employees. Medium banks are defined as banks that have between 50-249 employees. Large banks are defined as banks that have 240 and above employees (Chenhall R. , 2003; Child & Mansfield, 1972).

These group categorizations were made to facilitate the analysis of how size can affect the integration of management control and risk management.

Strategy: in order to conceptualize strategy it has also been divided into three sub-groups based on the type of strategy. The three groups are differentiation/innovation, customer focus, and low-cost and are based on Bedford and Malmi's characterization of strategy (Chenhall, 2005; Chenhall & Langfield-Smith, 1998; Ittner, Larcker, & Randall, 2003). Differentiation/innovation strategy which include being early to the market with new products/services, providing an extensive range of products/services, and experimenting with new products/services. Customer focus strategy which includes providing products/services of high quality, meeting delivery agreements, and providing superior customer services. Low-cost strategy which can be characterized as offering low cost products/services and low price.

These three groups were used to facilitate the analysis of the effect strategy has on the level of integration between management control and risk management (Bedford & Malmi, 2015).

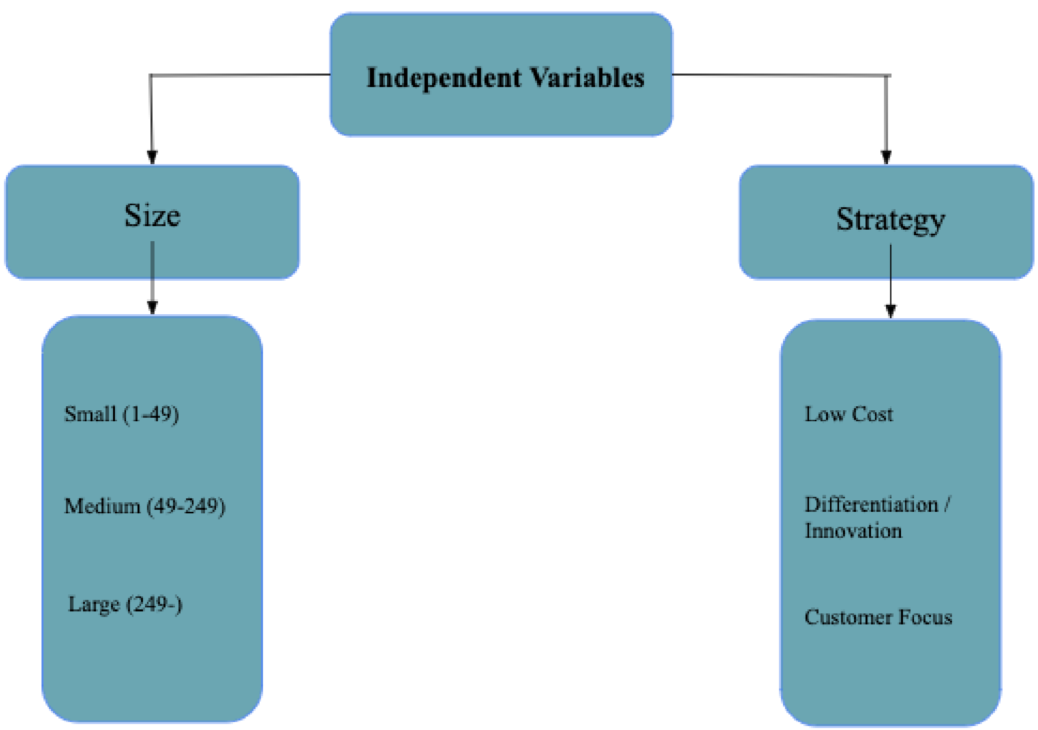

Figure B - Independent Variables

3.4 Survey

The method as mentioned used in the paper is a survey study. The survey study is built upon questions that are based on our own customized framework of the paper which is explained in section 2.5. All banks that the survey is sent out to will receive the same lines of questions. Using the same questions is a preventative measure taken so that the response from the survey can be generalized. Furthermore, the survey is finished with an open question where the research group is given an alternative to add any valuable information they wish to express.

As a way to introduce the survey to the research group five control questions are asked. The first question states *"What is the name of your bank?"*, which is only asked as a control question to be able to facilitate the data collection. The bank names will not be used in the analysis of the paper or published which was stated in the survey description. The second question in the survey is another form of control question stating *"What is the number of employees in your bank?"*. The question is as previously mentioned focusing on bank size and a way to check if the bank is small, medium or large through the number of employees. The third question states *"When did your bank open?"*. The reason behind why this question is asked is to evaluate if there could be a link between how well established the bank is and how the bank operates its management control systems and risk management. The fifth question of the survey asks *"What is your position in the bank?"*. As described before, the study is sent out to employees that have authority and manager positions with knowledge about how the bank operates with regards to risk management and employee aspects. The question is asked to control that the survey is not answered by an employee without the appropriate knowledge and authority and also makes it possible to connect back with the respondent (Appendix A).

The next three questions asked in the survey are based on the bank's focus/strategy of their everyday operations. Bank strategy is not an official part of our framework, however, it is used as a complement to our analysis in order to examine if it affects the risk management and management control which is a part of our main research question. To determine bank strategy, Bedford & Malmi's characteristics of strategy was used to provide examples of the three types of strategy: low cost, innovation/differentiation, and customer focus. The three different strategies were constructed into three individual questions in the survey with a scale measuring the extent that the strategy is applied. The scale is measured from one to seven, where one is not at all and seven is a very high extent (Appendix A).

The remaining questions of the survey are based on the characteristics of the framework constructed in the paper and relate directly to our proposed research question. To facilitate the outline of the survey for data collection purposes and for clarifications for the responding part, the survey is further divided into five sections. The outline of every section is based on one of the five different variables result control, action control, cultural control, planning control and finally, reward & compensation control. Each question asked in the sections is based on the framework and the corresponding type of risk. The respondent is given an interval from one to seven, where one is not at all and seven is a very high extent. The reason behind giving the responder an interval is to measure what extent the banks have integrated risk management and management control. Thus, a one as an answer in these questions means that they are not integrated at all. Similarly, a seven as an answer indicates that they integrate risk management and management control to a very high extent. The interval questions were also asked in order to facilitate the compilation of the data. Some of the questions have a different layout where the respondent can choose or check a box with an already written answer, and the reason for this is that the question is more straightforward. Some of the questions that are asked will provide the respondent with sub-parts to the questions. The reason behind the longer sub-part questions is that one control or risk can be monitored/prevented in different forms and that the question is deemed more complex (Appendix A).

The format in the following five sections of the survey is two to four questions for each control. Each question relates directly to a type of risk from our framework (preventable, strategy, or external) and the question incorporates examples of how to control the mentioned risk along with a chance for the respondent to choose what extent they monitor/prevent/control the risk. This format will be repeated along the different sections with minor modifications/tweaks.

The first section is based on the variable result control. There are three questions related to this control, each question relating to a type of risk. The initial question states: *"To what extent do you* *emphasize controlling theft within your bank regarding the following aspects?"*. This question relates to the preventable risk. Both the questions and the provided examples listed come directly from the framework, column four and five (examples of risk and controls). This question was divided into sub-parts due to many different ways of detecting theft within a bank. The other two questions in this section relate to strategy and external risk. These questions were given one scale from one to seven due to the simplicity of the questions. The second question states: "*To what extent do you emphasize finding/preventing employee mistakes and poor performance?"* and the last question asks: *"To what extent do you emphasize monitoring the economy and its influence on your bank's performance?"*. This concludes the first part of the management controls section in the survey (Appendix A).

The second section is based on the variable action control. The first question in this section follows the same structure as the previous section. The initial question states: *"To what extent do you emphasize controlling that employees work according to their guidelines?"*. The responder is again given three examples of how this type of risk can be controlled. A reason behind asking this question is to gain an understanding of to what extent the bank controls the risk to prevent it from happening in the future. The other two questions relate to strategy and external risk. These questions were given one scale from one to seven due to the simplicity of the questions. The second question states: *"To what extent do you emphasize restrictions within the organization?"* and is based on strategy risk. The third question asks: *"To what extent do you emphasize being prepared for technical issues/system malfunction?"* and is based upon external risk. By asking these questions related to how the banks control/prevent their risks the aim is to better understand and be able to take determined conclusions on the legitimacy of the constructed framework (Appendix A).

The third section is based on the variable culture control. The two first questions in this section relate to preventable risk as described in our framework. This risk was deemed more complex for this control and therefore two questions were dedicated to it. The first question asks: *"To what extent do you emphasize controlling new employees?"*. The responder is given five different options related to this question that the rank from one till seven on how in different ways they have a system in place to control this aspect. The structure after this question is the same as the previous two sections. The second question asks: *"To what extent do you emphasize controlling unethical behavior among your employees?"*. This question is asked to understand to what extent the banks are trying to prevent undesired behavior that could potentially be a risk for the bank. The third question is similar to the previous question but it relates to strategy risk and the responder is given three different examples of how to prevent such a risk. The question asks: *"To what extent do you emphasize establishment of norms and ethics in social gatherings?"*. The reason behind why this last question is constructed with different alternatives is because the strategy risk was only given one question therefore subparts were deemed important to clarify the question. This deviation is made because the cultural control can be viewed in a diversity of ways and to best ensure that the result is accurate, this precaution was deemed necessary (Appendix A).

The fourth section is based on the variable planning control. The first two questions in this section are related to preventable risks. The first question asks: *"How often do you discuss organizational goals and plans to the employees?"*. In this particular question the responder is given already set answers they can choose between. The reason behind this is to both facilitate the data collection summary and to help the responder to be able to approximately give the most accurate answer. This question is followed by a related question that asks *"Who participates in the meetings where organizational goals and plans are discussed?"* where the responder can check one or many boxes with alternatives of different employees that could participate in the meetings. The reasons for asking this follow-up question is to gain a deeper insight into how efficient these meetings are and what audience they target. The reason for why the titles are already set out is to ensure that no important role of an employee would be left out, when responding to the question. The question that follows after these two relates solely to strategy risk and to what extent this risk is managed within the bank. The question asks: *"To what extent do you emphasize following up on deviations from goals/plans?*. Finally, the last question is related to how external risk factors are taken into consideration when evaluating risk assessments of external factors if they affect the bank and it asks: *"To what extent do you emphasize flexibility with existing plans due to external events such as macroeconomic/political/environmental factors?"* (Appendix A).

The final section of the survey is based upon the variable reward and compensation control. The first question is related to preventable risk, which asks: *"To what extent do you emphasize ensuring* *that rewards and compensation for employees are appropriate?"*. The second question is related to strategy risk and states: *"To what extent do you emphasize employees' expectations and dissatisfaction regarding their work performance and compensation?"*. The question is asked to understand if the bank has or does take precautions to prevent this type of risk, that an employee would be disappointed. Lastly the responder is given space to add any additional comments if the survey study missed or neglected anything of importance for the bank (Appendix A).

3.5 Survey Implementation

When implementing the survey, a method called Tailored design was used to increase the response rates and maximize the number of respondents. This method involved sending a pre-notice email which included a message that the person was selected to participate in a survey and what the survey would be about, along with its contribution to our research. Sending a pre-notice email has been shown to improve the response rate about 5 percentage points (Dillman, 2000). Thus it was considered an important step. A few days after the initial email was sent, a follow-up email was sent containing the survey link with a brief message regarding confidentiality and a thank you note. In order to differentiate the second email from the first, it was sent by the other author, thus coming from a different email address. A week after the survey was sent, a follow-up/reminder email was sent to the respondents who had not responded. This email stated that their participation was missing and that the survey was voluntary, but important to our study in an attempt to get more responses.

3.6 Validity and Reliability

In order to provide a thesis of satisfactory quality, meeting the criteria of validity and reliability regarding the research was of great importance. This paper employs a qualitative research approach rather than a quantitative one and with the chosen survey approach application of these criteria are crucial.

The survey approach is aimed at improving the ability to generalize and transfer conclusions made in the research process due to the large sampling abilities. Compared to a single-case study with only one bank, our approach was to involve many banks with differing perspectives. With the survey approach, controlled sampling and an ease to obtain large samples is a key benefit (Evans & Mathur, 2005). This was also a way to improve the external validity of our research. The survey approach enabled us to obtain fixed answers which reduces the risk of vague answers such as in an interview. The respondents of the survey were all on a managerial level within the banks which increased the credibility i.e. internal validity (Bryman & Bell, 2015), due to their level of expertise and knowledge of their bank processes. This also enhanced the validity due to them all being in similar positions as opposed to receiving mixed responses from both managerial and non-managerial employees.

Since the survey was designed based on our self-made model, our understanding of the responses was guaranteed and the existence of respondent validation was ensured. With limited essay questions and more questions with checkbox styles the threat of unclear answers was reduced and clarifications were not needed in any of the survey responses. As a means to validate the responses, some banks had two or more people respond to the survey. Respondent validation is a useful method to ensure both credibility and accuracy of the research findings (Bryman & Bell, 2015). In order to ensure that our research study obtained reliability, being a team of two people writing the thesis served as a facilitator. This enabled us to provide individual perspectives on the data while discussing it. This improved our internal research reliability due to the existence of interobserver consistency which is a technique used to improve the reliability of research (Bryman & Bell, 2015). Furthermore, comparing our findings with existing prior studies in the same area in order to check for alternative explanations in order to reduce potential bias and errors (Yin, 2009).

3.7 Limitations

The qualitative and survey approach was deemed most appropriate and best-accommodating to the research purpose, however, some limitations still existed with the chosen research method. Using a survey approach as a research method can lead to validity issues if the survey is not properly designed. Some commonly mentioned weaknesses related to online surveys are low response rates, unclear answering instructions, perceptions as junk mail, and the impersonal aspect. Our survey suffered from these and specifically low-response rates which made it subject to participation bias (Bryman & Bell, 2015). A larger number of respondents would have enhanced our ability to generalize and draw conclusions. In an attempt to mitigate the perception as junk mail weakness we placed an emphasis on our first email to the respondents describing the survey and the purpose. The instructions were also carefully written in order to reduce any confusion or unclearness. Another potential limitation related to the research method is bias related to the respondent. The person answering the survey most likely does so from their perspective of how their bank operates, which may not be representative of the reality of the bank. However, the fact that anonymity was highlighted reduced the potential of respondents attempting to provide a better picture of the bank than the reality. Finally, the pandemic situation with Covid-19 could have affected the response rate in our survey and the willingness to participate.

4 Empirical Results

In the following chapter the empirical findings from the survey study will be presented. An explanation of the method used to summarize the empirical findings will be described.

4.1 Result integrated theoretical framework - general integration

Table 2 summarizes the result regarding all responses from the survey study. 64 banks participated in the survey giving us 64 responses for each control studied. The numbers in the table are derived from the scale used in the survey of 1-7, where 1 is not at all and 7 is a very high extent. The mean from the result control was derived by adding the three related questions together. This provided us with three numbers that were added and divided by the count, which is known as the mean. One of the questions had sub-parts with multiple alternatives, thus a separate mean had to be calculated for that individual question before adding it to the other answers. As an example, question nine had three parts: inventory controls, budget deviations and cash counts. If a bank answered 5,6, and 7 for the respective parts, the mean would be (5+6+7)/3 or 6. If for questions 10 and 11, the same bank answered 5 and 6, these were added to calculate the total mean by adding 6 (from question 9). This becomes (5+6+6)/3 or 5.7, giving us a mean of 5.7 for the result control. The same method was repeated for the four additional controls. This table also displays the max and min which are the largest and smallest values of the total data. Lastly, the table displays the standard deviation which is a measure of how much variance there is in the sample set of data. Thus, it indicates how much the respondents varied in their answers based on our scale from one to seven for each control. To fully understand how much the different controls vary from their mean, the standard deviation is included to get an accurate picture of the data.

Table 2 - Summary

	Result	Action	Culture	Planning	Reward & Compensation
MEAN	5.5	5.9	5.8	5.6	5.4
MAX	6.7	6.8	6.5	6.5	7.0
MIN	3.7	5.0	4.2	3.8	1.0
STANDARD DEVIATION	0.95	0.66	0.72	0.71	1.38

4.2 Result integrated theoretical framework - strategic perspective

Table 3 summarizes the result regarding the effect of strategy on the level of integration. The numbers in the table are derived from the scale used in the survey of 1-7, where 1 is not at all and 7 is a very high extent. The 64 banks were given three questions related to their main strategy, low cost strategy, differentiation strategy, and customer focus strategy. Based on the answers to these questions, the banks were divided into three groups. Since the low-cost strategy did not apply to any of the bank's chosen strategy as their main strategy, it was not taken into consideration in table 3. Instead, all of the participating banks answered that their main strategy was either differentiation, customer focus, or in some cases, both. Therefore, these strategies are represented in table 3 with their respective means. The same calculations as presented in table 2 were applied in this table as well. The only difference is that the responses were divided into their chosen strategy. 16 banks represent the differentiation strategy, 36 banks represent the customer focus strategy and 12 banks represent the combined strategies. Table 3 presents the mean of each of the five controls for each strategy that the banks have.

Table 3 - Strategy

	Result	Action	Culture	Planning	Reward & Compensation
MEAN Differentiation	6.0	5.9	6.1	5.5	5.4
MEAN Customer focus	5.3	5.9	5.6	5.6	5.4
MEAN Differentiation & Customer focus	5.3	5.8	5.9	5.7	5.3

4.3 Theoretical framework - size perspective

Table 4 summarizes the result regarding the effect of size on the level of integration. The numbers in the table are derived from the scale used in the survey of 1-7, where 1 is not at all and 7 is a very high extent. The same calculations as presented in table 2 and in table 3 were applied in this table as well. The 64 banks were divided into three groups based on the number of employees. The size categorization was based on three groups of sizes, namely small, medium, and large. Small banks have between 1-49 employees, medium banks have 49-249 employees, and large banks have more than 249 employees. After dividing the banks into their respective category, it was determined that 38 banks were small, 20 banks were medium, and 6 banks were large. Table 4 presents the mean of each of the five controls for each size that the banks have.

Table 4 - Size

	Result	Action	Culture	Planning	Reward & Compensation
MEAN Small bank	5.1	5.8	5.5	5.6	5.7
MEAN Medium bank	4,1	5.0	5.6	5.0	4.5
MEAN Large bank	5.8	6.1	6.1	5.6	5.1

5 Analysis

In the following chapter the result from the empirical findings will be analyzed.. The integrated framework will be examined in regards to how highly integrated risk management and management control systems are. An analysis of the impact strategy and size have will also be presented.

5.1 General integration analysis

The results from table 2 is the overall result gathered from all survey responses. It presents the viewpoint from the general response rate analysis of how management control systems and risk management are integrated. The survey is based on the own constructed framework in the paper. The overall purpose with the survey was to see if banks in practice actually do integrate their management control systems with risk management. As mentioned previously risk management and management control systems have been studied extensively as two separate phenomena, there does not exist substantial research in the area of integration between the two. Thus due to the lack of previous research in regards to management control systems and risk management integration, table 2 illustrates the mean, max and min of the level of integration that in practice exists in the participating banks. It is important to keep in mind that the result is based on 64 banks located in Sweden and therefore the result from the survey is limited.

Looking back at table 2 and the mean for the five different controls from the integrated theoretical framework, the controls appear to be rather stable. What this means is that there is no excessive variance between result, action, cultural, planning, and reward & compensation, when analyzing their mean value. As explained by the scale the respondent was able to choose between one (not at all) and seven (high extent). The questions that were asked were based on if the banks in practice indeed combined the two controls. At first glance looking at table 2, the result shows that there is a significant integration between management control systems and risk management.

Beginning with action control, it is a direct control that emphasizes behavioral control through management. The control includes prevention and promotion of certain behaviors. The control as mentioned previously is linked to all three risks: preventable, strategy and external, which can be controlled via restrictions, manuals etc. The mean from action controls illustrates that it is a slightly higher number than the remaining controls. The minimum value (min) from table 2 also displays that action controls had the highest min in comparison to the other controls. A reason behind the slightly higher significance could mean that a more direct type of control is prioritized within the bank sector. This could be related to the fact that the bank sector is a highly regulated industry with strict laws and regulations to follow. Therefore, the magnitude of controlling and preventing undesired behaviour is significantly linked.

The cultural control is showing a slightly lower result than action control, but it is showing a slightly higher result than the remaining controls. This control is related to shared values, norms and beliefs within an organization. An interesting thing about the high result cultural control that can be observed in Table 2 is the high emphasis banks place in having a risk-averse culture which helps reduce these risks. One aspect that could be the reason behind the result is the fact that the majority of the responders worked in smaller banks. Working within a smaller bank could indicate that the work team is tighter due to having fewer colleagues and that building up trust amongst each other is easier because of the size. Another aspect is that within a smaller bank with close working relationships it is easier to spot if a behavior breaches the established standards.

The planning controls had the third highest mean result of all the controls. These controls include setting out goals for the organization and ways to control that the plans are followed according to the standards. If risks are defined and then awareness of them is integrated into the controls, the organization could to some extent prevent them from occurring in future. Reviewing table 2, the max and min of the planning control varies quite a bit. This indicates that the importance of mitigating risks in the future differs depending on the bank. This could be that some banks emphasize risk prevention more, while other banks keep risks and planning separated. The survey results indicate that management controls systems and risk management are integrated to some extent when it comes to planning.

The result controls is also a form of direct control that emphasizes monitoring and rewarding outputs and inputs. Most risks that a bank could have related to the result control can be monitored. Looking at table 2, the mean of the result control illustrates that risks are taken into consideration when controlling the result of the work the employees at the bank perform. One reason why this variable had the second lowest mean of all characteristics could have to do with the fact that the need for monitoring tools differs between the banks. If a bank emphasizes the use of cultural control or action control, then the need for having the result control may be smaller. Some managers might trust their employees more and therefore not feel the need to monitor their employees to the same extent.

Lastly, the reward & compensation control had the lowest mean of all the controls. This control relates to the attempt to motivate employees and controlling their efforts by rewarding their job performance. As a way of showing gratitude for a good work performance a manager could mitigate both preventable and strategic risks. Looking at table 2, this variable has the most significant variance when analyzing the max and min value. The result indicates that this type of controls varies vastly among banks. It is important to keep in mind that rewards & compensation can be interpreted in many ways, depending on the individual bank. Rewards according to one manager could mean one thing while it could have a completely different meaning to another manager. Depending on the financial results among the different banks, some banks may not have the financial resources to be able to reward and compensate their employees.

When looking at the standard deviation from table 2, it can be observed that there is a variance between how the respondents have answered the questions, although the variance is not significant. The highest standard deviation was seen in reward & compensation with the number 1.38. The reason behind that this component had the highest standard deviation could be that one of the respondents answered the lowest number on the scale, therefore, the standard deviation result is slightly higher. The lowest standard deviation was seen with action control, where the respondents did not differ much when answering the related questions. The planning and culture controls had almost identical standard deviations, meaning that the variance from the respondents were almost non-significant. The result control, having a standard deviation of 0.95 indicates that this result had a slightly higher variance than the other three controls.

Overall, the five variables according to the general responses to questions from the survey, show that risk management control systems and risk management are integrated. They are integrated not only theoretically but also in practice. This result is based on a small sample of respondents from banks in Sweden. In the following two sections an analysis of the impact strategy and size have on integration will be analyzed.

5.2 Strategy perspective analysis

The result from the strategic standpoint in relation to the integration between management control and risk management is divided into three sections, each related to the individual strategies. The three strategies were differentiation, customer focus, and the combination of the two. The analysis will look at how strategies could have an impact on the integration between management control systems and risk management.

The first strategy analyzed is differentiation. Having this strategic angle means offering products/services that differentiate one organization from others, or its competitors. Characteristics of this strategy include being first to the market, providing an extensive range of products/services or innovative products/services. Looking back at table 3 and the mean for differentiation strategies for the controls analyzed, result, action, and culture controls seem to appear relatively stable. There is not a significant variance, meaning banks with this strategy place almost equal emphasis on these three controls in relation to their risk management mechanisms. Since this strategy is related to an organization being innovative, it is viable that culture control would have a high significance since emphasizing the culture in an organization could increase the innovative abilities. What speaks against this type of strategy within the organization is that direct controls usually play a smaller part, and as we know action and result controls are direct controls. A reason why these controls are still showing strong numbers could be due to the fact that this is a bank sector which is a highly regulated industry. This could be an explanation as to why these three controls are showing higher numbers than the other two controls. For the remaining two controls, planning and reward & compensation, there is also a relatively equal emphasis placed. Although the numbers are a bit lower than for the other controls, they are almost identical. Reward & compensation is something that could foster innovation within a firm since it motivates employees, thus it is surprising to see that the emphasis is smaller. This could have to do with the majority of the responding banks being smaller without the same amount of resources a large bank has which could be an explanatory factor. The planning control is usually not as vital for an innovative/differentiated firm since they need to be able to alter plans for new ideas and goals thus this result makes sense for the strategy. What it appears like when looking at the table is that banks with differentiation strategies tend to place a larger emphasis on result, action, and culture controls compared to planning and reward & compensation, however the difference is quite small since it involves only decimals.

The second strategy analyzed is a customer focus strategy, which involves providing high-quality products/services, meeting delivery agreements, providing effective customer service and fast deliveries. Looking at table 3, the customer focus strategy is relatively stable for all five controls averaging on the number 5, with differing decimals. The action control has a slightly higher number than the other four, but not significantly higher. What this could be explained as is that the customer focus strategy includes delivering high quality and meeting agreements, therefore the action control is an important control mechanism to have since it involves controlling desired and undesired behaviors of the employees. This could explain why this particular variable has a higher mean than the remaining variables. Culture and planning controls land on the same number. Starting with culture control, having a customer-focused oriented strategy will reflect on the culture the bank has. In order to meet the customer needs, the culture needs to be accommodating of it and the work ethic needs to be in line with the strategy. Planning is another important control for customer service oriented banks since they might want to prevent prior mistakes and plan to ensure satisfactory results for the customer. Result and reward & compensation controls are the two variables with the lowest means. The reward & compensation control can be explained through the resources the bank has, perhaps with this type of strategy the controlling of risk is not emphasized as much as via culture. The result control is not emphasized to the same extent with this strategy since it does not add value to the customer in the same way action controls would. To summarize, banks with a customer focus seem to place a relatively similar emphasis on all five controls in regard to risk management. When breaking the controls down, some differences are observed. The fact that the controls average on 5, means that on a scale with 7 being a very high extent, the banks seem to place a high emphasis on controlling risk through different controls.

The third strategy analyzed is a combination of the two previously mentioned strategies. Out of the 64 banks, 12 banks chose the same emphasis for both strategies. When looking at table 3, it can be observed that these banks placed all controls as a 5, however some deviations occurred with the result and reward & compensation controls with slightly lower decimals. Thus, for the banks with both differentiation and customer focus strategies, action, culture, and planning controls seem to be emphasized more in regards to risk management. Overall, all of the banks with the varying strategies land between 4 and 5 on all controls. The two highest numbers for the controls are action and culture controls. Since this strategy is a combination, it makes sense that these variables are the most emphasized since culture control had the highest number in differentiation strategies and action had the highest number when it comes to customer focus. What we can say about the combined strategy is that culture control is emphasized slightly more than action control which could indicate that culture control is the type of tool that a bank with these two strategies focuses on the most. This could be due to the banks having the same culture which would facilitate not having to control the employees since the culture already provides a strong sense of the strategy the bank is promoting. The planning control had quite a high emphasis deviating from the result of the two strategies separately. This could indicate that when combining the two strategies there is a higher need for planning since it could increase the risk. With two strategies there is a bigger workload since there is dual focus of innovation and customer service, doing this increases the need for planning and preventing risks. Result and reward & compensation have the lowest numbers. The reason for this could be that these banks already have one direct control, action control thus the need for the result control is not as high. The reward & compensation control is in line with the other two controls, and indicates a lower emphasis which could be explained yet again through the resources available within the banks.

When comparing the different strategies against each other, it can be observed that banks with differentiation strategies present a slightly higher overall result on the five controls. The difference is not large, however it can be interpreted that banks with this strategy have integrated risk management and their management control system more than the other strategies. Perhaps the characteristics of the strategy such as being first to the market and providing innovative products/services come with more risk, which could be an explanation as to why their emphasis number is slightly higher. The customer focus and combination strategy present almost identical numbers, with deviations no larger than 0.3.

5.3 Size perspective analysis

The results from the size perspective in relation to the integration between management control and risk management are divided into three sections here as well, each related to the individual sizes. Analyzing table 4 from the perspective of size and its effect on management control systems and risk management integration, some important aspects can be observed. The analysis is divided into the three individual sizes and concludes with a direct comparison between the three.

Starting with small banks, all controls ended up with an average between 5 and 6. Result controls seem to be of least importance when compared to the other four controls since it deviates slightly downwards. A reason for this could be that in a small bank, the employees have a closer relationship thus the need to control each other is not as big as in a larger bank with more employees and more risk. Also, the result control involves controlling theft and in smaller banks it could be more difficult for employees to get away unnoticed. The remaining four controls present higher decimals with action and reward & compensation controls at the top. This could be since one control is a direct control and as we have seen previously it has been the most profound control in the heavily regulated sector of banks. The reason why reward & compensation show a high emphasis could be due to more time being devoted to the employees in s small bank compared to in a bigger bank. This could be due to close relationships that usually exist in smaller work environments. Planning and cultural controls are in between the other three controls. Planning might not be as essential in a small bank since more informal conversation can take place more easily and the need for formal planning and meetings might not be of the same importance. An explanation for the culture control not being the most important could be that in small banks, the environment is more open and welcoming and the close relationship could lead to the culture not having to be regulated to the same extent. Overall, on the scale from 1-7 small banks seem to place a relatively large emphasis consistently among all five controls.

When analyzing the medium banks it can be observed that the highest number is on the culture control out of the five controls. A reason for this could be that by having a strong culture control, the need for more direct types of control are not as essential. Since this type of bank is still not considered large, the culture control can still work as a main control because of the size. In second place, action and planning control have the same number. Yet again, having a strong need for one direct control is still viable for medium banks. For the result and reward & compensation, the number is lower in how risk management and control systems are integrated. Why medium banks integrate these to a lower extent could be since they might keep the two mechanisms separated. There is still a sense of integration based on the result from table 4, but not as high as previous results. All the deviations are also on a decimal level, thus they may seem insignificant but with a scale as small as ours they are significant. When interpreting these results, it can be observed that for medium banks the most emphasis is placed on controlling risks through their culture. Furthermore, most controls land on the number 5, which on a scale of 1-7 is still relatively high for all of them.

The large banks present a quite consistent result among all five controls. For action and culture controls the same number is observed and also the highest, thus the emphasis is deemed to be the same. One explanation for action control being one of the more important controls could be that they are large banks and the need for this control is essential since there are not as many close relationships and with more employees it is more difficult to control them. At the same time, the need for culture control is the same which could indicate that managers try to control their employees by building a common ground when it comes to norms and ethics. By having a strong culture control, the need for direct controls is not as strong and could actually be an economic benefit for a big bank in the sense that they could save in on manuals and programs needed for direct controls. Result and planning controls are slightly lower than the first two, but they are still the highest out of all the sizes. This could be due to that larger banks have more employees and have a larger need to control both the result and to plan in order to prevent risk from happening. It is important to keep in mind that external risks have a larger effect on the large banks due to macro effects. The reward & compensation control is observed to have the lowest number or emphasis out of the five. A reason for this could be that these banks have more employees thus it would be more difficult to reward and compensate all of these appropriately. Also, mitigating the risk of disappointing the employees not receiving rewards or compensation might be a reason to not emphasize this control to the same extent. Overall, the large banks present the highest number and most of the controls end up around a 6, which out of 7 as a maximum is high. This indicates that large banks place a high emphasis on controlling risks consistently through all five controls. Reasons for this result could be that the larger banks have more resources and more risk could be related to that. Having more resources such as employees can also be a reason that there is a larger need to control these employees and that more developed management control systems are in place. Thus, these banks have deemed it important to control risk within their organization and have integrated risk management effectively in their management control system.

5.4 Self-critics

Some limitations that apply to the findings of the thesis involve the number of banks that participated. When analyzing the size and its effect, there were not an equal number of banks for each size which could have affected the responses. This affects the ability to generalize the result and the conclusions drawn. Since the result does not speak for all the banks in Sweden, it is based on a small sample of 64 banks in Sweden and their operations. Similarly, with the strategy aspect, the result was not as expected since none of the banks answered that their strategy was low-cost. Something not taken into consideration when asking about the strategy was that banks might hesitate to admit to having a partial low-cost strategy within the bank. Another factor could be that the respondent might not have proper knowledge of what their bank strategy is which could have affected the result. Therefore, it must be taken into consideration that the bank strategy chosen in the survey study might not be reflective of the reality at the bank.

There are also a number of other controls and management control frameworks that could have been used and other conceptions of risk which could have produced a different result. Furthermore, with the creation of our own integrated theoretical framework it comes with limitations as well.

6 Discussion

In the following chapter finale discussions will be summarized and the own constructed framework will be reflected upon. Lastly, contributions to the research area, concluding remarks and recommendations to future research will be presented.

6.1 Our discussion

The regulatory pressure that has been put on financial institutions in a response to scandals and the financial crisis has led to a need for an increased risk management process in these institutions (Crawford & Nilsson, 2018; Mikes, 2011). As mentioned in the introduction, newer approaches to management control systems facilitation integration and flexibility has led to more opportunities in the field. Adding this to the growing importance of risk management, it brings opportunities on integrating the two (Taipaleenmäki & Ikäheimo, 2013). As can be concluded from this study, risk management and management control seem to be highly integrated in the work environment of Swedish banks. Through the five controls examined in the thesis, banks seem to have integrated ways to manage and prevent different types of risk. The control that has been most efficiently used to manage risk is action control, although the difference is only slightly higher than the other controls. The control that appears to be the least emphasized for controlling risk is the reward & compensation control. Due to scandals and heightened regulations and supervision in the bank sector, it is not surprising that this control is less emphasized. Based on our framework, the three types of risk seem to be integrated into the control systems in place at the banks to both control and prevent risk. Thus, being a sector that is already highly regulated, as predicted this type of industry naturally emphasizes the controlling of risk on a high level.

When it comes to the effect of the independent variables, the first one, strategy shows an interesting result. Overall, all three strategies present a quite similar result when it comes to the level of integration between risk management and management control systems, but the differentiation strategy has a slightly higher result. What is interesting about the result is the different emphasis on the five controls (result, action, culture, planning, and reward & compensation). Banks with the differentiation strategy appear to place a slightly larger emphasis on culture control which could have to with the more innovative nature of the strategy. The customer focus banks tend to focus more on action controls which could be due to emphasis on satisfying customer needs through employee behavior. To summarize, strategy does have an effect on the emphasis of the controls but not to as high of an extent that was expected. The largest difference observed is between differentiation and customer focus which could have to do with the different characteristics of the strategies.

The size variable presents some surprising results. Overall, the different sizes do present a quite different result on how the banks integrate risk management through their controls. The larger banks are more efficiently integrating risk and controls, which could be due to resources and the fact that they have been more publicly scrutinized. Because of this they may have more developed and advanced systems in place than smaller banks. The small banks had a similar result, however the numbers were slightly lower than for the large banks. Reasons for this result could be due to the close relationships that can be formed and the more direct managerial supervision that occur in smaller workplaces. Thus, these banks can efficiently utilize their controls to manage risks. What large and small banks had in common was that action controls were the most emphasized. Some deviating results were observed with the medium banks. These banks had an overall lower result in regards to almost all five controls. The reason behind this is still unclear, but it could be that these banks are constantly growing and therefore risk management and management control systems are not yet combined, but kept separately. In order to be able to draw more detailed conclusions about the deviations, a more comprehensive study and analysis of medium banks and their control systems and risk management would not need to take place.

6.2 Reflections of the integrated framework

The integrated theoretical framework enables us to gain a better understanding of how management control systems can be used to integrate risk management. Furthermore, it enabled us to develop an appropriate method assisting us in answering the research question. With a logical design and layout, the integrated theoretical framework made it possible to link different controls with different types of risk. The complexity of analyzing how banks integrating the three types of risk with each specific control was made possible to verify with the framework. Another positive aspect of the framework was that it provided us with a guide on how to design our survey which was our main research strategy and it then helped us develop our thesis. Looking back at the construction of the framework, perhaps something that would have been done differently would have been to send a survey to see which controls they deemed most fitting for their operations and then using that to construct our framework. This could have provided us with an even more accurate and niche framework for the bank sector.

6.3 Concluding remarks

Relating back to the first purpose of this thesis which was to research how banks integrate risk management into their management control system, banks have integrated risk management into their management control systems quite effectively. What this indicates is that management control systems are used for risk management purposes. As mentioned in the introduction, the traditional use of management control systems has expanded to more flexible uses and this study serves as an example of that. The second purpose of the paper was to investigate the effect size and strategy plays in the level of integration. The result indicate that the varying sizes and strategies did play a part in the degree of integration. The level of integration was not affected by the strategies, however, the emphasis on the different controls did vary. The size aspect did have an effect on the level of integration, not only on the emphasis of the controls but also on the overall integration between management control and risk management. In conclusion, risk management and management control systems are integrated in Swedish banks and the variables size and strategy have an effect on the integration.

6.4 Contributions

Our thesis contributes to the limited previous research in the area of management control system and risk management integration. What previous studies have found is the importance of studying control systems in a holistic perspective and how various controls integrate (Kaplan & Mikes, 2012; Crawford & Nilsson, 2018; Malmi & Brown, 2008). The few existing studies in this topic focus on one bank only, thus with our approach the thesis contributes with a more broad and general result for the banking sector. Furthermore, our research examines the angle of both strategy and size and its effect on the level of integration which is an aspect that has not been researched before. Our contribution was accomplished by creating an integrated theoretical framework which clarifies the connection between risk management and management control. This integrated theoretical framework was an additional contribution especially when combining Malmi & Brown, Merchant & Van der Stede, and Kaplan & Mikes. The empirical evidence that was collected from the survey on how banks integrate risk management and management control was another contributive factor.

Practical contributions: banks/organizations can manage risk through their managment control systems

6.5 Future research

Given the scarce existing literature in our research area, multiple opportunities exist to gain a better understanding in this topic. We believe that the literature on the integration between management control systems and risk management should be further explored. Considering the survey study research design of our thesis, we suggest that future research should be carried out upon more samples of companies in various industries to gain a better insight into what affects how companies design their control systems. An interesting comparison for future research would be comparing regulated sectors to more innovative and flexible sectors to see if this could be a factor that influences the integration. Another approach could be to study the type of banks more carefully, such as how the banks are oriented and look for connections there. Also, other variables such as other strategies or other controls could be interesting to research. Perhaps this could help future research in finding a link between a variable or control that is strongly influencing the integration.

Another interesting way to research this topic would be through a quantitative approach, focusing more on statistics when analyzing the data which could contribute to a more in-depth analysis. Finally, another way to conduct research of this topic could be through interviews which would enable gaining a deeper analysis of the topic.

Reference list

Bedford, D., & Malmi, T. (2015). Configurations of control: An exploratory analysis. *Management Accounting Research, 27*, 2-26.

Bhimani, A. (2009). Risk management, corporate governance and management accounting: Emerging interdependencies. *Management Accounting Research, 20*, pp. 2-5.

Bryman, A., & Bell, E. (2015). *Business research methods* (Vol. 4th). New York: Oxford University Press.

Chenhall, R. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizational and Society, 28*, 127–168.

Chenhall, R. H. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strate- gic outcomes: an exploratory study. *Accounting, Organizations and Society, 30*, 395–422.

Chenhall, R. H., & Langfield-Smith, K. (1998). The relationship between strate- gic priorities, management techniques and management accounting: an empirical investigation using a systems approach. *Accounting, Organizations and Society, 23*, 243-264.

Chenhall, R. H., & Moers, f. (2015). The role of innovation in the evolution of management accounting and its integration into management control. *Organizations and Society., 47*, pp. 1-13.

Child, J., & Mansfield, R. (1972). Technology, Size, and Organization Structure. *6*, 369-393.

Crawford, J., & Nilsson, F. (2018). *Risk Management and Management Control Systems Integration in Banks: The Role of Regulation and Strategy.* Uppsala University, Department of Business Studies, Uppsala.

Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method.* (Vol. 2nd). Willey, New York.

Evans, J. R., & Mathur, A. (2005). The Value of Online Surveys. *Internet Research, 15*, 195-219.

Finansinspektionen. (2019). *Finansinspektionen*. Retrieved from Företagsregistret: https://www.fi.se/sv/vara-register/foretagsregistret/?query=bank#results

Giovannoni, E., Quarchioni, S., & Riccaboni, A. (2016). The role of roles in risk management change: The case of an Italian bank. *European Accounting Review, 25*, pp. 109-129.

Haustein, E., Luther, R., & Schuster, P. (2014). Management control systems in innovation companies: a literature based framework. *Springer*, *24*, pp. 343-382.

Hutzschenreuter, J. (2009). *Management Control in Small and Medium-Sized Enterprises* (Vol. 1). Germany: Springer Verlag.

Ittner, C. D., Larcker, D. F., & Randall, T. (2003). Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society, 28*, 715-741.

Kaplan, R., & Mikes, A. (2012). *Managing Risk: A New Framework.* Harvard Business Review.

Lundqvist, S. (2014). *Abandoning Silos for Integration: Implementing Enterprise Risk Management and Risk Governance.* Lund University School of Economics and Management, Department of Business Administration.

Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management Accounting Research*, *19*, pp. 287-300.

Merchant, K., & Van der Stede, W. (2012). *Management control systems: Performance measurement, evaluation and incentives* (Vol. 3rd). Harlow: Pearson Education.

Mikes, A. (2011). From counting risk to making risk count: Boundary-work in risk management. *Accounting, Organizations and Society, 36*, pp. 226-245.

Otley, D. (2016). The contingency theory of management accounting and control: 1980-2014. *Management Accounting Research, 31*.

Otley, D., & Berry, A. (1980). Control, organization and accounting. *Accounting, Organizations and Society, 5*, 231-244.

Taipaleenmäki, J., & Ikäheimo, S. (2013). On the convergence of management accounting and financial accounting—the role of information technology in accounting change. *International Journal of Accounting Information Systems, 14*, pp. 321-328.

Woods, M. (2009). A contingency theory perspective on the risk management control system within Birmingham City Council. *Management Accounting Research*, *20*, pp. 69-81.

Yin, R. K. (2009). *Case Study Research: Design and Methods* (Vol. 4th). London: SAGE Publications, Inc.

Young, M., & Selto, F. (1991). New Manufacturing Practices and Cost Management: A Review of Literature and Directions for Research. *Journal of Accounting Literature, 10*, 265-298.

Appendix A

Survey questions

Survey questions regarding general information

1. What is the name of your bank?
2. What is the number of employees in your bank?
3. When did your bank open?
4. What is your name?
5. What is your position within the bank?

Survey questions regarding bank strategy

6. Please indicate to what extent you agree with the following statement: Our strategy is to offer low price products/services to customers
7. Please indicate to what extent you agree with the following statement: Our strategy is to offer products/services that differentiate us from competitors (Includes things such as being first to the market with products/services, extensive range of products/services or innovative products/services).
8. Please indicate to what extent you agree with the following statement: Our strategy is to have a niche customer focus (Includes things such as high quality products/services, meeting delivery agreements, providing effective customer service, fast deliveries).

Survey questions regarding result control

9. To what extent do you emphasize controlling theft within your bank regarding the following aspects? (where 1 = not at all, 7 = very high extent) If the option "Other" does not apply, choose 1 in the corresponding row.
10. To what extent do you emphasize finding/preventing employee mistakes and poor performance? Example: report of achievements, any kind of mechanism to detect errors.

11. To what extent do you emphasize monitoring the economy and its influence on your bank's performance? Example: recessions, economic downturns, unsatisfactory target achievement (not selling enough volume).

Survey questions regarding action control

12. To what extent do you emphasize controlling that employees work according to their guidelines? (where 1 = not at all, 7 = very high extent) Please note: if the option "Other" does not apply, choose 1 in the corresponding row.
13. To what extent do you emphasize restrictions within the organization? Example: physical/administrative restrictions (passwords, authority restrictions, approvals).
14. To what extent do you emphasize being prepared for technical issues/system malfunction? Example: manuals/technical support.

Survey questions regarding culture control

15. To what extent do you emphasize controlling new employees? (where 1 = not at all, 7 = very high extent) Please note: if the option "Other" does not apply, choose 1 in the corresponding row.
16. To what extent do you emphasize controlling unethical behavior among your employees? Example: code of conducts.
17. To what extent do you emphasize establishment of norms and ethics in social gatherings? (where 1 = not at all, 7 = very high extent) Please note: if the option "Other" does not apply, choose 1 in the corresponding row.

Survey questions regarding planning control

18. How often do you discuss organizational goals and plans to the employees? Example: regular meetings to discuss plans/goals & progress
19. Who participates in the meetings where organizational goals and plans are discussed? (Check all that apply).
20. To what extent do you emphasize following up on deviations from goals/plans? Example: Back-up plans or follow-ups with employees.

21. To what extent do you emphasize flexibility with existing plans due to external events such as macroeconomic/political/environmental factors? Example: ability to adapt and change.

Survey questions regarding reward & compensation control

22. To what extent do you emphasize ensuring that rewards and compensation for employees are appropriate? For example: avoiding unethical gifts, overly excessive bonuses or payouts.
23. To what extent do you emphasize employees expectations and dissatisfaction regarding their work performance and compensation? Example: dissatisfied employees due to high expectations in regards to bonus payouts or group activities.
24. Additional comments (optional)