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THE EFFECT OF ENTERPRISE RISK MANAGEMENT IMPLEMENTATION ON

DEBT FINANCING ACCESS

Case: Finnish Small and Medium-sized Enterprises

Master's Thesis in
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(1) $r = rh * R$

LIST OF ABBREVIATIONS

ACCA	Association of Chartered Certified Accountants
AICPA	American Institute of Certified Accountants
AS/NZS	Australian Standard / New Zealand Standard
CEO	Chief Executive Officer
CAPM	Capital Asset Pricing Model
CAS	Casual Actuarial Society
COCO	Criteria of Control
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRO	Chief Risk Officer
ERM	Enterprise Risk Management
EU	European Union
FDT	Financial Distress Theory
FFE	Federation of Finnish Enterprises
ICAEW	Institute of Chartered Accountants in England & Wales
IIA	Institute of Internal Auditors
IMA	Institute of Management Accountants
ISO	International Organization for Standardization
KRI	Key Risk Indicator
MCS	Management Control System
MPT	Modern Portfolio Theory
NYSE	The New York Stock Exchange
OECD	The Organization for Economic Co-operation and Development
RDT	Resource Dependency Theory
RIMS	Risk and Insurance Management Society
RMM	Risk Maturity Model
SEC	United States Securities and Exchange Commission
SME	Small and Medium-sized Enterprise
SOX	Sarbanes-Oxley Act of 2002
S&P	Standard & Poor's
TRM	Traditional Risk Management
URL	Uniform Resource Locator

ABSTRACT

Enterprise risk management (ERM) is a definition for the contemporary risk management concept that has emerged after the accounting and corporate scandals of the early 2000s. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) responded to these events and developed an ERM conceptual framework, the COSO ERM, which offers a practical tool to evaluate the holistic risk management systems of SMEs. Contingency theory is the leading theoretical background for this research, as the important preconditions behind the ERM implementation are being examined. The debt financing access of Finnish small and medium-sized enterprises has received national public attention, however remaining a sparsely researched topic. The main purpose of this study is to find relationships between the debt financing access qualities and the degree of ERM implementation.

The research data was gathered using the survey method. Survey questionnaire was sent to 1636 members of Finnish Foundation of Entrepreneurs. 61 firms were accepted to the final sample from the 135 participants. Cluster analysis were conducted to find 'active' and 'passive' firms of risk management activities. First part of the study provides insight into the risk management activities of Finnish SMEs, and how the characteristics of size, sector and ownership are associated with the degree of ERM implementation. Second part of the study examines the relationship between the degree of ERM implementation and its relationship with the debt financing access of the SMEs. The results of the study support the literature based hypotheses that the size and the sector of a firm is associated with the degree of ERM implementation. Sample data does not support the ownership hypotheses. Only the positive attitudes to alternative sources of debt were found to be statistically significant in the relationship between degree of ERM implementation and SME debt financing access.

1. INTRODUCTION

Enterprise risk management (ERM) as a framework for systematic risk management has emerged during the early years of the current millennium to address the notable cases of failed management control systems and to address the requirements of the tightening legislation framework regarding the corporate risk management policies and practices. The Sarbanes-Oxley Act of 2002[1] in the United States has been a landmark act even in the global perspective to govern corporate control systems and particularly corporate risk management systems. ERM evolution has been rapid, and variety of definitions and implementation methods have emerged in the ascent of the concept. Power (2004) asserts that ERM is an umbrella concept, where regulative pressure forces firms to integrate risk management into corporate governance structure leading to the "risk management of everything", which Power (2009) ultimately concluded had resulted into the "risk management of nothing". These contrasting views narrate the picture of an immature concept that began its evolution after the several corporate disasters and a concept that has started to progress in the middle of the worst economic crisis since 1930s.

The American Institute of Certified Public Accountants (AICPA) states that management accounting as practice extends to the areas of strategic management, performance management and risk management where risk management is contributing to frameworks and practices for identifying, measuring, managing and reporting risks to the achievement of the objectives of the organization. To achieve these ideals many organizations, such as government regulators, stock exchanges, consulting firms, rating agencies, and universities have all begun to consider ERM as a method to address the economic complexity of enterprises (Bertinetti, Cavezzali & Gardenal 2013: 2). As a contrast to the Traditional Risk Management (TRM), where individual risk categories are managed separately in risk "silos", ERM enables firms to control a variety of risks in an integrated, enterprise-wide fashion (Hoyt & Liebenberg 2011: 795). Harvard Business review listed ERM as one of the "breakthrough ideas for 2004", and since its inception *rating agencies, professional associations, legislative bodies, regulators, stock exchanges, international standards*

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[1] Also known as the "Public Company Accounting Reform and Investor Protection Act" and "Corporate and Auditing Accountability and Responsibility Act".

organizations and consultants have encouraged corporations to adopt ERM (Arena, Arnaboldi & Azzone 2010).

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) defines the Enterprise risk management as:

> *A process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives* (COSO 2004a: 2).

The Casualty Actuarial Society (CAS) defines the enterprise management as:

> *A discipline by which an organization in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders* (Casual Actuarial Society 2013).

COSO (2004b: 1) emphasizes that the existence of firms and the premises for enterprise risk management is that "every entity exists to provide value for its stakeholders". As the uncertainty is evident, the management of a firm should determine how much uncertainty to accept and how to create and grow the stakeholder value of the firm. Uncertainty means both risk and opportunity that have the potential to destroy or create stakeholder value. According to COSO the ERM is enabling management to effectively manage the corporate uncertainty and the underlying risk and opportunity, "enhancing the capacity to build value". These capabilities inherent in enterprise risk management help management achieve the entity's performance and profitability targets and prevent loss of resources. Enterprise risk management helps ensure effective reporting and compliance with laws and regulations, and helps avoid damage to the entity's reputation and associated consequences. In sum, enterprise risk management helps an entity get to where it wants to go and avoid pitfalls and surprises along the way. (COSO 2004: 1.) Critical requirement of control systems for managing in a business context is the need to cope with uncertainty (Coates, Rickwood & Stacey 1996: 245).

The Chartered Institute of Management Accounting has defined management accounting, among other purposes, as planning and controlling the activities of the Enterprise, disclosure to those external to the entity and safeguarding assets (Coates et al. 1996: 1–2) that describe some of the core functions within systematic enterprise risk management processes. In the case of small and medium-sized enterprises it is notable that management accounting frameworks, practices and implementation models are not universally applicable. This is not a process to which a single framework can be applied; simple ready-made formulae will not provide ready-made solutions. Rather it requires the application of appropriate and relevant systems, processes and techniques, adapted as necessary to the specifics of the i.e. the uniqueness of the circumstances – the organization, its industry, its management, its problems and resources, its needs. (Coates et al. 1996: 2). Management accounting, perhaps all accounting, is aimed at changing behavior. (Coates et al. 1996: 132).

Despite the attention given to risk management in the last seventy years after the Second World War (Dionne 2013), the recent financial crisis has created a need for the risk management issues to be in the public attention. The traditional tools of hedging and insuring have revealed to be inefficient in addressing the increasing economic complexity. That is one of the reasons why academics and authorities have dedicated resources in defining and developing a new framework that is called as the Enterprise Risk Management (ERM) (Bertinetti et al. 2013). As this trend has strengthened globally, there are increasing numbers of organizations that have implemented or are considering to implement ERM programs. Also, various consulting firms have established specialized ERM units and rating agencies have begun to consider ERM in the ratings process (Hoyt, Moore and Liebenberg 2008: 3).

The evolution of the ERM concept has background in the organizational theories and theories with applications in finance and management accounting. Contingency theory as an organizational theory emphasizes on the unique prevailing internal and external conditions where business enterprises operate, and hence, these preconditions affect the optimal way of organizing a holistic management control systems, such as an ERM system (Coates et al. 1996: 21–24). The contingency theory approach in the risk management literature seems to offer a potential explanation for the level of ERM system implementation in practice, thus the research objectives are based on the contingency theory that implies that the degree of ERM implementation varies by organizational characteristics. To create a holistic view on the ERM implementation, the measurement of ERM implementation is not formed by

viewing a single event, but examining the consistent actions of the executive management. The theoretical background in this study is mostly based on the contingency theory, although other influential theories, such as modern portfolio theory and agency theory are presented in more detail to form a holistic theoretical background for the existing ERM frameworks and current practices.

The importance of SMEs to any free-market economy is more than vital, and in this context the issue of entrepreneurship in SMEs is very topical area of scientific research, as well as the qualities of SMEs, which affect the approach to the assessment and management of business risks (Kozubíková, Belás, Bilan & Bartoš 2015: 41-42). For example, in the European Union the SMEs account for two-thirds of all vacancies in the private sector. At the same time, SMEs are confronted with major challenges and are more vulnerable to various risks, while not enjoying the economies of scale to employ the resources – both financial and non-financial – to implement sophisticated management systems, such as systematic risk management (Falkner & Hiebl 2015: 122-123).

1.1. Background, objectives and importance of the study

The purpose of this research is to examine the association between the level ERM implementation within the Finnish small and medium-sized enterprises (SMEs) and the association between the levels of ERM implementation to firms' access to debt capital financing. Implementation of an enterprise risk management system has numerous benefits to firms of all sizes. For example, the ERM literature suggests that ERM adoption should continually develop the understanding of holistic critical risks the organization is facing (Louisot & Ketchum 2014), improves significantly firm's operational performance (Soltanizadeh, Rasid, Golshan & Ismail 2015), leads to an increased credit rating and a reduction of cost of capital (Aabo, Fraser & Simkins 2005: 72) and reduces firm volatility and improves return on capital and shareholder value (Lam 2003: 7). Lam (2003) also implies that strong drivers for the decision of ERM implementation have been the stakeholders of business organizations, which includes the holders of equity and debt capital and credit rating agencies, who increasingly require additional information on risks the companies are facing and the corporate risk management practices. Nocco & Stulz (2006: 8) argue that *ERM creates value through its effects on companies at both a "macro" or company-wide level and*

a "micro" or business-unit level and that *by adopting this perspective, ERM helps the firm maintain access to the capital markets and other resources necessary to implement its strategy and business plan*. Furthermore, besides better access to capital markets, ERM implementation seems to enhance improved risk awareness, which is a precondition for better operational and strategic decision-making, also in the European context of large public corporations (Bertinetti et al 2013: 3) and local, often family-controlled, SMEs (Brustbauer 2016).

The main objectives of the study are to test whether the well-researched preconditions of ERM implementation of size, sector and ownership apply in the context of Finnish SMEs, and to examine the association between the degree of ERM implementation and access to the debt financing of the Finnish SMEs. This study also explores the risk management practices of Finnish SMEs on the strategic and operational level, as well as examines the reporting and compliance standards of risk management of Finnish SMEs. These different levels of ERM philosophy will be measured by utilizing an Internet survey that will be conducted in collaboration with the Federation of Finnish Entrepreneurs ("FFE"). Several theoretical frameworks, standards and regulatory conventions are introduced, although the COSO ERM framework is applied to categorize the survey questionnaire to measure the ERM implementation level of SMEs.

The number of academics in the field of risk management, and therefore the number of high quality research, is obviously very limited in Finland, and especially in the context of SMEs. This survey based research offers insights into the risk management practices, quality of its implementation in the spirit of COSO ERM framework, and their association with the experienced difficulties in debt financing, changes in terms and conditions in the recent two years and attitudes towards alternative sources of debt. These three examined debt financing phenomena are collectively labelled as "debt financing access", i.e. a collective definition, which measures the degree of opportunity to fulfill the current needs of corporate borrowing. This study also contributes to the growing base of ERM research, although this base is very limited in Europe, and especially in Finland.

1.2.   Introduction to research questions

This study concentrates on the examining of the existence of the ERM implementation preconditions that are suggested by the prevailing ERM related literature and examining the influence of the level of ERM implementation on the firms' access to debt finance. The study is conducted in the context of Finnish small and medium-sized enterprises ("SME"). The existence of preconditions of size, sector and ownership is suggested by numerous previous studies (Liebenberg & Hoyt 2003; Golshan & Rasid 2012; Paape & Speklé 2012; Brustbauer 2016). Size of a company enables the resources to implement more systematic management accounting systems. The costs affect the decisions whether the benefits of a control justify the costs and whether one or another form of control should be implemented (Merchant 1998: 212), therefore the costs of implementing ERM systems in relation to company size is one of the main arguments against not implementing or even planning to implement one. Size is typically very significant determinant of ERM implementation, even in the European context (Bertinetti et al. 2013). Sector of the firm is evidently seen as one of the predeterminants of an ERM implementation (Paape & Speklé 2012; Brustbauer 2016). Majority of the previous research finds that heavily regulated financial sector (i.e. banking, insurance, financial services and investment companies), energy sector and "highly competitive" sectors are most frequently implementing the ERM systems as measured by ERM surveys and existence of chief risk officers (CROs) in the business organizations (Colquitt, Hoyt & Lee 1999; Kleffner, Lee & McGannon 2003; Beasley, Clune & Hermanson 2005; Beasley, Pagach & Warr 2008; Pagach & Warr 2011; Ahmad, Ng & McManus 2014). Golshan and Rasid (2012: 278) also contend that telecommunication industry is also more likely to adopt ERM framework. The conclusions can be drawn from the fundamentals of institutional theory that suggests that peer groups tend to imitate others and act according to the rules and regulations of their respective industries.

Also, the ownership of an enterprise matters when measuring the frequency and the degree of ERM implementation. Brustbauer (2016: 81) assert that *family firms appear to have fewer incentives to implement ERM in that they show lower levels of ERM activity*. This observation supports the agency theory, which generally addresses the problems that exist due to deviating interests and risk appetites between the principal and the agent. Therefore, the governance parties must monitor the operational level and thus be independent of management (Cohen, Krishnamoorthy & Wright 2008: 182) for these incentives for ERM implementation to exist. Naturally in the family firms the need to address these problems are lessened due to integrated ownership and operational business management. Hoyt et al.

(2008: 14–15) also maintain that institutional ownership supports the view that pressure from mostly independent institutional owners is an important precondition for ERM adoption and implementation, thus effectively supporting the views of agency theory. There is a clear tendency of higher adaptation of ERM systems within the more institutionalized firms, such as government controlled firms, than in family-controlled firms (Hoyt & Liebenberg 2011; Paape & Speklé 2012; D'Amico, Mafrolla & Matozza 2016).

The particular interest of this study concentrates on the degree of ERM implementation and its effect on firm's debt financing access. The measurement of access to debt financing is divided into three categories that follow the division of earlier survey research by the FFE (Yritysrahoituskysely 2013) that introduces the current difficulties in the debt financing access in the subgroup of Finnish SMEs. According to the FFE survey it seems that the experienced difficulties in the debt financing access have increased in the subgroups of micro-, small- and middle-sized Finnish enterprises. Almost 40 % of the respondents in these groups state that they have had difficulties in their debt financing access during the last 12 months, compared to approximately 17 % of respondents of large enterprises that have experienced the similar difficulties. The lower level of experienced difficulties in debt financing among the larger enterprises is explained by the benefits of size, and thus, better resources to be able to repay the debts and organize the risk management. However, the extensive research literature shows that the SMEs, in the lenders' perspective, are generally seen to possess higher risk proclivity, therefore facing higher levels of difficulties in the credit scoring of the banks and complicating the overall debt financing access of SMEs (see e.g. Bruns & Fletcher 2008: 173–175). The SMEs also suffer from information asymmetries because lenders have less information on their default risk, as the SMEs are rarely stock exchange listed followed by analysts, and have limited resources to release financial statements that reach the level of larger corporations (Gama & Geraldes 2012: 730).

Yritysrahoituskysely (2013) also finds out that the terms and conditions of debt financing have deteriorated in recent years within the SMEs that practically means wider loan margins, additional fixed fees on debt, additional debt covenants, lower valuation of debt collateral, increased demands for additional collateral and unfavorable pricing of the external debt guarantees. The survey questions regarding these issues are consolidated into one measure, later referred as "TECO". The credit rating agencies have increased their activity to study the firms' credit worthiness by examining the holistic risk management processes, often labelled

as ERM, to assess the key metrics of the debt terms and conditions for their clients. In the context of larger enterprises there is positive evidence on lower cost of debt and more favorable terms on future debt market access (see e.g. Aabo et al. 2005: 72–73).

SMEs typically have long-standing relationships with the banks they are accustomed to conduct the lending transactions, thus limiting the need for considering the debt market access factors as the so-called "hausbanks" have traditionally had the resources and willingness to fulfil the debt financing needs of their SME customers (Gama & Geraldes 2012: 730). As Yritysrahoituskysely (2013) shows, there is an increased need for alternative financing sources, especially in the subgroup of middle-sized companies as their demand for both private and public alternative financing sources have increased compared to previous years. This is the natural consequence of the banking regulations tightening that have taken place especially after the financial crises of 2008–2009 (see chapter 2.1.2) leading to more conservative lending to SMEs and other entities that are perceived as riskier borrowers. In this study, the alternative sources of debt mean the credit facilities offered by private investors or investment vehicles, in contrast to the public sources of debt, such as public credit institutions. In this research, the three aforementioned categories of debt financing qualities are collectively described as "debt financing access".

Specifically, this study investigates the following critical research questions:

Research question 1:   Is the degree of ERM implementation dependent on the size of the organization?

Research question 2:   Is the degree of ERM implementation dependent on the industry sector of an organization?

Research question 3:   Is the degree of ERM implementation dependent on the quality of firm ownership?

Research question 4:   Are the experienced difficulties in debt financing dependent on the degree of ERM implementation?

Research question 5:   Are the terms and conditions of debt financing dependent on the degree of ERM implementation?

Research question 6:   Are the attitudes to alternative sources of debt dependent on the degree of ERM implementation?

The degree of ERM implementation is measured by the COSO ERM framework, and more specifically on the activity level of the framework objective achievement. Answering these research questions makes a contribution to understanding the preconditions of risk management in SMEs, their effect on the ERM maturity, and its effect on debt financing access. The research model of the first part of the study is depicted in Figure 1. The three ERM implementation precondition characteristics applied from the research literature are on the left. On the right is the COSO ERM objectives of achievement that are used to measure the degree of ERM implementation. Research questions 1–3 examine the relationships between the ERM preconditions and the degree of ERM implementation.

ERM implementation preconditions   Degree of ERM implementation

Size
Sector
Ownership

COSO ERM objectives
Strategic
Operational
Reporting
Monitoring
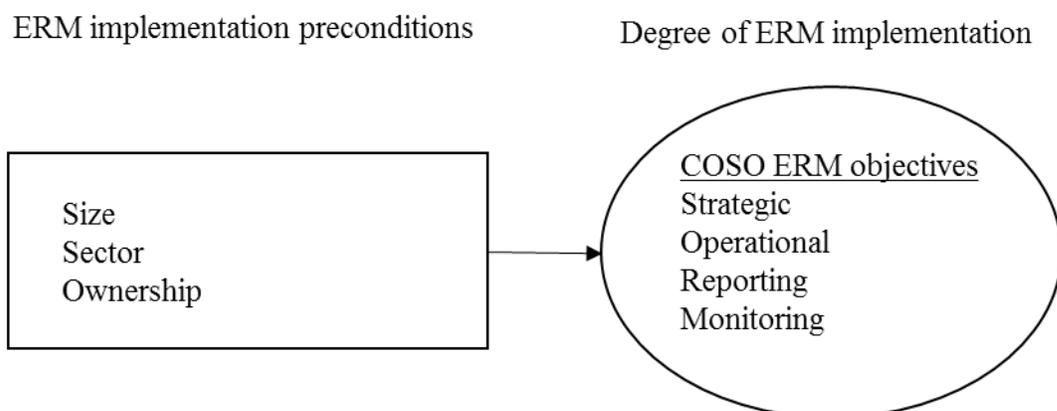
Figure 1. First part of the study.

The second part of this study focuses on the relationships between the measured degree of ERM implementation and debt financing access from the SME perspective. The debt financing access includes three separate categories, based on literature and recent debt financing surveys on Finnish SMEs: experience difficulties in debt financing access, terms and conditions of debt financing and attitudes to alternative sources of debt. As with the

degree of ERM implementation, a quantitative measurement model for categories of debt financing access is developed, tested and implemented in this study. These elements consist of the second part of the study, which is depicted in Figure 2. On the left is the degree of ERM implementation divided into four COSO ERM achievement of objectives. On the right is the debt financing access with three categories. Research questions 4-6 examine the relationships between the degree of ERM implementation and the three categories of debt financing access. The more detailed research hypotheses are created and discussed in chapter 3 to find answers to the research questions.

Degree of ERM implementation   Debt financing access

COSO ERM objectives
Strategic
Operational
Reporting
Monitoring

Difficulties in debt financing access

Terms and conditions

Attitudes to alternative sources of debt
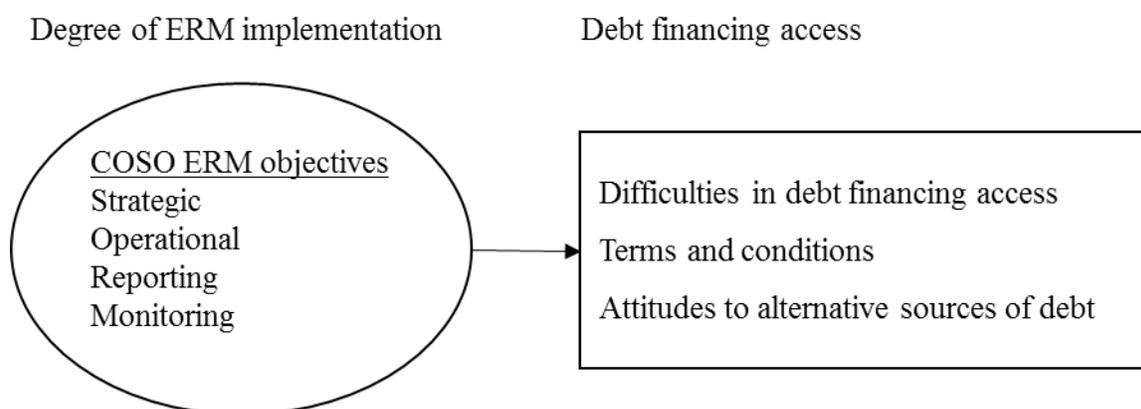
Figure 2. Second part of the study.

1.3. Essential limitations of research

This study has limitations and challenges mostly in the contextual framework of this research. In general, there are limitations and obstacles in the research of the degree of ERM implementation and access to debt financing, especially in the context of SMEs. First of all, many firms have limited resources and developed control mechanisms to implement the risk-management, which is particularly notable for SMEs. While larger firms, usually publicly listed, tend to manage risks in an integrated way, for example, through the expertise of boards of directors, within SMEs these responsibilities are managed by the firm owner who is possibly receiving support from a small management team (Brustbauer 2016: 70). ERM as a definition needs resources to manage processes, enhance reporting, create systems for

monitoring and compile assessments and evaluations. SMEs rarely implement a heavy, systematic and comprehensive ERM system due to lower management resources and experienced cost in relation to the experienced benefits of an ERM implementation. The imminent obstacle is to measure the level of ERM implementation, while the systems may be very immature, or even non-existent. Sometimes the implementation is just a matter of an entrepreneur's perception of risks and the entrepreneur's own ability to manage them. These qualities are typically contingent upon the entrepreneur's personal and firm-related resources (Nocco & Stulz, 2006; Gao, Sung & Zhang: 2011).

The second limitation is the generalizability of research results across the total population of Finnish SMEs, as the survey studies do not always reach the critical volumes that are needed for several statistical methods and their reliability. Also, there are significant differences how SMEs see the conceptual meaning of risk management, and the research sample may reflect these differences rather than the generalized behavior of the population. The problem with the generalization of the results, is dealt with the overall research methods that fit for smaller samples. Another method to measure more accurately the degree of ERM implementation is the selection of survey questions to express the more SME-related issues in risk management that are being tested by the previous research literature. In general, can be said that the ERM implementation in SMEs is a collection of current risk management practices actively employed by the surveyed companies.

1.4.   ERM – definitions and SME context

In the research literature, ERM is synonymous with Integrated Risk Management, Holistic Risk Management, Enterprise-Wide Risk Management and Strategic Risk Management (Liebenberg & Hoyt 2003; Kleffner et al. 2003; Hoyt & Liebenberg 2006; Bertinetti et al. 2013). For the reason of being consistent, the acronym "ERM" is being used throughout this study. In general, ERM is usually defined as *means to integrate or aggregate all types of risks, using integrated tools and techniques to mitigate the risks and to communicate across business lines or levels* (Bertinetti et al. 2013: 5). Integrating is by its nature strategic rather than tactical, and therefore forces the top-down holistic view, instead of managing the risks in "silos". Meulbroek (2002) integration refers separately or to the combination of modifying

the firm's operations, adjusting its capital structure and employing targeted financial instruments.

Interest in enterprise risk management (ERM) has continued to grow after the financial crisis of 2008–2009. Hoyt and Liebenberg (2011) remark that the popularity of ERM is increasing in numbers as organizations have implemented or are considering ERM programs. The other implications of the popularity are that consulting firms have separated specialized ERM consultancy units to serve their corporate customers. Also, rating agencies consider the ERM in their rating processes and as early as in 2005 Standard & Poor's stated that *they expect that deterioration or improvement in a company's ERM quality would potentially drive rating and outlook changes before the consequences are apparent in published financial results*. The most important thing for credit rating agencies regarding the ERM is what effect the good or bad risk management have on a firm's credit rating generation (Lindorff 2009).

Due to increasing popularity of the ERM concept the existing range of definitions and key terms have broadened in the recent years. As described earlier, the ERM is also being described as integrated risk management (IRM), holistic risk management, enterprise-wide risk management (such as Simkins & Ramirez 2008) or strategic risk management (Hoyt & Liebenberg 2011: 795). Also, earlier researchers frequently refer to the "new paradigm of risk management" to separate the concept from the "old paradigm" (Simkins & Ramirez 2008), or to "total risk management" to explicate the latest frameworks of the research field (Mohammed & Knapkova 2016). For the sake of consistency, the acronym ERM will be used throughout this study.

Gao et al. (2011: 677) suggests that risk management is an integral part of the long-term value creation in SMEs. Still, the dimensions of risk remain under-researched, although risk is a very essential aspect for the management of SMEs. The broadness of the entrepreneurship field is another challenge faced by SMEs and typically the SMEs are not as coherent as the larger, usually publicly listed enterprises. Therefore, ERM is considered being a holistic tool for larger publicly listed enterprises, because most of the smaller firms have limited resources and mechanisms to support the risk management activities, which is particularly notable for the SMEs (Brustbauer 2016: 70). SMEs together with micro enterprises form the clear majority of the Finnish business base. In the year 2015, there were 340 870 micro enterprises and 18 609 SMEs, which are 99.8 % of all Finnish enterprises (Statistics Finland 2015). As

can be seen, the volume of SMEs and large corporations in the Finnish economy is quite low at 5.3 %. Generally, the SMEs have fundamentally important roles in most developed economies, and provide approximately two-thirds of private sector employment (Gama & Geraldes 2012: 727), are an important source for innovations and entrepreneurship and respond quickly to changing economic conditions (Gama & Geraldes 2012: 728).

There are tens of different ERM definitions and descriptions formulated by academic literature, standard setting organizations (such as ISO 31000), industry publications and associations, consulting firms, and rating agencies. Only few of them are especially useful to describe the potential ERM implementation target for the SMEs, as these firms typically concentrate on sparse set of businesses and maintain fewer levels of internal control, which is even more typically concentrated in the hands of few, most commonly the family owner-managers of the business. Also, many of the definitions and descriptions presume that the implementing organizations has wide set of analytical, processual and managerial resources to maintain a risk management system to satisfy all the information needs of various stakeholders and their representatives. Besides the ERM definition by COSO (2004a: 2), the following ERM definitions can be considered valuable to explain the nature of the concept in the context of SMEs:

AS/NZS 4360 Risk Management Standard (1995):

> *"Risk management is the culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects."*

Miccolis (2000):

> *"ERM is a rigorous approach to assessing and addressing the risks from all sources that threaten the achievement of financial results or present opportunities that can be exploited to attain competitive advantage."*

Sobel & Reding (2004):

> *"ERM is a structured and disciplined approach to help management understand and manage uncertainties and encompasses all business risks using an integrated and holistic approach."*

ISO 31000 (2010):

> *"Risk management is coordinated activities to direct and control an organization with regard to risk"*

2.   THEORETICAL BACKGROUND

Enterprise risk management can be defined in various ways, and naturally research organizations studying the ERM have their own emphasis on different aspects of the concept. Generally, the definitions, frameworks and objectives are similar the main differences arising from different backgrounds and interest of these organizations. These definitions will be elaborated in detail in the following chapters that present the most important holistic frameworks in the field of enterprise risk management. Before these practical frameworks and management tools are discussed, the most important theoretical frameworks behind the modern applications are presented and relationships to the frameworks, especially the COSO ERM framework, are induced. Contingency theory, as the leading theory behind the hypotheses of this study, is presented in more detail. This chapter also discusses the regulatory background behind the evolution of ERM frameworks, which are seen as the driving force behind the explosion of ERM literature.

Enterprise risk management is being referred as a new risk management paradigm (see Ramirez & Simkins 2008: 581). The traditional way of dividing the issues of risk management, for example into the management of insurance, foreign exchange, operations, credit and commodities in generally called as risk management in "silos", which many organizations continue to address. These "silos" are managed with narrowly focused and fragmented activities. By adopting the ERM, a company will manage all risk areas as parts of a strategic, integrated, and enterprise-wide system. The system is typically coordinated by senior-level oversight to encourage employees at all levels of organization to view risk management as integral part of their jobs (Fraser & Simkins 2010: 3). These issues are closely related to the agency theory extends the understanding of aligned interests for ERM implementation and institutional theory, which typically leads to similarity of risk oversight systems.

Ballantyne (2013: 175) asserts that ERM is a relatively new paradigm that has only recently gained more wide-spread interest and that the recent milestone events that have occurred during the last decade in the United States have led to increasing rate of ERM adoption, such as:

- The publications of the COSO ERM framework and the Australia and New Zealand Standard for Risk Management Framework in 2004.
- Global financial crisis of 2008–2009.
- New Securities and Exchange Commission (SEC) rules adopted in 2010 requiring additional disclosure in proxy and information statements about the board's role in the company's risk management process.

During its infancy, some common ground on the core elements of ERM has been established amongst the concept discipline. Bromiley, McShane, Nair & Rustambekov (2015: 268) find three common elements of ERM systems in their wide ERM literature review. The first common nominator is that ERM is based on managing the risk portfolio of a corporation holistically, which is more efficient than managing the risks of each of the individual subsidiaries, i.e. parts of a corporation or different activities. So, in the spirit of Markowitz (1952) Modern Portfolio Theory, the corporation that tries to mitigate the risk of the individual components is adding costs and doing unnecessary work, if what the corporations cares about is the risk of the total business portfolio. Second common feature of ERM is the strategic view on risk management instead of focus on traditional individual risk areas. Bromiley et al. (2012: 268) exemplify some strategic risks such as product obsolescence or competitor actions, thus requiring risk management related decision-making within every substantive (strategic) decision area. Thirdly Bromiley et al. (2015) mention the competitive advantage created by the capability of managing a particular risk. Therefore, instead of just looking at the risks as problems to mitigate, corporates should try to achieve strategic competitive edge from their ERM systems in their respective industries. Bromiley et al (2015: 268) state that *the emerging consensus on core elements of ERM provides an opportunity for scholars to engage in more critical research on ERM adoption and effectiveness*, thus creating more common theoretical ground on empirical research.

2.1. Historical background of the enterprise risk management

The fascination of the "gap between expectation and outcome, intention and event instead of the belief in the long-standing system of divine intervention" can be observed already from the writings of Thucydides in Greece in the early 400s BC, but still only the past 100 years have been the era of evolution of systematic risk management and risk management literature

(Fraser & Simkins 2010: 20–21). Regarding the historical evolution of the relationship between risk concepts, risk responses and corporate accountability Spira & Page (2003: 644–645) explain that these from the pre-modern era of "fate, superstition and sin" to the Risk Society, a concept created by Ulrich Beck, that defines risk as manageable with systematic extended controls and regulations based on expert advice that need responsive systems. The post-modern "Risk Society" is preceded by the conventional "technico-scientific" conceptualization of risk management that is essentially reactive, directive and procedurally based, and is evolving towards an approach where risk perception is an active process where organizations actively select the risks for attention. This phenomenon is comparable to the paradigm change from traditional, silo-based, risk management towards enterprise-wide risk management approach. The historical development can be seen in Table 1 as presented by Spira & Page (2003: 645).

Table 1. The historical development of relationships between risk concepts, responses and accountability.

	Conceptualization of risk	*Response to risk*	*Accountability for risk*
Pre-modern	Fate, superstition, sin	Acceptance, blame	Expiation, punishment, vengeance, retribution
Modern	Calculable, quantifiable	Avoidance, protection	Compensation, e.g. Financial
"Risk Society"	Manageable	Control and regulation via systems, based on expert advice. Systems for response and blame avoidance.	System amendment, extended control

Enterprise risk management, as many of the systematic management control systems, has been evolved within the American management accountant communities, organizations and researchers. The need for more standardized internal control emerged during the late 1970s and early 1980s, a period when there were many major organizational failures in the United States due to conditions including very high inflation, the resultant high interest rates, and notable accounting and financial reporting scandals (Moeller 2007: 2). These events also led to higher regulatory activity and several federal commissions were formed to investigate these issues.

Enterprise-wide risk management, or ERM, first emerged as a recognized innovative approach to risk management in the 1990s (Ramirez & Simkins 2008: 580). One of the most notable organizations behind the idea of enterprise risk management has been the internal control standards organization that goes by its acronym of COSO – The Committee of Sponsoring Organizations of the Treadway Commission, named after the Securities and Exchange Commission (SEC) Commissioner James C. Treadway (Moeller 2007: 2–3). The sponsoring of the commission was actualized by five professional non-profit financial organizations: the American Institute of Certified Public Accountants (AICPA), the Institute of Internal Auditors (IIA), the Financial Executives Institute (FEI), the American Accounting Association (AAA), and the Institute of Management Accountants (IMA) (Moeller 2007: 3; McNally 2013: 2).

The original focus of COSO was not on risk management issues, instead, the focus was on the internal control problems that were evident reasons behind the financial reporting failures. The final report on internal controls was released in 1992 with the official title *Internal Control – Integrated Framework*. The work has ever since been of the mainstays of the internal control frameworks as portrayed in the chapter 2.1.1. For virtually all persons involved in modern business today, an understanding of that COSO definition of internal control is essential (Moeller 2007: 3–4). The release of the COSO internal control framework caused other professionals to suggest other areas where consistent definitions were lacking and one of them was risk management. This was before the era of Sarbanes-Oxley legislation and rules, where public accountant was increasingly taking responsibilities internal audit functions through outsourcing, and even some called themselves risk management professionals. In 2001 COSO contracted the public accounting firm PricewaterhouseCoopers

(PwC) to develop a common consistent definition for risk management resulting to the COSO ERM. (Moeller 2007: 18.)

The evolution of ERM into the main stream practice took further steps in the aftermath of financial crisis of 2008–09. The U.S. Shareholder Bill of Rights in May 2009 stated that *public companies must create stand-alone risk committees comprised entirely of independent directors who are responsible for the establishment and evaluation of risk management practices*. In February 2010, the Securities and Exchange Commission (SEC) introduced new rules for the improved risk-related disclosure in the proxy and annual statements, particularly in the corporate governance areas of risk management and in the function of board of directors. (Bertinetti et al. 2013: 2–3.)

2.1.1. Internal control and risk management systems

Modern ERM frameworks are based on various internal control systems and principles. For instance, the COSO ERM framework is built on the principles, disciplines and standards of *COSO Internal Control – Integrated Framework* (see forewords COSO 2004b). Power (2004: 20) argues that internal control has been elevated from its "lowly and private organizational position" to evolve as the cornerstone of the ERM thinking, as well as for risk-based regulation and governance. Spira & Page (2003) explicate "how internal control became risk management" by discussing the evolution of internal control and risk management as intertwined concepts and how these concepts have developed together in the "regulatory space". Spira & Page also maintain that many organizations are willing to comply with numerous regulatory requirements cost effectively by combining areas of risk assessment and risk management, and by decreasing the dispersion of risk management related units. This tendency to concentrate, or integrate, the risk management has led to redefinition of internal control as risk management, especially in the profession of corporate internal auditors. Spira and Page (2003: 654–655) also assert that the roles of internal auditors as "organizational policemen and watchdogs" of internal control have evolved into the roles of holistic risk management specialists, which demonstrates alignment of risk management, internal audit and control practice as well as integration of risk management systems. This is especially true in the context of SMEs that have limited financial or human resources for management control systems implementation and operation.

In contrast to the risk management regulation, the Internal Control of public corporations is widely regulated, especially in the Anglo-Saxon corporate world. Arena et al. (2010: 661) describe that The United Kingdom has provided an example of how regulatory bodies have decided to counteract against the perception of loose control frameworks by issuing new codes of practice and regulations such as the Cadbury Code (in 1992), the Hampel Report (Committee on Corporate Governance, in 1998) and the Turnbull Guidance (or Report) that was published by The Institute of Chartered Accountants in England & Wales (ICAEW, also see the Revised Guidance by the Financial Reporting Council 2005). Internal control systems were linked to the general risk management by the new regulations forcing companies to embrace risk management in the enterprise-wide manner in their internal control activities (Arena et al. 2010: 661). The push for a more holistic approach of internal control and risk management was further strengthened after the wave of financial scandals in United States and Europe beginning in the year 2000. These scandals led to enormous losses by shareholders and stakeholders, such as the "Enron collapse" in 2001. As discussed in chapter 2.1.2, these failures prompted the enactment of the Sarbanes-Oxley Act (2002) in the United States. Power (2004: 26–27) argues that the regulatory-driven internal control and therefore also the risk management systems have gone too far, which in practice only serves "to exacerbate a process-obsessed risk management of everything".

The impacts of the new regulatory actions extended well beyond the introducing nations in which they were issued, which reinforced the corporate governance reforms around the world. These reform processes framed risk management as a corporate governance requirement, which highlighted the relationship with the internal control activities (see Spira & Page 2003). However, it is important to make a distinction between the internal control and (enterprise-wide) risk management systems despite the similarities and gradual integration. For example, the Finnish Ministry of Finance defines the internal control as *a framework for processes that controls the methods, organizational solutions and procedures to gain reasonable assurance on achieving the objectives of public entities* (Valtiovarainministeriö 2015: 8), whereas risk management is defined, in addition to the processual aspect, *to identify, assess and manage adverse events, their probabilities, and loosing new opportunities that threaten the achievement of objectives of governmental entities* (Valtiovarainministeriö 2015: 11).

2.1.2. Sarbanes-Oxley Act of 2002

The Sarbanes-Oxley Act of 2002 (abbreviated as "SOX") that expanded significantly the regulatory requirements for all publicly listed companies, their boards, top managements and public accounting companies in the United States. The SOX is considered a regulatory reaction to the accounting scandals and outright frauds within a short period of time in early 2000s (e.g. Enron, Tyco International and WorldCom). SOX has especially been known for the increased responsibilities of corporate top management, such as individual certification of the accuracy of financial information, and for the more severe penalties for fraudulent financial activity (see e.g. Klamm & Watson 2009: 1–2).

The increased regulatory activity, SOX as a primary example but also several of the industry-specific regulations with a global reach, has increased the need for companies to manage risk effectively (see Klamm & Watson 2009; McNally 2013). The other notable industry-specific regulation frameworks are the Third Basel Accord ("Basel III") on capital adequacy and stress testing of the banking industry and Solvency II Directive of 2009 ("Solvency II") that harmonizes the insurance industry regulation in the European Union (EU). These industry-specific regulatory frameworks are most referred examples of the heightened requirements of compliance that drives companies on certain sectors, such as banking, financial services and insurance, to adopt and implement ERM frameworks more frequently than other industries. This implication is further discussed in chapter 3.4.

Fraser & Simkins (2007: 81) maintain that numerous research articles have identified Section 404 of the Sarbanes-Oxley Act as a most influential motive for business enterprises to implement ERM. The implementation approach is however fundamentally different. ERM is mostly a forward-looking concept that is concerned with future risks to corporate profitability, strategy and stakeholder value. SOX on the other hand is backward looking and focused on compliance perspective with financial reporting requirements. Fraser and Simkins (2007: 81) argue that *because of these fundamental differences, attempts to link the two processes appear to be misguided and destined to fail*. However, although the theoretical discussion is that companies are usually using an entirely different process for ERM and SOX compliance, they are able to integrate them only after a few years in the progress (Giniat & Saporito 2007).

Shenkir & Walker (2014: 25 have notified that especially US based companies have suffered from the significant cost load to comply with the Sarbanes-Oxley legislation, especially the Section 404. The actions to respond to the increasing demands for compliance have not been cost effective from the shareholders' perspective, leading to some smaller publicly traded companies to delist or threatening to delist to avoid the increasing demands for compliance. In this context Shenkir & Walker (2014: 25) propose that ERM to be considered more actively as part of the solution for a risk-based compliance solution, whether it be the COSO ERM framework, IMA's guidance approach, or an alternative approach. As the integration is a key element of an ERM system, the resources used to implement SOX requirements could be allocated for ERM implementation, which is more integrated and holistic than what is required by SOX. Shenkir & Walker also argue that most financial reporting failures are most failures of the business processes, so ERM implementation should add shareholder value. The other important value of the ERM implementation in addition to the SOX requirements is that it usually enables better communication with stakeholders (such as banks and other lenders) and possibly leads to fewer business failures. This association is discussed with more depth in chapter 3.2.

SOX is one of the main topics of compliance in the North American publicly listed companies, but there are SMEs and not-for-profit organizations that comply voluntarily with the SOX due to reputational reasons, but also due to corporate governance and risk management issues raised by the credit rating agencies. Relevant to this study, the ERM implementation and its compliance objectives have increased in importance for credit rating agencies, as corporate governance effectiveness has received heightened focus from corporate boards, audit committees and senior operative management (Giniat & Saporito 2007: 69). The major credit rating agencies in the United States have issued reports that discuss the corporate oversight in the context of SOX, but lately specifically with an approach to managing risks across the enterprise, in other words in a ERM system. The credit agencies mainly argue that the more effective management of risk in an enterprise-wide fashion will evolve as an essential piece of corporate governance and would affect favorably on companies with better corporate governance over total risks of an enterprise (Giniat & Saporito 2007: 70).

2.1.3. Other regulatory background for enterprise risk management

Besides SOX there has been several "landmark" transitions in regulation to address the severe consequences of insufficient corporate internal control and risk management, a phenomenon that started to raise concerns in the mid-1980s. While there are many theory-based arguments for ERM, the main drivers for the implementation of ERM systems have been notable reports on corporate governance and studies that according to Aabo et al. (2005: 62) are such as:

- Joint Australian/New Zealand Standard for Risk Management (described later in chapter 2.4.1.).
- The Group of Thirty Report in the United States (following derivatives disasters in the early 1990s).
- The Criteria of Control (CoCo) model developed by the Canadian Institute of Chartered Accountants.
- The Toronto Stock Exchange Dey Report in Canada (following major bankruptcies).
- The Cadbury Report in the United Kingdom (following major corporate governance failures).

Although these reports and frameworks do not regulate the implementation methods of ERM, they create additional motivation for systematic risk management implementation (Liebenberg & Hoyt 2003: 40–41) as suggested by the institutional theory.

The group of the 10 most industrialized countries (G10) decided to sign an accord to regulate banks, and this accord was the basis for the international bank regulation, usually referred as *Basel Accord*. The current *Basel III accord* came into force in 2010, and it has added new rules on capital adequacy to protect banks and improve control of liquidity. The accord requires even more risk management and increases the bank supervision (Dionne 2013: 159). On the other hand, Solvency II Directive, often called "Basel for insurers", is a Directive in EU law that codifies and harmonizes the EU insurance regulation, primarily to reduce the risk of insolvency. Solvency II is another regulatory framework that also regulates the risk management processes and principles of the insurance sector, and it is being justified by the prevention of extreme systemic risk of a financial institution that could have effects on the financial system and even the economy as a whole (Dionne 2013: 155–156).

Large exchanges, such as New York Stock Exchange (NYSE), Euronext and NASDAQ, maintain extensive sets of rules to regulate the listed companies, to prevent manipulative

practices and to promote fair principles of trade (Merchant & Van der Stede 2012: 555). The major legal developments in the field of stock exchange regulation have been especially the NYSE Listing Standards and the interpretation of Delaware case law on fiduciary duties that, among others, have provided an additional force for ERM (Ramirez & Simkins 2008: 583). The Turnbull Guidance in 1999, or formally *Guidance for Directors on the Combined Code*, was a report drawn up with the London Stock Exchange for listed companies. The report informed directors with regard to sufficient internal control within the companies, or having required audits and checks to ensure the quality of financial reporting and catch any fraud before it becomes a problem (Financial Reporting Council 2015).

2.1.4. Traditional risk management vis-à-vis holistic ERM

Several textbooks and periodicals have introduced different variations of enterprise risk management, labelled as *business risk management, strategic risk management, integrated risk management, holistic risk management or enterprise-wide risk management*. Daud, Hussin & Yazid (2010: 56– 57) assert that these concepts are almost synonymous with ERM, although differing slightly on their focus. They all emphasize the collective view of risk management, as ERM is mostly characterized as a holistic and integrated approach to risk management, as opposed to traditional "silo-based" risk management (Gordon, Loeb & Tseng 2009). Simkins and Ramirez (2008: 581) illustrate the differences between the old paradigm and the new paradigm as outlined in Table 2:

Table 2. Old and New Paradigms of Risk Management

Old Paradigm	New Paradigm
Fragmented	**Integrated and Enterprise-Wide**
Departments manage risks independently (silos)	Coordinated with senior-level oversight, risk management culture
Ad hoc	**Continuous**
Risk management done when thought appropriate	Ongoing process

Narrowly focused	Broadly focused
Addresses primarily insurable risk and financial risks	Addresses all business risks and opportunities

Alviniussen and Jankensgård (2009: 180) state that embracing ERM means leaving behind the 'silo' thinking related risk management, where each category of risk is managed separately, regularly inside the business department that is responsible for that part of the business operations. Nocco & Stulz (2006: 8) also describe this distinction and argue that a corporation can manage risks in one of two fundamentally differing ways, where the latter approach is often called enterprise risk management:

(1) One risk at a time, on a largely compartmentalized and decentralized basis; or
(2) All risks viewed together within a coordinated and strategic framework.

2.2. Important theories, concepts and definitions of enterprise risk management

This chapter is focused on providing a wide understanding of theoretical foundations, concepts, frameworks and definitions behind the current mainstream of ERM frameworks, such as the COSO ERM framework. Corporate governance is extremely broad area of academic research, but the issues of corporate governance in relation to the ERM and SMEs is being discussed. Then, having its intellectual roots in classical Harry Markowitz's Modern Portfolio Theory (Alviniussen & Jankensgård, 2009: 178) together with the Capital Asset Pricing Model (CAPM) and Financial Distress Theory (FDT), the ERM has several foundational theories from which the ERM frameworks have evolved. Understanding these underlying theories is essential to understand the current state of research as well as practices of the organizations that apply the ERM implementation.

Contingency theory in chapter 2.2.1 explains the theoretical background behind relationship of the SME contingency characteristics and the degree of ERM implementation, where the certain preconditions tend to enhance the probability and level of practiced implementation

methods of an ERM system. Contingency theory states that there is no best way to organize any management control system within a firm, it also implies that certain outcomes are contingent on the means and methods a management control systems are organized, such as an ERM system. In this study, there is three contingent areas that describe firm's debt financing access, which are hypothesized to be dependent on the degree of ERM implementation. Therefore, the contingency theory is the leading theoretical framework throughout this study.

The institutional theory explains why enterprise boards are increasingly applying ERM frameworks to improve their risk management oversight systems to comply with the rules and regulations of their legislative environment, industries and corporate peer groups. In contrast, agency theory is an important tool to understand the interrelations between operative management and the corporate boards, as agency theory suggests that corporate board of directors have incentives to organize strong risk oversight activities to control operational management and their risk-taking actions. Resource dependence theory would suggest that they also try to constantly enhance oversight activities resources to help the organization achieve its strategic objectives (Beasley, Branson & Pagach 2015: 219).

The concepts of risk appetite and risk tolerance are very important topics to understand the COSO ERM framework, as well as other widely used ERM frameworks that are being applied world-wide and that affect the daily work of risk management professionals and practitioners. The risk management culture is especially important phenomenon in SMEs, because the limited resources do not allow the usage of external consultants, and because the application of ERM processes are usually in the hands of the few operational managers and the board of directors. The attitude towards risk management defines the success of the risk management systems, such as ERM, in the small and medium-sized enterprises.

2.2.1. Contingency theory

Contingency Theory is based on the seminal works of Burns and Stalker in 1961, and Lawrence and Lorsch (1967) which proposed that there was no single best approach to managing and organizing. Contingency theory also states that organizational effectiveness depends on the fit between the characteristics of an organization, such as its structure, and contingencies that reflect the situation of the organization, such as organizational strategy

(Hulkko-Nyman 2016: 43). Contingency theory of organizations is a major theoretical lens used to view organizations and it has been a major part of organizational science's background since 1960's, and it is behind many thoughts taught today in business schools (Donaldson 2001). Coates et al. (1996: 23–24) categorize certain features that are common to most research that use the contingency theory as a theoretical framework:

1) Increasing rate of change in the organizations and their environments.
2) Environmental complexity, which cannot be modelled with few simple variables.
3) Holistic view on organizational structure and awareness that the structure itself is a control device.
4) Differentiation of control systems and short-term decision making.
5) Attempts to identify and study the key environmental factors, such as size of the organization, and their impact on management control systems.

For example, Mikes and Kaplan (see 2013; 2015) have proposed a contingency framework for ERM implementation, and have urged for further studies that would lead to the more mature development of a contingency theory of ERM. By developing its ERM framework, COSO (2004b) recognized that the appropriate ERM system will likely vary from firm to firm, and *basically COSO suggests a contingency perspective toward the appropriate ERM system for a particular organization* (Gordon et al. 2009: 303). There is no ideal or perfect ERM system, as has been suggested by many authors in literature (see e.g. Beasley et al., 2005; Moeller, 2007). Furthermore, the contingency perspective of ERM systems is consistent with the literature that examines the general structures of management control systems (e.g. Merchant, 1998; Chenhall, 2003). Nevertheless, Gordon et al. (2009) have studied and determined the key factors in the contingency relation between a firm's ERM system and its performance. Gordon et al. (2009) state that these contingency relationships are "far from an exact science". As suggested, there is no general theoretical framework or model that enables to examine the key factors influencing the relation between the ERM implementation and the company performance, or any other company variable. In the context of ERM and firm performance, which is generalizable to other success factors, such as access to debt financing, Gordon et al. (2009: 303) however suggest, based on the extensive literature, that there are five factors that are critical preconditions to understand the relationships between ERM and general firm performance. According to Gordon et al. (2009) these five factors are: environmental uncertainty, industry competition, firm size, firm

complexity, and board of directors' monitoring. In this study, the contingencies of firm size, industry competition (equivalently in this study the industry sector) and firm ownership are being examined in relation to the effect on the degree of ERM implementation. Monitoring by board of directors is closely related to the institutional ownership of business enterprises that usually means non-family ownership, and as agency theory suggests, the independent boards of directors have natural interest to oversee the operational management, and therefore, to implement internal control systems such as ERM. This implies that in the cases of separated institutional ownership the level of ERM implementation is generally higher.

Literature review of Faulkner & Heibl (2015) on risk management in SMEs suggests that the sophistication of risk management may increase the risk-taking attitude of SME owners, and this may change with growing firm size, as discussed earlier. This may indicate that risk management systems in SMEs are not stable over time, but contingent on certain developments, such as ownership changes, growth and evolution of the business portfolios. In the light of current ERM literature this phenomenon is also suggested by Bromiley et al. (2015) in the context of ERM adoption, implementation and administration.

2.2.2. Modern Portfolio Theory

ERM is a philosophical extension of Harry Markowitz's Modern Portfolio Theory (MPT). MPT provides a framework for thinking about the collective risk of a portfolio of securities and each security's contribution to that portfolio of risks (Ballantyne, 2013: 18). CAS (2003) implies that ERM generalizes risk management beyond financial risks to deal with all risk types an organization faces. The implications of this principle have created a growing recognition that risks must be managed with the total organization in mind, in other words as a company-wide "portfolio of risks". MPT is one of two foundational theories from which ERM has evolved (Alviniussen et al.: 2009), and it is widely known as a groundbreaking classical finance theory that was introduced by Harry Markowitz (1952) in his article of "Portfolio Selection".

The MPT demonstrates how investors can manage risk through diversification and asset allocation and it attempts to minimize risk for a given level of expected return through the careful selection and weighting of securities. The basic assumption of MPT is that investors are risk averse in general that means that given two portfolios that offer the same expected

return, investors will prefer the less risky one (see Markowitz 1952). The implication is that investors are rationale and will seek portfolios with favorable risk-return profiles (i.e. maximum return for lowest level of risk). MPT also assumes that markets are efficient. That is, assets are fairly priced and one cannot consistently beat the market given the information that is publicly available. (Ballantyne 2013: 35.)

Ballantyne (2013) also represents the ERM linkage to MPT, although ironically, ERM is not supported by MPT as discussed in the following chapter. However, the principles of ERM are similar to the MPT, according to Ballantyne (2013: 41):

- Portfolio risk is not equal to the sum of the individual organizational risks
- To quantify portfolio risks, one must quantify each individual risk and account for the interactions or co-movements between each risk (i.e. correlation analysis)
- The portfolio risk is relevant to all risk decisions within the organization

Ballantyne (2013: 41) states that these principles have created an increasing knowledge that risks must be managed with the total organization, which means enterprise-wide interests, in mind.

The fundamental reason for an ERM implementation is to enhance shareholder and stakeholder value (COSO: 2004a). However, MPT suggests that costly ERM implementation is not for the best interests of shareholders who may diversify their risk cost efficiently to eliminate the idiosyncratic risk (Beasley, Pagach & Warr 2008: 311). Capital Asset Pricing Model (CAPM) extends the MPT and the model by quantifying how the risk of an investment or a firm affects the expected return of investors. MPT divides the total portfolio risk to two components, systematic risk and unsystematic risk, and unique firm-specific risk can be diversified, however the (systematic) market risk is inherent and undiversifiable (Markowitz: 1952). According to CAPM, investors do not require compensation for unsystematic risks as assets earn a risk premium in excess of the risk-free rate of return based solely on their sensitivity to the market or beta. This implies that the organizations that use their resources to enhance management control systems, such as ERM, to mitigate firm specific risk as investors are compensated only based on market returns, which implies that any expenditure to mitigate firm-specific risks diminishes shareholder value and is a representations of a negative net present value project (Beasley et al. 2008: 312). Meulbroek (2002: 57) maintains

that "the direct expenses and distraction of management's attention would make risk management a negative net-present-value proposition for the firm" under the perfect market conditions, as theorized by Modigliani & Miller (1958) in their classic research. On the other hand, the supporters of ERM often argue that the integrated decision making across all the levels of business organization and functions, as described by COSO (2004b), the companies are able to avoid duplication of risk management costs by exploiting so called natural hedges, such as netting financial risk positions between different business units of a firm (Bertinetti et al. 2003: 5).

According to MPT and CAPM the shareholders are able to diversify their unsystematic risk and optimize their portfolios to maximize their returns for lowest level of risk. However, the company stakeholders, and even strategic shareholders that are usually owner-managers, are tied to the success of a certain company. The "lower-tail outcome" refers to a situation or an event in which a decline in profitability or a large scale single economical loss would result in severe negative consequences for the firm. Therefore, with a heightened likelihood of lower-tail outcomes, any risk management activity reduces the likelihood of losses associated with such outcomes and therefore represent a positive net present value project (Stulz: 1996). For example, managers and key employees of public firms have an undiversifiable stake in the firm and will bear a greater proportion of the cost of a lower-tail event, and thus demand a higher compensation cost for a firm creating a positive net present value project for an ERM implementation (Beasley et al. 2008: 316). Nocco & Stulz (2006) reassert that "at the micro level, ERM becomes a way of life for managers and employees at all levels of the company". MPT has been widely applied within the risk management systems of investment companies, although other industries have also followed the securities and investment community. For instance, Nikonov (2007) suggests that MPT is a suitable tool for ERM within an efficient project portfolio, instead of security portfolio, and sees a clear link between the MPT and the contemporary risk management and mitigation techniques.

2.2.3. Triangle of institutional theory, agency theory and resource dependence theory

A business enterprise is an organization with rules and routines that interact with the "institutional realm" and "the realm of action" (Burns & Scapens 2000). The institutional element of a business organization has been within the increasing interest across the social sciences. Institutional theory, as defined by Scott (1995), is *a theory on the deeper and*

more resilient aspects of social structure and that *it considers the processes by which structures, including schemes, rules, norms, and routines, become established as authoritative guidelines for social behavior.* Scott (1995:33) asserts that institutions are first of all social structures. Scott also maintains that the qualities of institutions ate that they have attained a high degree of resilience, have several cultural-cognitive, normative, and regulative elements which "provide stability and meaning to social life". Also, according to Scott (1995) institutional theory is a widely accepted theoretical framework that emphasizes rationality, isomorphism, and legitimacy. Especially isomorphism has been observed in the early stages of ERM implementation evolution as an emerging framework in the consciousness of boards and managements of modern business organizations.

As described in the previous chapters, numerous regulatory institutions, such as NYSE, the SEC, the credit rating agencies and U.S. Congress and many others have required that the organizations strengthen their overall risk management processes (Beasley et al. 2015: 241) and the ensuing legislative and regulatory frameworks, or coercive institutional pressure (Hulkko-Nyman 2016: 42), have forced the organizations to respond to the emergence of new risk management paradigm of ERM. The existence of several conceptual frameworks, described in chapter 2.4, and other best practices may be the reason for boards of directors and operational management to implement only the basic features of most popular ERM processes to mitigate some generally accepted practices. These "shadow actions" are implemented in a manner that their organizations resemble the peer group of companies. Beasley et al. (2015: 220–221) argue that *in those situations, organizations may claim to have implemented ERM to satisfy calls for greater oversight, but those implementations lack evidence of any consistent or active risk oversight structure and are comprised of differing components, if any*. Thus, these situations represent the general principles of institutional theory, also evident in the survey-based research by Beasley et al. (2015) to AICPA members working mostly in CFO positions in North American firms. Institutional theory, developed in sociology of organizations and organizational behavior literatures, would suggest that numerous organizations implement just the core processes of ERM for the reasons of resembling with closest peer companies, and usually having very little effort in overall risk oversight.

Agency theory, which has its roots in the financial economics literature, is basically a contractual relationship of two or more parties (agent and principal), in which the principal

engages the agent, to perform and work on behalf of the principal's interests and in return for these efforts, the agent usually receives payment of some kind from the principal (Daud et al. 2010: 56). In short, the agency theory is explained to present how to best organize relationships in which one party determines the goals of the efforts while another party does the actual work to reach these goals. In this particular context, the ERM implementation assists the company board to oversight the risk-taking of the operational management. Therefore, the ERM implementation is not something that "just should be done", but a greater engagement by the board and senior executives to monitor risks associated with the agency relationship. The corporate governance literature emphasizes the significant role of corporate boards on behalf of shareholders, and stakeholders, in the oversight of operational management. Agency theory argues that the governance role of the boards is essential in monitoring and overseeing management's actions, and to constantly ensure the operational actions are for the best of shareholders', and stakeholders', interests (Beasley et al. 2015: 234). Arena & Arnaboldi (2014) studied the association of ERM with performance management systems in the research literature, and conclude that these systems present relevant similarities and potential synergies, thus supplementing the relevance of agency theory. Furthermore, agency theory implies that boards has the key role in establishing the structures to oversee management's efforts to ensure the ERM processes provide relevant information to assist the board of directors (Beasley et al. 2015: 225). Contrast to these interrelations between corporate oversight levels, this study also examines the family businesses and their relation to the ERM and its implementation. The earlier research (Brustbauer 2016) shows that the agent-principal problem is less significant in the family-owned businesses as typically the owners of the enterprise are simultaneously the managing actors at the firm's operative level. In the chapter 3 the relationship of company ownership to the implementation of ERM will be more thoroughly examined, within the context of Finnish SMEs. Also, an important principal-agent relationship can be identified for example between creditors (principal) who provide financing and the entrepreneur (agent) who runs the business.

The shareholders of the company, on the other hand, rely on the board of directors to implement risk oversight processes. Beasley et al. (2015: 226) explains that "the resource dependence theory ("RDT"), which is developed in the strategic management literature, focuses on the view that ERM as a governance mechanism provides a platform to help the organization achieve and further its strategic objectives". Pfeffer and Salancik (1978)

originally formulated the resource dependence theory, in which their key argument was that the shareholders rely on the corporate board to implement explicit processes related to risk oversight to help setting the strategy of the firm. As RDT is another angle of corporate governance and strategic management, it has obvious linkages to any ERM framework applied by the business enterprises. Pfeffer and Salancik (1978) state that to understand the organizational behavior, one must understand how the organization relates to other social actors in its environment. Consistent with the resource dependence theory view of governance, ERM improves an organization's long-term strategic success when all the organizational actors are involved, and thereby adds value to the overall corporate governance of the firm (Beasley et al. 2015: 226).

2.2.4. Corporate governance

In this research, the corporate governance is discussed as a broad field of study that connects most of the theories, concepts and definitions that are interconnected with ERM and holistic risk management phenomena together. Whether a company is a start-up or a multinational publicly listed corporation, the corporate governance is a much debated and discussed issues to govern the enterprise according to the interest of shareholders, as well as stakeholders, and in the wider context, the whole surrounding society. Corporate governance describes how corporations should be run, directed and controlled within the governance structures of a corporation. Therefore, corporate governance can also be said to be about supervising and holding to account those who direct and control the management. Corporate governance can be described as a very broad term in the field of corporate management, and usually corporate governance just refers to the mechanisms, processes and relations by which enterprises are run for the benefit of shareholders and stakeholders alike (Abor & Adjasi 2007: 113). Whatever is the definition and the scope of the corporate governance, it is inextricably linked to the management control systems (Merchant & Van der Stede 2012: 553).

The 1990s started the "corporate governance revolution" (Power 2004: 25) that added pressures for greater internal accountability. This revolution was supported by the advances of internal control systems, which are also used for responsibility allocation systems and their processes. Risk management is a natural extension of this corporate governance trend. Then, the numerous corporate accounting scandals of the early 2000s in the United States, but also in some extent in Europe (Parmalat, Vivendi, Swissair), resulted in the tightening corporate

governance requirements and contributed to the need for more effective risk management policies (Ramirez & Simkins 2008; Beasley et al. 2005). Corporate governance is one of the fundamental concepts of the internal control, and therefore the interrelation between corporate governance and ERM is being discussed. The Organization for Economic Co-operation and Development (OECD) defines corporate governance as follows, although mentioning that, however, there is no single model of good corporate governance (OECD 2015: 10):

> *Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and should facilitate effective monitoring* (OECD 2015).

The OECD definition has several connections to modern ERM frameworks. Corporate governance is mainly interrelated to the strategic objectives of a company as defined by COSO (2004b: 20–21) and the components of the COSO ERM framework such as *objective setting* and *monitoring* are in the core of the "good corporate governance" that is one of the most popular catchphrases in the contemporary corporate culture. The implementation of "good corporate governance", and hence good ERM implementation, has various obstacles inside the SMEs with more limited resources. The Association of Chartered Certified Accountants (ACCA 2015: 3) state in their report that "the challenge for SMEs is that established corporate governance frameworks have been developed with large, listed companies primarily in mind". Thus, these corporate governance frameworks and regulatory codes may not reflect the characteristics of typical SMEs, where ownership and the management are not separated, or especially when company ownership may be shared across family members.

Proper and appropriate corporate governance has a range of benefits for SMEs. ACCA (2015) has observed that these benefits include:

- less risk of conflict between family members or other owners who are actively managing the business and those who are not
- enhanced access to credit

- faster business growth
- greater resilience to fraud, theft or other financial costs due to poor internal controls

This study concentrates on the second observation of "enhanced access to credit" in the later chapter 3.2, but it should be noted that financial institutions, for example large pension funds, are addressing the need for improved corporate governance, including risk management, and have stated their willingness to pay premiums for the stock of firms with strong, independent board governance (Aabo et al. 2005: 62), thus highlighting the influence on the total capital stock of business entities.

Bowling & Rieger (2005: 17) emphasize the role of ERM, in the context of financial institutions, in strengthening corporate governance that is being composed of the systems and processes applied by an organization in order to address the interest of the shareholders, and ideally, the needs of all stakeholders, including employees, customers, lenders, vendors and the surrounding community as a whole. All these external and internal parties share the interest of a successful continuation of the business organization. Bowling & Rieger also maintain that ERM plays an important role in corporate governance, as good corporate governance requires well-advised and structured risk-taking, including the monitoring of risks and ensuring comprehensive understanding of how those risks are managed.

Since the agency problems are less likely to exist within the SMEs, it is usually believed that corporate governance would not apply as strictly to SMEs, because in many instances, SMEs are very owner-driven, where one person could be the key manager and basically because SMEs tend to have a less separated ownership and management compared to the larger companies. There is a global concern for the application of corporate governance to SMEs and that the similar guidelines that apply to listed companies should also be applicable to SMEs (Abor & Adjasi 2007: 116). A holistic concept as the corporate governance is, it is tightly associated with the risk management procedures and the implemented ERM systems of a SME. These issues are described in more detail in the following chapters regarding the corporate risk management culture and ERM implementation.

Laws that are related to different forms of corporate governance do not presently include any particular guidance regarding ERM. However, ERM seems to be an important element of financial performance (Ramirez & Simkins 2008: 594). Risk mismanagement and poor

corporate governance have had disastrous effects on businesses. Systemic risk mismanagement can also create macroeconomic impacts, as was evident during the financial crisis of 2007–2008. Consequently Ramirez & Simkins propose that *it seems appropriate for the SEC to promulgate interpretative guidance to both facilitate more optimal risk management for public companies and to limit the risk of judicial definition of the materiality of enterprise-wide risk management.*

2.2.5. The concepts of risk appetite and risk tolerance

The concept of risk appetite has received considerable attention recently in ERM contexts (Aven 2013: 462). ISO 31000 and guide 73 defines the risk appetite as *the amount and type of risk that an organization is willing to pursue or retain*. Risk tolerance is defined as *organization's or stakeholder's readiness to bear the risk after risk treatment in order to achieve its objectives* (Purdy 2011: 5; Louisot & Ketchum 2014: 24–25). Bromiley et al. (2015) also argue that the empirical literature on ERM has not responded to the various concepts of the actual practitioners. Regulatory contexts and procedures use indefinite terms like "risk culture" and "risk appetite". For instance, COSO (2004b) defines risk appetite as vaguely as:

> *The degree of risk, on a broad-based level, that a company or other entity is willing to accept in pursuit of its goals,* and also as *the amount of risk an entity is willing to accept in pursuit of value.*

Despite these grand definitions, Fraser & Simkins (2016: 695) remind that the COSO generated term of risk appetite was originally "a mass confusion" and a major inhibitor of successful implementation of ERM. Purdy (2011: 3) criticizes the COSO definitions as "vague, ambiguous and contradictory, and that the gap between theory and practice is often wide". Purdy (2011) also states that this terminological confusion was also recognized by ISO, which decided not to use either COSO originated term in the ISO 31000, and instead used the term "risk attitude" instead of "appetite". Bromiley et al. (2015: 269) also questions what the risk appetite exactly means, and whether the consistent risk appetite even exist in the corporate business culture, and whether risk management processes have any effect on corporate risk levels after all.

One of the biggest challenges for managements is determining how much risk their business entity is prepared to accept in their efforts to create value (COSO 2004a). The organization must decide on its risk appetite or how much risk it needs to take to achieve its objectives, both those of its shareholders and stakeholders (Fraser & Simkins 2010: 113). Businesses can't avoid taking risks to achieve their objectives growth, capital return, sustainability, growing reputation and trust, avoidance of decline, and so forth. ERM frameworks in general typically recommend that the organization selects a suitable risk appetite level in an informed and predictable way. Risk appetite is also seen as a quantifiable measure to the level and type of risk a firm is accepting in its risk exposures in business activities, given the predetermined business objectives and obligations to stakeholders (COSO 2010: 1). In this context risk appetite is also important not only from the shareholders' point of view, but certainly from the creditors' point of view as it defines the policies regarding the risks that a firm will accept and to be able fulfill the current and future debt obligations. Therefore, the accepted, and perhaps communicated, level of risk appetite is an important measure for creditors to judge the creditworthiness of any SME, and to evaluate the ERM systems in use, thus creating operational relevance for the concept of risk appetite.

One also must make a distinction between risk appetite and the concept of "risk tolerance". As risk appetite is the "broad based" amount of risk, that a company is willing to accept in pursuit of its objectives, risk tolerance is measurable "acceptable variations" from those objectives (Liu Xin 2011: 35). In other words, risk appetite (e.g., the company does not accept risks that could result in a significant loss of its revenue) is the higher level statement that considers broadly the levels of risks that an entity is willing to accept in pursuit of value (COSO 2004b), whereas risk tolerance (e.g., the company does not accept risks that could cause revenue to decline by more than 10%) is a narrower level than risk appetite and sets the acceptable level of variation around objectives (COSO 2004b; Liu Xin 2011: 36, see also Figure 4). An organization's risk appetite (and tolerance) is usually communicated through Key Risk Indicators ("KRIs") (Beasley et al. 2010). However, even larger resourceful corporations do not necessarily communicate their risk appetite via KRIs. Survey research by Beasley et al. (2010: 35) revealed the level of risk appetite identification, or assessing the KRIs, is not as usual as the common perception suggests. The research found that less than half of the larger organizations have no process or only a minimal processes for identifying and tracking emerging risks, and also that over half of the surveyed firms do no tracking of KRIs at the board or senior management level.

The risk appetite can be defined in qualitative or in quantitative terms. For example, Holopainen, Koivu & Kuuluvainen (2010: 36) present the targeted risk appetite as an equation:

(1) $$r = rh * R,$$

where

R = total risk
rh = risk management procedures
r = targeted risk appetite

This equation clarifies the philosophy that risk management is not about minimizing or mitigating all the risks, instead to find a targeted level of risk appetite of an organization. Risks must be managed, but also the potential of "upsides" must be utilized (Holopainen et al. 2010).

2.2.6. Risk management culture

Risk management culture has been identified as a closely intertwined element of corporate governance and both traditional and holistic risk management systems. The public attention to the several high-profile accounting scandals in the early 2000s were explicit examples of organizational behavior that at least partly can be traced back to the corporate and risk management culture (Drew 2006). An important precondition for effective ERM implementation is the detailed risk management agenda ("tone at the top") set by the board of directors and top management, who are ultimately responsible for enterprise risk management (Shenkir & Walker 2014: 12). Implementation literature on risk management often talk about firms adopting appropriate "risk cultures". For example, credit rating agency S&P evaluates risk cultures using "internal transparency of the risk management process" and by evaluating the "staffing and structure of the risk management team" and the "influence that risk management team has with the top".

Silva, Wu & Ojiako (2013) state that at level of single firm three factors are found to influence the ability of SMEs to enhance risk management abilities, which are: ERM, internal control, and risk culture. Risk management culture, or risk culture in short, is necessary condition for effective ERM implementation. Shenkir & Walker (2014: 12) describe this risk management culture, or "tone at the top", to include the board discussions around the questions of key risk management issues, sending a message to top management "that the board recognizes that any organization is vulnerable to risk, and they expect top management to maintain an effective risk management process". Below the board level, the importance the operational management places on effective ERM is another risk cultural message to the organization and signals the importance of ERM.

Fraser & Simkins (2016: 690) have observed eight internal challenges in implementing ERM, and as the first challenge they mention the corporate culture that in the risk management context means the risk management culture of a corporation. Indeed, ERM does not work in all corporate cultures. The successful implementation of ERM depends on organizational willingness to be open, to share, and to develop teamwork among the board of directors, senior management and staff. It seems that the current research is insufficient to address how the corporate culture affects the ERM implementation, and it is mostly a general assumption that a firm's chances of success with ERM implementation is contingent upon cultural capacity for openness, transparency, and teamwork (Fraser & Simkins 2016: 690).

Features of risk management culture that can negatively impact good governance and holistic risk management processes include for example attitudes of arrogance, unethical behavior, excessive internal rivalry, secretiveness, persecution of people who speak up ("whistleblowers") and unwillingness to admit failure (Drew 2006: 129–130). On the contrary, Sax & Torp (2015) argue that the risk management culture should support internal knowledge transfer and learning processes and that firms should embrace initiatives for employee involvement that should increase the strategic responsiveness of a company. The risk culture and cultural factors, as Sax & Torp (2015: 1461) argue, have effect on risk performance and ERM implementation success, and that in particular, they find a significant effect of a participative leadership style on risk outcomes. Moreover Sax & Torp highlight creating a culture in which also employees are engaged in the risk management process, which is essential for identifying potential risks and detecting potential opportunities. In the context of SMEs, the risk management culture is focused on the actions of few managers and

management levels, and decisions to adopt and implement more systematic risk management systems and therefore these results indicate the participative leadership style, that especially smaller businesses typically possess, is an important ingredient in the risk management culture of SMEs and their potential ERM implementation. Silva et al. (2013) conclude that a shared risk culture has the highest importance to an SME, especially when the business is in the growth phase and when the entrepreneurial controlling influence is decreasing, therefore increasing the need and importance for formal processes and frameworks.

One fine example of corporate risk management culture is Berkshire Hathaway that carries some interesting alternative to established business consultancy driven risk management philosophies by Berkshire Hathaway's chairman of the board, Warren Buffett. Berkshire Hathaway has implemented some of the most successful risk management philosophies within the enterprises that are part of the Berkshire Hathaway group of companies. In 2001 and 2002 annual reports, chairman Buffett outlines the Berkshire Hathaway enterprise risk management framework as "to accept only the risks one understands, to focus more on the impact of the risks rather than their probabilities, to avoid the usage of derivatives and to appoint managers that have aligned ownership interests with rest of the shareholders and that stay within their risk appetite" (Fraser & Simkins 2010: 307). This example of a simple enterprise risk management policy, or a risk management statement of their risk management culture, is exceptional within the largest enterprises of the World, but it also reminds that the simple, yet disciplined, enterprise risk management culture that also any SME can implement, may be successful within the accepted risk appetite and risk management objectives.

Corporate reputation is closely linked to the risk management culture by being an intangible, hard-to-measure asset, which may be businesses' most important asset, and also most difficult to protect and fastest to destroy (Vallens 2008: 37). As Warren Buffett has once said, "it takes 20 years to build a reputation, and just five minutes to ruin it". According to a report by the Economist Intelligence Unit (EIU 2005), reputation risk is the greatest risk facing global companies. Of the 269 risk executives surveyed by the EIU (2005) 52% said that reputation risk was more significant issue than regulatory risk (41%), human capital risk (41%), IT risk (35%), market risk (32%) or credit risk (29%). Also, 28% reported that suffering a major financial loss from a reputational event. Therefore, the risk professionals understand the importance of reputation, because it has direct associations with virtually all

the other risks companies have identified. This study does not emphasize the reputational relationships to the studied variables, but the close linkages to the corporate risk management culture should be notified, especially in the light of ERM evolution that has emerged from the numerous corporate risk management disasters, such as Arthur Andersen, British Petroleum, Monsanto and Mattel from the last decade (Vallens 2008: 43). These linkages are also presented in Figure 3 (Lam 2015: 5).

As stated before, both concepts and definitions of risk appetite and risk (management) culture are vague and open for interpretation, also in the latest in the ERM literature. For example, D. W. Brooks (see Fraser & Simkins 2010: 87) defines culture as "what determines how decisions are made in an organization," and proceeds that "a strong culture is one in which decisions are made in a disciplined way, considering the considerations of risk and reward on an informed basis". Bromiley et al. (2015: 271) argue that both practitioners and regulators use definitions of risk culture and risk appetite in ways that may be problematic for researchers, and there has been an increased need for more empirical research on whether corporations have consistent risk cultures and appetites to specify these issues. Lam (2015: 5) summarizes the key linkages between ERM, risk appetite, risk culture and reputation in Figure 3.
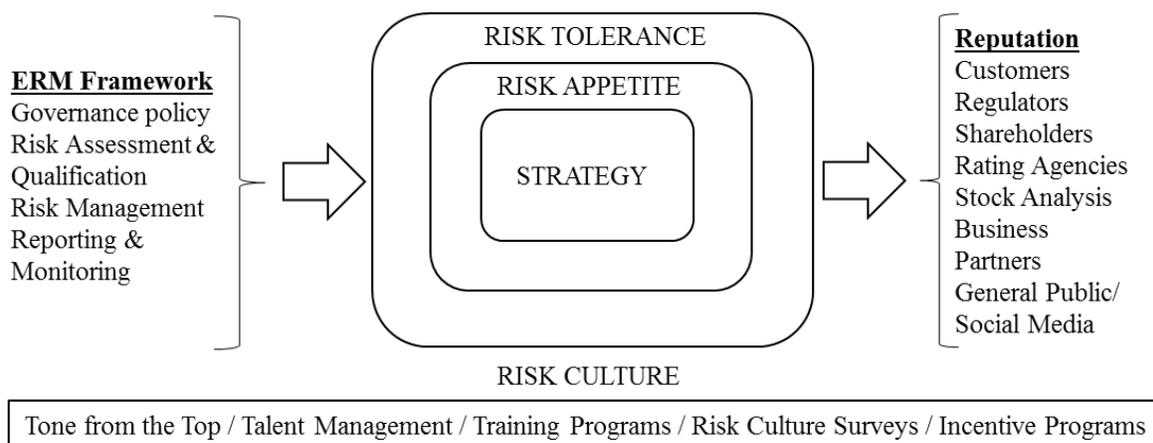
Figure 3. Key linkages between ERM, risk appetite, risk culture and reputation.

2.3. COSO Enterprise Risk Management – Integrated Framework

The purpose of chapter 2.3. is to represent the most recognized and referred ERM framework – *the COSO ERM – Integrated Framework* – and its most important aspects for this study, its empirical relevance to the research questions, derived hypothesis and applied survey questionnaire to compile the empirical data on ERM implementation of SMEs and the effect on the debt financing access. COSO ERM is the theoretical framework behind the structure of the survey questionnaire that is divided into the four categories of ERM related questions, each category representing a strategic objective of the framework. In the context of SMEs all the terminology and practical dimensions are not applicable, so literature-based survey questions are being applied to study the level of risk management in the context of ERM.

One of the most prominent and most widely accepted frameworks of enterprise risk management was introduced by the Committee of Sponsoring Organization of the Treadway Commission (COSO) in 2004 as *Enterprise Risk Management – Integrated Framework*. COSO released the *Enterprise Risk Management – Integrated Framework* in the same year the New York Stock Exchange (NYSE) issued new corporate governance rules requiring audit committees of listed firms to be more involved in risk oversight (Bertinetti et al. 2013: 2), thus strengthening the regulatory and self-regulatory risk management practices. The COSO ERM framework presents the key elements of a process for managing all types of risk (Beasley et al. 2005: 68). The relevance of COSO ERM for any risk management research is justified by its popularity – COSO ERM is already widely used in many organizations and it is widely regarded as a starting point for an ERM implementation initiative (Muralidhar 2010: 60). This COSO ERM model has become the preferred model that goes beyond internal controls (e.g. COSO Internal Control – Integrated Framework) to provide a system to address organizational risks in a collective integrated way, which is opposite to dealing with risks individually through a silo-based risk management (Lundqvist 2014: 412).

One of the most notorious COSO ERM applications in Finland is the framework recommendation implemented by the Ministry of Finance that regards the governmental institutes of Finland (Holopainen et al. 2010: 43). This framework recommendation is based on COSO ERM framework, but it is considerably shaped for the needs of governmental needs and environment (Valtiovarainministeriö 2005). The Finnish Ministry of Finance, as an example, is just stating that the applied framework is a generalization of a possible ideal state

within the governmental organizations, and it is not meant to be normative "minimum level of internal control" (Valtiovarainministeriö 2005: 18). The example of the Finnish Ministry of Finance underlines the fact that the COSO ERM framework is applicable for any type of an organization (for-profit, not-for-profit or a family-owned business) and also intentionally broadly defined to be flexible and to fit for implementation within corporations of any size and industry sector.

2.3.1. Key concepts and definitions

The COSO enterprise risk management framework ("COSO ERM") is widely utilized by larger corporations, risk management professionals and stakeholders, such as credit rating agencies, and it is discussed and dissected in numerous articles (see for example Beasley et al. 2005; Fraser, Schoening-Thiessen & Simkins 2008; Oliva 2012; Paape & Speklé 2012). The COSO ERM framework provides key principles and concepts, a common language, and clear direction and guidance for practitioners of enterprise-wide risk management. COSO states that the underlying premise of enterprise risk management is *that every entity exists to provide value for its stakeholders* (COSO 2004a: 1). That is an interesting perspective as COSO defines value creation to consider not only the shareholders, but also the wider interest group of an enterprise – the stakeholders, which by a Merriam-Webster legal definition is *a person having an interest or share in a commercial undertaking*. The stakeholder value, its creation, growth and preservation, are in the core rather than narrower aspect of shareholder value. Therefore COSO (2004b: 16) emphasizes in their enterprise risk management framework definition that the ERM is *a process* that involves the *entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise* implying that the value creation affects also the stakeholders of the organization.

COSO maintains that their definition is broad on purpose to capture key concepts for companies and organizations to manage risk (COSO 2004a: 2). The COSO ERM report states that definition reflects certain fundamental concepts, and more particularly, according to COSO enterprise risk management is (COSO 2004b: 17):

- *A process, ongoing and flowing through an entity.*
- *Effected by people at every level of an organization.*
- *Applied in strategy setting.*

- *Applied across the enterprise, at every level and unit, and includes taking an entity-level portfolio view of risk.*
- *Designed to identify potential events that, if they occur, will affect the entity and to manage risk within its risk appetite.*
- *Able to provide reasonable assurance to an entity's management and board of directors.*
- *Geared to achievement of objectives in one or more separate but overlapping categories.*

In order to analyze enterprise risk management, it is important to define and "events" and their relation to the achievement of strategic objectives. An event is *an incident or occurrence from internal or external sources that affects achievement of objectives*. Events with negative impact represent risks, and accordingly risk is defined as *the possibility that an event will occur and adversely affect the achievement of objectives*. Events with positive impact may on the hand offset negative impacts or represent opportunities, and are defined as *the possibility that an event will occur and positively affect the achievement of objectives*. (COSO 2004b: 16.)

Achievement of objectives is vital for any successful long-term business enterprise, and in general having accurately expressed mission and vision statements, but also pre-determined strategic objectives that lead the strategic and operational thinking of the company management. COSO ERM framework is geared towards achieving the objectives that are divided in four categories. These same categories are being used in this study to structure and measure the degree of ERM implementation. The objective categories are (COSO 2004b: 20–21):

- *Strategic – high-level goals, aligned with and supporting its mission*
- *Operations – effective and efficient use of its resources*
- *Reporting – reliability of reporting*
- *Compliance – compliance with applicable laws and regulations*

The reason for this categorization is to allow focus on separate aspects of ERM. COSO explains that these categories are overlapping, in other words a particular objective may fall into several categories. ERM is also supposed to *provide reasonable assurance of achieving*

the objectives, because the objectives of reliable reporting and compliance with applicable laws and regulations are within company's control. However, external events not completely in the control of an enterprise, affect the achievement of strategic and operations objectives. For these objectives *ERM can provide reasonable assurance*, when management and the overseeing board of directors are made aware of the direction where the enterprise is moving toward achieving these objectives. (COSO 2004b: 16.)

Components of the ERM are consisted of eight interrelated components that are derived from the way managements run business and are integrated with the management process (COSO 2004b: 22). The COSO ERM framework states that managements should take into consideration these eight components when implementing an effective enterprise risk management system. The eight components, as well as objectives and entity levels of an enterprise, are presented in the "COSO ERM cube" in Figure 4 as formulated by COSO (COSO 2004b). The COSO ERM components are:

- **Internal Environment**, which establishes the foundation for risk philosophy and the enterprise risk appetite. This is the basis for how risk and control are viewed and addressed, and includes the integrity, ethical values and competence of individuals and the environment where they operate.
- **Objective Setting**, which must exist before management can identify potential events affecting their achievement. Objective setting ensures that chosen objectives support and align with the mission statement and is consistent with the entity's risk appetite.
- **Event Identification**, which ensures that the potential events impacting the entity are being identified, both internal and external, and includes distinguishing between events that represent risks, opportunities and possibly both. Opportunities are channeled back to management's strategy or objective-setting process.
- **Risk assessment**, which involves the identification and analysis of relevant risks for determining how they should be managed. Risks are assessed on both inherent and a residual basis, with the assessment considering both the likelihood and impact of the risks.
- **Risk Response**, which involves identifying and evaluating possible responses to risks that includes avoiding accepting reducing and sharing risk. The actions are

being chosen for risks, and are aligned with the chosen risk appetite and risk tolerance.

- **Control activities**, which covers policies, procedures and practices which ensure that risk responses the management selects are effectively carried out.
- **Information and communication**, which enables people to carry out their risk management responsibilities. Information supports the implementation of other components. The communication of responsibilities to employees is being enabled and information provided that is needed by personnel to carry out their duties.
- **Monitoring**, which covers the internal and external overview of the entirety of ERM and modifications, if necessary. Monitoring is accomplished through ongoing management activities, separate evaluations of ERM, or combination of both.

It should be noted that ERM is a "dynamic, multidirectional and iterative process", where almost any component can affect another, and therefore, the application of the components may look very different from one another as the enterprises differ by industry and size (COSO 2004b: 23). This observation is also supported by the contingency theory.
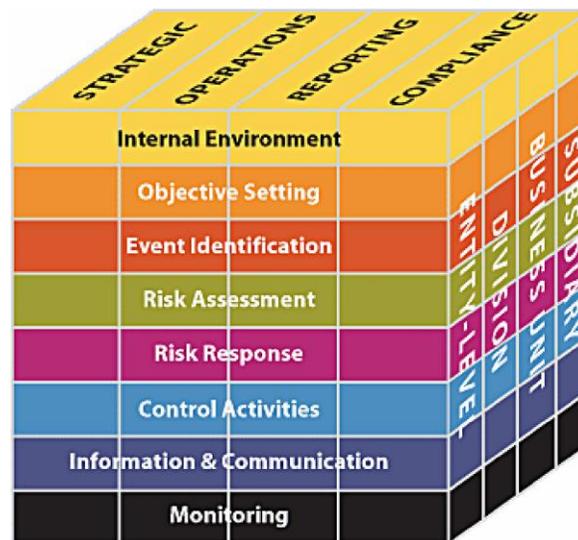
Figure 4. The "COSO ERM cube".

Relationship of objectives and components are an important angle of the COSO ERM framework that is depicted in three-dimensional matrix, in the shape of a cube ("COSO ERM cube"), shown in Figure 4. Most of these relationships of objectives and components are covered in the survey questionnaire to achieve a comprehensive cross-sectional study on the degree of ERM implementation and risk management of each survey respondent.

2.3.2. Limitations

According to COSO, several limitations of their framework does exist, while providing substantial benefits for organizations. COSO (2004b: 93) divides these limitations of their ERM framework into three distinct concept areas:

(1) Risk relates to the future, which is inherently uncertain.

(2) Even an effective ERM operates at different levels with respect to different objectives. For strategic and operations objectives, ERM can help ensure the management, and the board in its oversight role, is aware only of the extent of direction of achieving the objectives. ERM cannot provide even reasonable assurance that the objectives themselves will be achieved.

(3) ERM cannot provide absolute assurance with respect to any of the objective categories.

COSO (2004a: 5.) also reminds that all processual systems are managed by human action, and in addition to factors listed above, limitations result from the realities that human judgment in decision making can be faulty. Therefore "system breakdowns" can occur because of simple human errors or mistakes, disagreements between the people of an organization, and because management has the ability to override ERM decisions. These limitations preclude a board and management from having absolute assurance as to achievement of the entity's objectives. Especially in the context of SMEs the decisions on responding to risk and establishing systematics ERM controls the relative costs and benefits need to be critically considered limiting the full implementation of the ERM.

There are additional notions of limitations in the research literature, such as limited implementation guidance, conceptual complicatedness for middle management and the fact that the framework is developed by accountants and therefore lacking coverage from business

and management perspective. These issues are discussed in the general critique in chapter 2.5.

2.4. Other enterprise risk management conceptual frameworks

The COSO ERM framework, although the most widely known ERM framework and lending widely accepted credibility to the concept of ERM (Fraser & Simkins 2016: 690), it does not stand as the only globally accepted, referred and implemented risk management system. Before the COSO ERM leading the way during the mid-1990s were the Australian and New Zealand Risk Management Standard 4360, a risk management consultancy Tillinghast-Towers Perrin, and the Conference Board of Canada, which expanded the view on risk management towards a holistic enterprise-wide concept of managing risks as a portfolio across the business entities (Fraser & Simkins 2016: 689). The frameworks that were introduced later in the early 2000s were the ISO 31000 –Standard, Casual Actuarial Society (CAS) framework and Risk and Insurance Management Society (RIMS) Risk Maturity Model (RMM) framework are widely referred, adopted and implemented. The purpose of this study is not to present these other frameworks in detail. Knowing the variety of accepted frameworks is too ample to discuss in this study, this chapter will only address the most actively referred conceptual frameworks, which have affected the current practices in all sizes of businesses, in the current ERM literature.

Australia and New Zealand Standard on Risk Management. In 1995, Australia and New Zealand produced the first edition of the (joint) Australia and New Zealand Standard on Risk Management, which is the world's first risk management standard (Moeller 2007). The then popular framework for ERM was established by the Standards Australia and Standards New Zealand Technical Committee, and the updated Australian and New Zealand Standard on Risk Management (which is also known as AS/NZS 4360:2004) was released on 2004. AS/NZS 4360:2004 has been adopted by the Australian government, many large public companies, and the UK National Health Service (Ballantyne 2013: 50). Perhaps surprisingly, in a literature survey by Fraser et al. (2008) the corporate ERM practitioners had not used Australian/New Zealand Risk Management Standard 4360 as a reference, which on the other hand had been considered "the simplest, most convenient on risk management". The AS/NZS 4360:2004 provides the first descriptions of practical ERM implementation by using generic

examples. Aabo et al. (2005: 63) remind that while ERM-related articles and reports provide examples and provide potential benefits of ERM, most lack a practical framework that includes sufficient detail for guidance.

AS/NZS 4360:2004 framework consists of eight core components (Standards Australia/Standards New Zealand 2004):

1) Establish the context
2) Risk identification
3) Risk analysis
4) Risk evaluation
5) Risk treatment
6) Monitoring and review
7) Recording the risk management process
8) Establishing effective risk management

ISO 31000 Risk Management Standard. The latest version of the AS/NZS 4360:2004 had been embraced and updated by ISO to be evolved as the world's risk management standard – the ISO 31000 (Ahmad, Ng & McManus 2014: 542). The world-wide standardizing organization ISO – the International Organization for Standardization – started "the second wave of proposals" to standardize the practices of enterprise risk management (Oliva 2016: 68). The proposal of ISO 31000 (more precisely ISO 31000:2009) comprises the presentation of a risk management architecture consisting of principles, structures and processes that provides a conceptual model and methodology to be applied in corporations. The standard promotes decreasing financial and operating losses, reducing inventory losses, improving supplier relations and reducing external capital dependences (Oliva 2016: 68). ISO 31000 is considered to combine best practices from COSO ERM, PMI (Project Management Institute) ERM and the Australia and New Zealand Standard, as well as other leading international risk management standards (Fraser & Simkins 2007; Lundqvist 2014: 395).

Cura (2009: 4) states that the ISO 31000 risk standard outlines five qualities that "identify excellence in risk management":

1) *A pronounced emphasis on continual improvement in risk management through the setting of organizational performance goals, measurement, review and the subsequent modification of processes, systems, resources, capabilities and skills.*

2) *Comprehensive, fully defined and fully accepted accountability for risks, risk controls and risk treatment tasks. Designated individuals fully accept, are appropriately skilled, and have adequate resources to check risk controls, monitor risks, improve risk controls and communicate effectively about risks and their management to internal and external stakeholders.*

3) *All decision making within the organization, whatever the level of importance and significance, involves the explicit consideration of risks and the application of risk management to some appropriate degree.*

4) *Continual communications with highly visible, comprehensive and frequent internal and external reporting of risk management performance to all stakeholders as part of a governance process.*

5) *Risk management is viewed as central to the organization's management processes so that risks are considered in terms of effect of uncertainty on objectives. The organization's governance structure and process are founded on the management of risk. Effective risk management is regarded by managers as essential for the achievement of the organization's objectives.*

Casual Actuarial Society (CAS) framework. In 2003, the Casualty Actuarial Society (CAS) defined *ERM as the discipline by which an organization in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders* (CAS 2003). Many actuarial professional bodies (e.g., Institute of Risk Management, Institute of Actuaries, CAS) are progressing with the development of practice-based focus on ERM, and these organizations tend to be more interested in the practical aspects of ERM (Acharyya & Brady 2014: 114).

The CAS conceptualized ERM as proceeding across the two dimensions of *risk type* and *risk management process steps*. The CAS framework's risk types, and examples of risks, include (CAS 2003: 8–10):

- Hazard risk - liability torts, property damage, and natural catastrophe.

- Financial risk - pricing risk, asset risk, currency risk, liquidity risk
- Operational risk - Customer satisfaction, Product failure, Integrity, Reputational risk; Internal Poaching; Knowledge drain
- Strategic risks - Competition, Social trend, Capital availability

CAS (2003) identified seven risk management processes that are vital in the ERM implementation and value creation for stakeholders, and which are quite similar to the AS/NZS 4360:2004 framework's eight core components:

1) Establish the context
2) Identify risks
3) Analyze/quantify risks
4) Integrate risks
5) Assess/prioritize risks
6) Treat/exploit
7) Monitoring and review

Risk and Insurance Management Society (RIMS) Risk Maturity Model (RMM) framework. The RIMS Risk Maturity Model was published in 2008 by the Risk and Insurance Management Society by the main developer Steven Minsky. RIMS states that *ERM is a strategic business discipline that supports the achievement of an organization's objectives by addressing the full spectrum of its risks and managing the combined impact of those risks as an interrelated risk portfolio* (Bromiley et al. 2015. 267). The model has been quite popular, as over 2,400 organizations have implemented their ERM systems with the RIMS Risk Maturity Model (Minsky & Fox: 2015: 4).

The RMM framework is a collective framework for ERM as it covers, among others, ISO 31000, COSO, FERMA, and Solvency II standards. RMM provides the content and methodology for effective and well-managed ERM. The RMM model is built of seven attributes that are divided into 25 competency drivers that comprise ERM's value and usefulness for an organization. The seven attributes are (Minsky & Fox 2015: 10):

1) Adoption of ERM-based approach
2) ERM process management

3) Risk appetite management
4) Root cause discipline
5) Uncovering risks
6) Performance management
7) Business resiliency and sustainability

2.5. Critique on ERM frameworks

The advance of risk management has been an essential counterforce to the fact that the corporate business world has evolved riskier and more complicated, as measured by several ERM survey studies, and leading to more demanding environments where organizations currently operate (see Beasley 2015; Powers 2004). Critique on ERM implementation has also been vocal, especially after the global financial crisis of 2008 that began in the United States already in 2007 as a systematical failure of risk management in the real estate and financial sectors. For example, Countrywide Mortgage, which had implemented an ERM system, was praised for this feat in 2007 by the Institute of Internal Auditors (IIA), faced bankruptcy as quickly as in 2008 (Bromiley et al. 2015: 265).

Even before the financial crisis, there were critical voices on the ERM concepts. Powers (2004) summarizes that the academic critique that is mostly concentrated on the issues of:

- The rise of the secondary (or reputational) risk management.
- Ascending costs of compliance, internal control, corporate governance and thus, enterprise risk management.
- Legalization of organizational environment.
- Emergence of "hyper-internal control".

The primary risk management is usually considered as risks to health, financial and physical security of an organization. Power (2004: 24) also sees the secondary level of risk management, the reputational risk management that is a need to manage the intangibles, not the entity. The typical critique of any systematic approach of risk management in SMEs is based on the cost load of implementing an ERM system, or any systemic way to comply with external requirements of implementing the compliance aspects of business. Therefore, ERM

could be seen as another "management fad" that increases the load of internal control and corporate governance (Power 20014: 24). The legalization of organizational environment means the pervasion of rules based style of management culture that internally amplifies the imagined legal risks and increases the avoidance of responsibility and formal modes of compliance. The "hyper-internal control" (Power 2004) is a derivative of secondary risk management that leads to excessive control systems that uses the resources of organizational actors, mostly management, and their agents.

Many implementing firms have recognized the lack of sufficient information on the actual implementation of ERM, and the ensuing management of the ERM processes. Fraser et al. (2008) surveyed the risk managers and found several common critical views on ERM, supporting the contingency theory angle of ERM implementation and research. Surprisingly, in their sample, the COSO ERM framework was not being considered and used as the key framework and source for guidance for ERM implementation. Also, new implementers may remain challenged, especially when specific guidance is needed in the cultural context of their businesses. Fraser et al. (2008: 84) also found that *risk executives are looking for more practical "how to's", sharing experiences, impacts of different corporate culture, and best practices at the different stages of ERM implementation*. These obstacles are even more acute in the context of SMEs.

Power (2009: 849) goes even further in the criticism towards the basic elements of ERM and suggests that *an impoverished conception of 'risk appetite' is part of the 'intellectual failure' at the heart of the financial crisis*. Before the financial crisis there were "near theological belief in ERM", although very capable people were involved in the operationalization of ERM systems, including the supervision of regulatory intelligence that did not understand the limitations of ERM. Power (2009: 850) divides the conceptual problems into three categories:

1) **Risk enterprising and appetising**. The concept of risk appetite in the build-up of 'risk enterprising' focuses too much on capital, rather than human behaviouristics that is the source for 'intellectual failure'.
2) **Deep complicity of ERM**. The detailed process-based rules for risk management is normally assumed to be a defect of implementation, yet accounting ideals of internal control are embedded in the design itself,

resulting in a risk management practice with wide and expansive reach – the risk management of everything (Power 2004). ERM becomes a design which strongly reproduces the accountants' conception of what matters (Power 2009: 851).

3) **Expensiveness and incapability to comprehend risks involved with interconnectedness**. ERM structure designs may just create an illusion of control with high implementation costs, and the designs are vulnerable to interconnected, macro-level risks, especially "unknown unknowns".

Lam (2003) states that existing ERM standards, such as the COSO ERM framework, are a good starting point for an enterprise, but they usually need to develop a customized framework that suits their distinctive business and risk management needs, also as the contingency theory suggests, the businesses have different premises to begin the implementation. For most companies, the implementation of ERM means a multiyear strategic process that requires constant top management support and investment in personnel as well as IT systems (Lam 2003: 45). Also, it's worth noticing that businesses, as well as people, have different appetites for risk – they feel comfortable with varying amounts of risk, and categories of risk (Lam 2003: 28). This is especially true within the space of SMEs that struggle to find the resources to improve their internal control and risk management activities. While larger enterprises are able organize specialized teams of risk management professionals, SMEs may only assign certain people to be responsible for managing the firm's ERM processes (Moeller 2007: 22).

3. **THE RELATIONSHIPS BETWEEN FIRM CHARACTERISTICS, DEGREE OF ENTERPRISE RISK MANAGEMENT IMPLEMENTATION AND DEBT FINANCING ACCESS**

This chapter presents the theoretical foundations for the research questions and based on them, develops detailed research hypotheses for empirical testing. The chapter is divided into the literature discussion of related associations of firm characteristics, degree of ERM implementation and debt financing access and then a research hypothesis regarding the relationships are presented. All the hypotheses presented are reviewed in the light of the current literature, previous research and contingency theory in the general SME context. Bromiley et al. (2015: 265) state that *academic research on ERM is still in its infancy, with articles largely in accounting and finance journals but rarely in management journals*. ERM literature has basically been almost non-existent before the millennium, but after the introduction of COSO ERM in 2004 the number of research has started to grow, as several literature reviews summarize (Gatzert & Martin 2013; Falkner & Hiebl 2015; Bromiley et al. 2015).

First, the target of this chapter is to discuss the research questions related to the characteristics of SMEs that are preconditions of the ERM adaption and implementation and to create hypotheses on the relations of these contingencies (size, sector, ownership) and the measured degree of ERM implementation. Furthermore, the current tendency is that the credit rating agencies all over the world evaluate the level and effectiveness of organization's risk management processes as part of the credit rating evaluation processes (Beasley et al. 2015: 220). This tendency is evidently also affecting the debt evaluations of SMEs as the banks create their own internal credit rating methodologies.

The new regulations of credit agencies, financial supervisors and institutions are additional financing obstacles especially for large international corporations, but there are clear implications for more bureaucratic, regulated, risk avoiding and time-consuming processes for SMEs on the national-level as well. These processes lead inevitably to increasing costs of bank lending via wider loan margins and via additional collateral requirements and collateral values (Yritysrahoituskysely 2013). The second target is to discuss these issues regarding the debt financing access of SMEs and its relation to the degree of ERM implementation of the surveyed Finnish SMEs. It is important to remember that SMEs are

viewed by the current literature as being highly dependent on external finance, and accordingly, rely on debt instruments as the main source of financing (Faulkner & Hiebl 2015: 125).

3.1.   ERM in small and medium-sized enterprises

European Commission (2005) states that *micro, small and medium-sized enterprises (SMEs) are the engine of the European economy and they are an essential source of jobs, create entrepreneurial spirit and innovation in the EU and are thus crucial for fostering competitiveness and employment*. Although the notified importance of SMEs for the economies the risk management issues of SMEs are rarely being discussed in the public as SMEs are unlikely source of systemic risk. Falkner & Hiebl (2015) found in their wide literature analysis that the risk management processes in SMEs are having heightened importance, and that the characteristics of SME owners have a significant impact on the business strategies, and hence, control systems such as ERM supporting the hypotheses three of this study.

Small and Medium-sized enterprise (SME) is a definition of company size. The definition differs within the national legislation of European countries. EU Commission recommendation 2003/361/EC (European Commission 2003) defines SME in relation to staff headcount and either turnover or balance sheet total as described in the Table 3. The EU commission recommendation states that a company is categorized as medium-sized if staff headcount is less than 250 and turnover is less or equal to 50 m€ or balance sheet total is equal or less than 43 m€. Company is considered small if staff headcount is less than 50 and turnover is less or equal to 10 m€ or balance sheet total is less or equal to 10 m€.

Within the recommendation is also a category for micro-sized companies based on the same properties. A company is micro-sized if staff headcount is less than 10 and turnover is less or equal to 2 m€ or balance sheet total is less or equal to 2 m€. This study does not include micro-sized companies within the surveyed companies. However, the respondents of the survey have been able to identify themselves as a micro-sized company, because the size category of a firm may have changed prior to the response. These clearly invalid responses have been moved from the final research data set.

Table 3. Definition of company categories by size.

Enterprise category	Headcount by Annual Work Unit	Annual turnover		Annual balance sheet total
Micro	< 10	≤ €2m	or	≤ €2m
Small	10 - 49	≤ €10m	or	≤ €10m
Medium	50 - 249	≤ €50m	or	≤ €43m
Large	> 250	> €50m	or	> €43m

The essential problem with ERM and SMEs are the scarce resources that usually are fully allocated to support the core functions of smaller businesses. Another thing is the cost effectiveness of any control system that is being implemented. However, to comply with laws, rules and regulations, the SMEs have to possess a positive view on risk management (Räikkönen 2002: 32–33). Moeller (2007) states that COSO ERM helps all organizations, whether small or large, to understand risk management, risk management environment and decision-making related to risk management, therefore making it possible and very sensible to implement a ERM system even in smaller organizations. Moeller (2007: 22) argues that risk management should always, whether a modern COSO ERM or an older traditional implementation framework, to concern at least a four-step process:

1) risk identification,
2) quantitative or qualitative assessment of the documented risks,
3) risk prioritization and response planning, and
4) risk monitoring.

One could argue that these steps are just a matter of common sense for even a smaller enterprise to implement, and even to document, to mitigate risks and seize the opportunities. Most SMEs implement components of COSO ERM without actually knowing that these actions are within a certain conceptual framework.

Heikkinen (2008) observed that ERM implementation is quite common in larger Finnish enterprises already in 2008, even before the heightening of the financial crises of 2008–2009. Within the 4 years prior to the study, the percentage of an ERM function and active ERM processes in place had increased from 17 to 69 percent. This detail supports the view that largest Finnish companies are following the international trend of more formalized and systematic risk management culture that is an integral part of their activities. Räikkönen (2002) states that qualitative, abstract risks and their management is increasingly becoming unpredictable and uncertain. Additionally, for SMEs the increasing regulative bureaucracy is limiting the possibilities for real value enhancing risk management activities. However, the risk management implementation is drastically different in SMEs than in larger organizations, often very reliant on organizational size, motivation of owners and ownership structure and the industry sector, as discussed in following chapters.

3.2. Research on ERM implementation and relation to debt financing access

Before the ERM implementation takes place, there is typically a lengthy process of adoption of an ERM framework, or a mixture of ERM frameworks (Lundqvist 2014). Prior studies have mainly registered ERM adoption based on the announcements of appointments of Chief Risk Officers (see e.g. Lam 2003; Liebenberg & Hoyt 2003; Daud et al. 2010). The methodology of CRO appointments has significant limitations. The processes to implement the ERM is a lengthy process and the degrees of maturity varies from firm to firm. Appointment of a CRO does not necessarily mean that an organization has truly started the ERM implementation. Another constraint of prior research is that researchers have typically not observed the degree to which firms have adopted the ERM. Prior studies have viewed the ERM adoption as a binary variable (either adoption or no adoption of ERM) and the degree of ERM implementation, as measured by the COSO ERM framework (see chapter 2.3), has not been properly examined (Ballantyne 2013: 20).

ERM has been targeted also by rating agencies as a number of additional drivers for ERM have emerged. Standard and Poor's (S&P) and Moody's particularly are the credit agencies, which include assessments of ERM in their methodologies (Fraser & Simkins 2016: 690). Since 2007, S&P has included a risk management rating as a key factor in its overall rating of insurance companies. This index aims at assessing the risk management culture, systems,

processes, and practices within the insurer. S&P assigns an "ERM rating" score over five categories, ranging from low levels of risk management sophistication (from one to three, indicating TRM) to high levels (indicating ERM). S&P has also introduced *ERM analysis into the corporate credit ratings process globally as a forward-looking, structured framework to evaluate management as a principal component in determining the overall business profile*. S&P has also stated that ERM provides *a new and clearer language for transferring information about management's intentions and capabilities, which are critical to credit evaluation.* (Bertinetti et al. 2013: 3.)

Already in 2004, Moody's announced that it will perform formal risk management assessments as part of the ratings process. The Moody's assessment framework addresses four key risk areas: Risk Governance, Risk Management, Risk Analysis and Quantification, and Risk Infrastructure and Intelligence (Ramirez & Simkins 2008: 583–584). The comprehensiveness of the organization's ERM techniques and the board's overall oversight effectiveness are sub-components of their ratings evaluation. (Beasley et al. 2015). Rating agency pressure has also been seen an important driver for ERM implementation according to the research literature (Ramirez & Simkins 2008).

ERM implementation is also driven by the stakeholder management and increasing stakeholder demands for risk transparency and communication of risk profile. Risk management adds value by supporting the overall economic growth by lowering the general cost of capital that is evident for individual companies (Lam 2003: 8). In the case study analyzing the benefits of ERM implementation in a Canadian electric utility company Hydro One it was observed that one of the most quantifiable benefits were to achieve lower cost of debt for the enterprise (Aabo et al. 2005: 72). This was being realized through achieving a higher debt rating and lower interest costs than expected. Ratings analysts stated ERM was a significant factor in the ratings process for Hydro One and it had an increasing effect on investor demand (the debt issue in case was heavily oversubscribed) and a decreasing effect on interest costs (Aabo et al. 2005: 72).

Insufficient resources, either financial, human, systems or data, is another major obstacle for ERM implementation. In the studies of corporate ERM practices (Gates 2006), the greatest obstacles to implementing ERM were termed as "competing priorities" and lack of resources. ERM implementation typically requires wide resources, considerable amount of time and it

should not be implemented "as a part-time job" (see Lam 2003). SMEs with more limited resources may need to rely on consultants for ERM design and supporting the initial implementation, as well as training the various stakeholders such as employees (Bowling & Rieger 2005).

3.3. Degree of ERM implementation

Measuring the degree of ERM implementation is not very straightforward. The ERM frameworks are derived from theoretical concepts of risk to provide usually quite vague guidance, suggesting various key principles of implementation, but details are left to the firms that are implementing ERM (Brustbauer 2016: 72). Some frameworks, as discussed in chapter 2.4, are more practice-oriented (e.g. CAS framework) and offer more precise tools for SME practioners of ERM. Although the theoretical guidances are useful for SMEs, many firms have the reality of implementation difficulties with little concrete guidance at the operational and at practical level. In the literature, the measurement of the degree of ERM implementation (or "ERM maturity" or "extent of ERM") various scales are being used, ranging from "no plans exist to implement ERM" to "complete ERM is in place" to capture applied ERM approaches (Beasley et al. 2005; Paape & Speklé 2012). Beasley et al. (2015) measure the level of ERM programs by examining the board of directors' and senior managements' internal processes that are associated with the maturity of ERM implementation programs. Kleffner et al. (2003) have measured the extent of implementation with survey data as a proxy, though not tying the questions on previous literature or any specific frameworks, while this research is examining the aspects of COSO ERM components implementation and how these components are applied in practice.

Research on Finnish ERM implementation, and the degree of implementation, is extremely limited. Few studies that cover the broad research area of ERM are mostly pro gradu -thesis or client surveys of consultancy agencies. Heikkinen (2008) notices in her pro gradu -thesis on Finnish corporations and their ERM practices that the firm size does not explain different levels of ERM implementation in the subset of large Finnish companies. One should notice that the sample of studied Finnish firms in this research was quite limited at 26. All in all, there is limited evidence that the size of the Finnish enterprises is associated with the degree

of ERM implementation, but naturally it is evident that the micro companies rarely implement any systematically governed ERM systems or any risk management methods.

Using the measurement of the degree of ERM implementation, this study examines the following critical research questions:

Research question 1:   Is the degree of ERM implementation dependent on the size of the organization?

Research question 2:   Is the degree of ERM implementation dependent on the industry sector of an organization?

Research question 3:   Is the degree of ERM implementation dependent on the quality of firm ownership?

Research question 4:   Are the experienced difficulties in debt financing dependent on the degree of ERM implementation?

Research question 5:   Are the terms and conditions of debt financing dependent on the degree of ERM implementation?

Research question 6:   Are the attitudes to alternative sources of debt dependent on the degree of ERM implementation?

3.4. The relationships between firm characteristics and the degree of ERM implementation

Is the degree of ERM implementation dependent on the size of the organization? Brustbauer (2016: 72) states that *the preconditions associated with ERM implementation, existing studies focus on firm size and sector affiliation, CRO appointment, auditor presence, financial leverage and ownership structure*. Of the characteristics (or preconditions) the effect of size on the extent of ERM implementation is one of the most researched relationships of the ERM literature (Golshan & Rasid 2012). On a wider accountancy context,

Chenhall (2003: 148–149) analyzes the effect of company size to the effectiveness of a management control system (MCS) designs in his classic contingency-based research on management control systems and states that the company size is contingent on the degree of implementation of MCS designs, such as an ERM system, and large organizations tend to have economies of scale to have more power in their operating environment. Chenhall proposes a hypothesis that *large organizations are associated with more diversified operations, formalization of procedures and specialization of functions*. The opposite hypothesis is obviously evident on SMEs and their operations, procedures and functions, such as ERM. Kleffner et al. (2003) state that larger firms would be more likely to adopt and implement ERM due to the need for a comprehensive risk management strategy. Bertinetti et al. (2013) have made the similar discoveries in the context of large European corporations.

Colquitt et al. (1999) found that large firms are more likely to adopt risk management processes that are integrated and comprehensive than smaller firms. Paape & Speklé (2012) examined organizations headquartered in the Netherlands, also SMEs, suggesting that the factors that are associated with ERM implementation are similar across different national contexts, mainly the studies based on US and Canadian data. The larger organizations, especially on the financial sector, tend to have more sophisticated (i.e. higher level) ERM systems. Beasley et al. (2005: 524) explain the extent of ERM implementation is dependent on the larger size of the organization, and as the size of organizations increase, the scope of threatening events is likely to differ in nature, timing, and extent. Therefore, there is a greater need for more effective ERM techniques for larger entities that may have greater ability to implement ERM, because they have extended resources. Also, Pagach & Warr (2011) found that larger firms are more likely to adopt and implement an ERM system, as identified by hiring a CRO. Based on the strong support by the ERM literature the following hypothesis is conducted:

Hypothesis 1 (H1): The larger size of the firm is positively associated with the degree of ERM implementation.

Is the degree of ERM implementation dependent on the industry sector of an organization?
Evidence suggests that certain industries are more likely to implement ERM systems than others (Beasley et al. 2005: 525). Colquitt et al. (1999), Kleffner et al. (2003) and Beasley et

al. (2005) found that level of ERM implementation is different for different industries, and firms in the financial sector, had ERM framework in place or plan to implement one, although these earliest contingency studies were conducted in developing years of ERM frameworks. Banks have been leaders in ERM adoption due to the emphasis on risk management in upcoming global regulation (Basel III) to address the problems with strict capital requirements, while the U.S. Dodd-Frank legislation requires the creation of board risk committees for large financial institutions (Beasley et al. 2015). The financial sector enterprises have had a tremendous change in their businesses. Most of the banks have evolved from traditional depositors to financial conglomerates that have several business lines and diversified exposure. Businesses that appear in these financial conglomerates include bank insurance, assets management, investment advisory and the bank services and products, jointly labelled as financial services. Business divisions differ in their risk profiles and require different organizational control capacities, which is most suitably managed with enterprise-wide risk management (Rodriguez & Edwards 2009: 2).

The insurance sector has the longest history of processing and implementing systematic risk management, and therefore, numerous risk management studies on insurance sector have followed, particularly to prepare for the Solvency II regulation. Risk management is also seen as the primary function of insurance companies (Acharyya 2009: 3). Therefore, major risk management consultancy Tillinghast-Towers Perrin (2004) stated that *insurers have come to recognize enterprise risk management as fundamental in creating and improving shareholder value through better risk-based decision making and capital allocation*. Yow and Sherris (2007) discuss the increasing importance of ERM for insurers and reinsurers through the risk management strategies that are linked to the usage of economic capital measures for decision making, thus emphasizing the importance of integrated and holistic risk management.

Given the special regulatory bias on risk oversight and risk management in the banking and financial services industries, there is an automatic assumption that the quality of ERM implementation is clearly higher and that the ERM is developing towards a system that increases value of the business. As discussed before, the largest rating agencies such as Moody's and S&P evaluate whether a company has a functioning ERM system in their ratings methodology for financial institutions and insurance companies, implying the significant importance of ERM for these industries (Ramirez & Simkins 2008: 583). However, Beasley

et al. (2015) did not find support for this hypothesis as they observed a marked difference in the non-financial services firms than for financial services firms. Beasley et al. attributed these findings to the possibility that the ERM has only been implemented in name only, due to the lower quality of implementation. For the heavily regulated financial services firms of their sample, institutional theory may explain many of the observed ERM adoptions. This same observation was evident during the aftermath of the financial crisis of 2008–2009. However, in the European context, Paape & Speklé (2012) found a strong relationship of the financial services sector and the more sophisticated, higher quality, ERM implementation. Therefore, the following hypothesis is conducted:

Hypothesis 2 (H2): The firms in financial services and insurance sectors have higher degree of ERM implementation.

Is the degree of ERM implementation dependent on the quality of firm ownership? The implementation of ERM cannot succeed without strong support from owners and their awareness of the value of ERM (Beasley et al. 2005; Brustbauer & Peters 2013). Accordingly, where an owner-manager has a controlling position or where there is no professional managers, ERM implementation level is likely to be lower (Brustbauer 2016: 73–74). Paape & Speklé (2012) observed that owner-managed firms are less prone to invest in ERM. Kleffner et al. (2003) observed that ERM approaches become more sophisticated with increasing size, institutional ownership and board encouragement and independence, i.e. non-family companies.

The research by Desender (2007) revealed that the firms with an independent board and a separation of CEO and chairman show the highest level of ERM, as the agency theory suggests, implying that the family-owned businesses that usually carry the key positions operationally and in the board of directors, have a lower level of ERM implantation in place. Heikkinen (2008) noticed in her research on Finnish corporations and their ERM practices that the publicly listed companies, being subject to wider array of stakeholder pressures and more stringent regulation for risk management than privately-held non-listed companies, have more advanced ERM practices. Consistently, Beasley et al.'s (2005) study revealed that independence of the board of directors affects positively to the maturity of ERM implementation. Golshan & Rasid (2012) also concluded that according to the ERM

literature, the independency of the board of directors from the management team of an organization is a deciding factor of ERM implementation throughout the organization. This supports the view that the degree of ERM implementation is lower when there are low probabilities of interest conflicts between the owners and operational management, as is the case in the family-owned business. Brustbauer (2016: 79) found several statistically significant relationships between ERM implementation items and non-family firms that were more likely to implement ERM methods.

To use the family-ownership as a proxy for the independence of the board as well as for the status of "family-firm", the third hypothesis is formulated as:

Hypothesis 3 (H3): The family-ownership of the firm is negatively associated with the degree of ERM implementation.

3.5. The relationships between the degree of ERM implementation and debt financing access

Are the experienced difficulties in debt financing dependent on the degree of ERM implementation? SMEs differ from large corporations in their credit risk with riskier, lower asset correlations and therefore banks should consider qualitative variables when setting internal systems, such as credit assessment, and procedures to manage credit risk (Gama & Geraldes 2012: 727). Moeller (2007: 24–25) exhibits a business risk model framework that categorizes major risk areas that may impact the enterprise. The area of finance risks is divided into:

1) treasury risks,
2) credit risks and
3) trading risks,

and the credit risks further into:

1) capacity risk
2) collateral risk,

3) concentration risk,
4) default risk and
5) settlement risk.

The risk model framework example by Moeller (2007: 25) indicate that enterprises should apply risk frameworks that suit their particular needs, as the contingency theory suggests and that they face credit risks and difficulties in credit financing that are usually very company-specific in nature. In the SME context, several risks have been highlighted by the FFE and the SME surveys on access to debt financing (see Yritysrahoituskysely 2013), and they are mostly related to the availability of debt financing either via banks or alternative sources (e.g. pension insurers, debt funds or specialized bridge financiers) and deviations from the repayment plans of the debt agreements. The current trend of highlighting these risks via more formal and robust credit assessment policies of the banks that take into account the implementation of formal risk managements systems are being seen an increasing factor of SME debt financing difficulties. Andersson and Mislimi (2013) found that ERM has a positive relationship with a company's credit rating. This indicates that companies that have an efficient risk management have a higher creditworthiness than companies without one, thus the degree of ERM implementation decreases the difficulties of SMEs in debt financing. Therefore, the fourth hypothesis is formulated as:

Hypothesis 4 (H4): The higher degree of ERM implementation is negatively associated with difficulties in debt financing.

Are the terms and conditions of debt financing dependent on the degree of ERM implementation? Heikkinen (2008) noticed in her research on Finnish corporations and their ERM practices that the larger companies reported very scarcely to regard ERM implementation as a clear benefit for their cost of capital. In fact, only 7 % of respondents within larger Finnish firms with advanced ERM practices and high degree of implementation perceived the lower cost of capital as a benefit of their ERM process. This could imply that in the context of larger, usually publicly listed companies, the debt financing is basically "guaranteed" without the ERM implementation process and the following possible positive effects on credit ratings and therefore, cost of capital. The terms and conditions are generally

accepted as determinants of the cost of debt financing capital. The surveyed terms and conditions in this research are:

1) level of interest rate margin,
2) requirements of new loan covenants,
3) valuation changes of debt collateral,
4) changes of collateral requirements and
5) costs related to the debt guarantees.

Of these terms and conditions, the interest rates, related interest rate margins and their development into either positive (lower) or negative (higher) territory are seen the major factors determining the SME debt financing access, in other words the access is related to the "acceptable" pricing of debt financing (Falkner & Hiebl 2015: 125). Since SMEs are viewed by the current literature as being highly dependent on external finance, bank loans are typically the main source of external financing available (Gama & Geraldes 2012). Usually these loans are not fixed rate loans, or SMEs rarely are able to hedge the interest rate risk, so the typical bank loans involve the risk that interest rates on the loans may change (i.e. interest rate risk), and also, with the increasing requirements by the regulators, the risk that the interest rate margins applied by banks are able to rise increasing the cost of debt capital (Falkner & Hiebl 2015: 125). By examining the standpoint of banks, Mutezo (2013) suggested that SMEs can decrease the fears of credit institutions concerning any information asymmetries and, thus, perceptions of credit institutions of SME risk, which might, in turn, also limit the likelihood of SME interest rates changing. In other words, the higher degree of ERM systems affect the credit institutions' views on acceptable interest rate margins on specific client organizations.

Bruns & Fletcher (2008) found that SMEs with limited collateral are unlikely to be accepted as loan recipients, regardless of their willingness to take risks. On the other hand, the companies with high levels of quality collateral have a high probability being granted a loan, when their willingness to take risk is low. The finding by Bruns & Fletcher (2008) suggests that strong collateral cannot compensate for the negative aspects of high risk-taking, also implying that the level of high risk-taking is related to the low level of risk management, and thus heightened risk appetite. This has direct effects on the collateral requirement levels, as well as costs related to the cost of possible debt guarantees.

The study by Vickery (2008) found that SMEs are about twice as likely to decide on a fixed-rate (rather than an adjustable-rate) loan as large firms. Further, fixed-term loans are particularly popular among smaller, younger companies with low cash flow or high investment opportunities (Vickery 2008). Thus, SMEs are more averse to interest rate risk than larger firms. Falkner & Hiebl (2015: 130) suggest a potential explanation: because SMEs have less matured risk management activities than larger companies, it is particularly important for them to have a controlled situation where variable interest rates are associated with a significant interest rate risk.

The corporations of any size have interest to hold strong credit ratings, whether publicly rated by credit agencies or internally formulated by credit institutions. A decline in credit ratings lead to the higher borrowing costs, eventually. As the Markowitz Portfolio Theory suggests, the shareholders may bear indirect costs associated with the impact of lower-tail outcomes on other stakeholders. Management and employees have their positions that can be regards as "undiversifiable stakes" in the firm. Therefore, in the case of disastrous lower-tail events, and the cost is individually higher despite the low probability. Assuming there is efficient labour market in place, employees will demand higher compensation for the risk position, and higher levels of employee compensation will eventually lead to lower earnings for shareholders (Beasley et al. 2008: 316), thus encouraging higher degree of risk management activities. Therefore, the fifth hypothesis is formulated as:

Hypothesis 5 (H5): The higher degree of ERM implementation is positively associated with better terms and conditions of debt financing.

Are the attitudes to alternative sources of debt dependent on the degree of ERM implementation? The access to debt financing has become more and more difficult for Finnish SMEs in the recent years. The proportion of SMEs that have failed in their access to debt capital has been increasing in the Finnish economy, and a growing number of companies have abandoned their efforts to raise financing via traditional credit market (Yritysrahoituskysely 2013: 4). However, the variety of choices for SMEs are expanding rapidly. Growing number of larger corporations are accessing debt via commercial paper ("CP") and debentures. Even micro firms are more frequently accessing the debt market via

private equity funds and micro credit institutions. All these sources may be labelled as "alternative sources of debt".

Adopting the SMEs' view, the alternative sources of debt are used to strengthen and diversify the debt portfolio of a firm and presenting a stronger balance sheet, and therefore suggesting a stronger financial position can, at least partially, compensate for higher risk tolerance (Falkner & Hiebl 2015: 130). A qualitative study by Bruns & Fletcher (2008) found that SMEs with a weak financial position and high level of risk appetite have lower probability of credit offers than companies with stronger financial position, thus suggesting a need for alternative sources of debt to fill the gaps, and enabling the access to debt financing. The sixth, and last, hypothesis is formulated to test the relation of higher degree of ERM implementation to the positive attitudes, therefore enabling views, to alternative sources of debt:

Hypothesis 6 (H6): The higher degree of ERM implementation is positively associated with positive attitudes to alternative sources of debt.

The relationships between the three sets of sum variables – the characteristics of SMEs, the degree of ERM implementation and access to debt financing – are examined in this research. Hypotheses 1–3 examine the relationships between the characteristics of SMEs and the degree of ERM implementation. Hypothesis 4–6 focus on the relationship between the degree of ERM implementation and the access to debt financing. Relationships are analyzed independently of each other and operationalizations of each variable are executed as described in chapter four. The objective of the statistical analysis is to study which of the relationships are significant, and beyond that derive analytical discussion and conclusions from these statistical analyses.

4.   METHODOLOGY AND RESEARCH DESIGN

The fourth chapter of this study explains the applied methodology and the reasoning for the methodological choices for collecting the data and testing of the hypotheses empirically in the context of the Finnish SMEs. The survey design is presented as well as the selection of the final sample of surveyed SMEs. The COSO ERM framework (2004b) is used to define relevant control and risk management procedures and derive an aggregate ERM measurement from these observations. This study is on some aspect an explanatory research by nature, as the research is conducted for a problem that has not been studied more clearly. Exploratory research helps determine the best research design, data-collection method and selection of subjects (Fisher 2004: 134). Definitive conclusions should be drawn with caution, which is the case in the research of ERM and SMEs, because only very limited set of relevant research literature exists. This research also studies a case of Finnish SMEs that is a small subset of companies in the risk management context, and purpose of this research is to collect comprehensive data on this case to explain the phenomenon more accurately (Metsämuuronen 2001b: 16–17).

Within the context of SMEs it is evident that there are more barriers to develop and implement a robust, systematic processes to oversee an entity's most significant risk exposures than in larger, often publicly listed, enterprises. The most recent report and survey study on American enterprises and their ERM practices (Beasley, Branson & Hancock 2016: 25–26) notice that the primary barriers of ERM approach implementation are *competing priorities, insufficient resources, lack of perceived value, perception ERM adds bureaucracy, lack of board or senior executive leadership and legal or regulatory barriers*. Although the survey conducted by Beasley et al. (2016) is emphasizing on larger enterprises of the AICPA's Business and industry group, these barriers are also taken into consideration when compiling the eventual survey questionnaire of this research. The abovementioned barriers of implementation may also be derived from the ERM literature addressing the features of ERM implementation within SMEs that is featured in the chapter three of this study.

The application of COSO ERM framework has also some limitations that result from the realities of SMEs in general. COSO (2004a) reminds that the eight components of the framework will not function identically in every entity and states that *application in small and mid-size entities, for example, may be less formal and less structured*, but *nonetheless,*

small entities still can have effective enterprise risk management, as long as each of the components is present and functioning properly. As this research applies the COSO framework as the primary source of the survey structure, all these eight components are addressed within the survey questionnaire to examine the level of ERM implementation within the Finnish SMEs. Beasley et al. (2015) explains the level of ERM implementation being as ERM maturity that in their research context refers to the overall level of sophistication, robustness, stage of implementation of the ERM program as a whole. In this study, the term ERM implementation is being preferred.

The COSO ERM framework consists of three dimensions, and the third dimension of the "COSO ERM cube" (see Figure 4) is basically relevant only for the larger organizations that are divided into "divisions", "business units" and "subsidiaries" (see e.g. Falkner & Hiebl 2015: 122–123). The SMEs are occasionally organized into multiple layers, therefore making it irrelevant to conduct the study on the third dimension with aspect to different organizational layers. The components of compliance and reporting have limited coverage of survey questions that is due to the expected limited resources of SMEs regarding the capabilities of reporting and compliance.

The manifest variables in this study, or directly measured variables, are the industry sector affiliation and the ownership measure of either family or non-family enterprise. The other variables are not directly observed, but are rather inferred (through a certain formula) from other variables that are observed and directly measured from the results of the survey.

The questionnaire comprises four sections, divided into ten questionnaire web pages to psychologically ease the respondent's task to fulfill the questionnaire by splitting it up to smaller entities; the first section involves questions about the current state of the risk environment, ERM activity and growth orientation. The second section is divided into four parts, each scrutinizing the four COSO ERM framework achievement objects and the third section emphasizes on questions related to the current state of the firm's debt financing access. The last set of questions are for the purposes of studying the characteristics, qualities and background information of the respondents and their represented business. Items in the first and second sections are in the form of five-point or seven-point Likert scales, which are considered as interval data. The third section is comprised of three-point and five-point Likert scale questions and two polar (yes-no) questions. Therefore, in total the survey respondents

completed an Internet survey template consisting of 42 questions that sought information about various aspects of ERM style of risk management issues, firms' relation to debt capital and firm characteristics within respondents' organizations (see Appendix 4).

All survey responses were anonymous and all data used in this study, including individual company information such as firm size and the industry sector of the business organization, were self-reported by the survey participants and could not be independently verified. Despite the limitations, the responses obtained provide information about internal processes at the top management level (and possibly at the board level) that are associated with maturity of ERM implementation.

To be able to identify applied ERM approaches within the sample, a cluster analysis is conducted by using a non-hierarchical clustering technique to achieve a targeted statistical classification to find subsets within the sample. After finding out the two clusters – active and passive ERM implementers – multivariate analysis of variance (MANOVA) and analyses of variance (ANOVA) are conducted to investigate whether there are differences in ERM classifying items (i.e. survey questions regarding the degree of ERM implementation), objectives items and ERMISME measure that can be ascribed to size, sector and ownership structure. Mann-Whitney U-test is applied when the presumptions of ANOVA do not hold. Similar methods are being conducted to examine the relationships between the variables of debt financing access and the degree of ERM implementation.

4.1. Survey design

The method of survey research used in this study is designed to discover the qualities of the sample of the Finnish SME population, and more importantly, to test the hypothesis and the associations of the hypothesis to answer the key research questions. The aim of this research is to examine the relationships between ERM implementation and certain firm characteristics (preconditions), to examine whether any clusters measured by their ERM maturity (level of ERM implementation) can be formed from the sample surveyed and whether these clusters differ meaningfully from each other when measured by their level of debt market access. A cross-sectional study design, which is a type of observational study, is being used to analyze

the collected survey data from the Finnish SME population at the certain point in time, which in this particular research case that is March 2017.

This survey research has been executed in co-operation with the Federation of Finnish Enterprises ("FFE", "Suomen Yrittäjät") and their research department. The targeted group of FFE members have given their pre-approval to FFE research department to approach them with surveys that study the different aspects of Finnish entrepreneurship and business. FFE has the largest membership of all business-related federations in Finland. The membership consists of more than 105,000 enterprises of all sizes, from all geographical areas of Finland, and encompasses the entire business spectrum. The membership structure provides a good reflection of the structure of Finnish businesses as a whole with emphasis on to improve the environment that SMEs operate in. FFE and especially the research department also provides information to the public to help influence opinions and raise public awareness of entrepreneurship in Finland.

A survey instrument using e-mail and Internet web page was being used to collect the data for this study. Webropol Internet survey tool was being employed to conduct the survey. The first e-mail (see Appendix 1) was sent to the members of the FFE that have given their approval to be recipients of certain member surveys that usually include surveys on the current issues that are related to the important interest of the whole Finnish enterprise community. The total number of recipients of this first survey email, as well as of the following e-mails reminding of the recipients of this survey, were 1.636 members of the FFE. The first e-mail contained the information of the study in a compact form with motivational words to encourage the recipients to participate in the survey by filling out the survey questionnaire. Most importantly the e-mail included the highlighted URL link that directs the participant to the front page of the survey questionnaire Internet page.

There was no predetermined timetable for survey. The timetable was adjusted according to the frequency of received automated e-mails that notified single participants completed survey form. The first and second reminding e-mails (see Appendix 2 and 3) were sent to the participants after there were at least two days of zero response frequency (see Table 4 for the survey timetable) and when the personnel of the FFE thought it was suitable to approach their membership pool.

Table 4. Timetable of the web-based survey via Webropol survey engine.

Contact n:o	Description	Response option	Days
1.	E-mail with link to questionnaire	Web	0
2.	E-mail reminder	Web	13
3.	E-mail reminder	Web	20
	Closing day of the survey		24

The first reminding e-mail was sent on March 13th and the second reminder on March 20th, both increasing the response rate substantially, also visible in Table 5. A surprising peak in response rate on March 8th is expected to be due to the return of participants from their winter vacations in Southern Finland FFE districts. The final date to participate to the survey was announced in the second reminding e-mail and it was set to be March 24[th,] 2017. The survey link was closed immediately after the final date expired and the data was downloaded from the Webropol survey engine and saved in excel spreadsheets.

Table 5. Survey response frequency and accumulation (Daily response frequency (bar chart) on the left axis and accumulated response rate (line) on the right axis).

Daily survey response frequency and accumulation 1.3.-24.3.2017
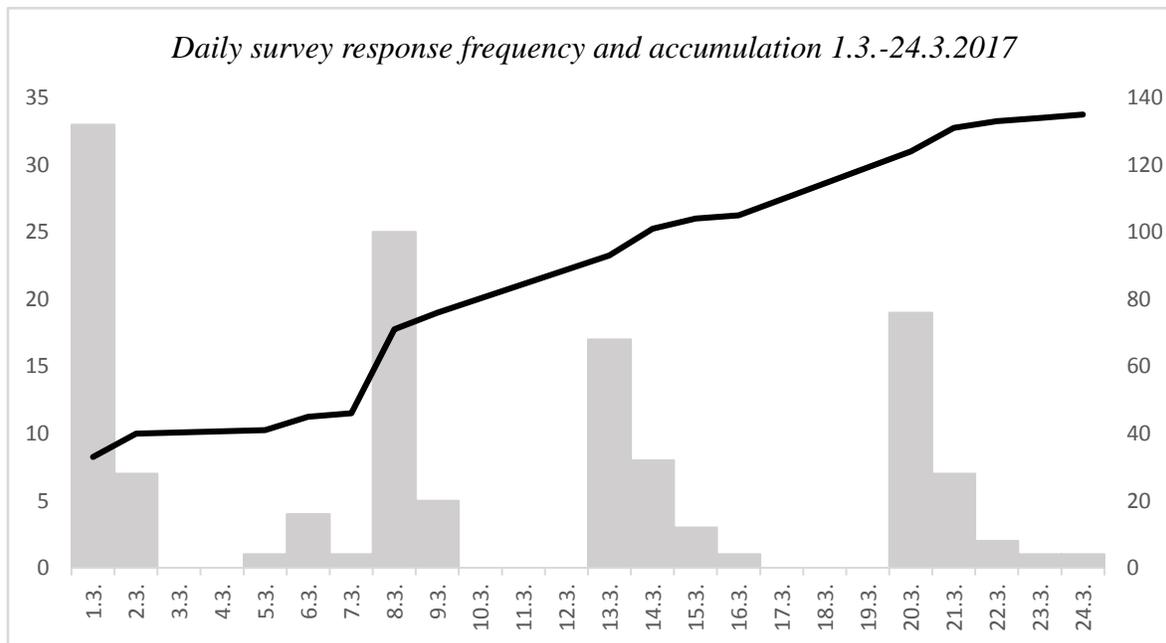
The Internet-based survey design is based on the basic principles of "Dillman's Tailored Design Method", where the surveys have qualities of (Dillman & Smyth 2007):

- Respondents see the questionnaire useful and easy to answer.
- The questionnaire provides explanations of how answering the survey.
- The response to survey would be useful to others.
- Establishing the legitimacy of the survey by providing contact information and creating trust that the survey results would be useful when the survey is completed.

Numerous details have been taken into consideration to improve the attractiveness of the survey questionnaire and make it easier to complete, however not compromising of the quality of received responses. The survey questionnaire form went through several quality checkpoints and pre-tests by academics, FFE research team and a SME CEO, mainly focusing on the wording and the validity of questions. To improve the validity and reliability of measures the employed survey questions mostly relied on earlier verified ERM survey research) of Brustbauer (2016), Beasley et al. (2016) and survey-based report on financing of the Finnish corporations (Yritysrahoituskysely 2013) that was conducted by Finnish public institutions, such as the Bank of Finland, Finnvera Plc, several trade unions and Ministry of Economic Affairs and Trade, together with FFE (see Appendix 4). Four questions in the questionnaire were derived from the original COSO (2004b) ERM report due to lack of relevant SME oriented questions to measure the implementation quality of several COSO framework components and sub-components (see Appendix 4 for questionnaire details). The questionnaire has four parts that cover the four objectives of achievement of the COSO ERM framework (COSO 2004a).

One should notice that survey based research has some problematic features. As ERM and the related terminology can be difficult to understand for persons who have not got acquainted with the ERM literature, the survey questions have been selected and, if necessary, modified for the use of "regular business people", in other words SME entrepreneurs and CEOs. To ensure the earnestness and seriousness of the respondents. Of course, misunderstandings regarding the survey questions do occur, and even some falsely submitted questionnaires do exist. To enhance the reliability of the research, some methods

have been applied to dispose these false responses or misunderstandings. The size of the sample and its implications to the reliability and validity are discussed in later chapters. Beasley et al. (2015: 227) describes well the similar survey situation in their research on the level of ERM implementation (ERM maturity). To help the respondents understand the term "enterprise risk management", the second phase of the survey contained the COSO definition of ERM in Finnish. The inclusion of this information helps to increase the focus of respondents on ERM processes and not any other definition of risk management systems. (Beasley et al. 2015).

Minor amendments to the questionnaire were made relative to the tested questions of similar survey studies. Also, inclusion of current topics in ERM and national credit market qualities have been considered in the same form as in the latest surveys on global corporations (Beasley et al. 2016) and in the report on the financing of Finnish corporations (2013). Beasley et al. (2015) have also observed the theoretical perspective, where institutional theory suggests that, *in the presence of these emerging expectations, regulations, and conceptual frameworks, many organizations may feel pressure to state that they have embraced and implemented ERM processes so that their organizations are in line with basic external expectations*. This phenomenon has been considered in the final selection of the examined sample, as discussed in chapter 4.2. This aspect can be meaningful in the early process phases of an ERM implementation and especially when there is the lack of implementation. In doing so, however, the examined SMEs may implement only minimal requirements of a selected ERM framework so that they seem to be compliant with the outside expectations. This may lead to a failure to implement specific necessary elements of an effective ERM oversight (Beasley et al. 2015).

4.2. Sample

The entire population of this research is the base of Finnish small and medium-sized enterprises. European Commission (2003) has defined the SMEs in its recommendation that came into force in 2005. According to Statistics Finland (2015) there are only 18 609 companies that can be categorized as either small or mid-sized, and their relative share from the total number of companies is only 5.1 %. As described before, the FFE consists of more than 105 000 Finnish companies, mostly micro-sized entrepreneurial firms, but they state "to

improve the environment that small and medium-sized enterprises operate in". The FFE has extensive research activities within the Finnish SME population. This study utilizes the survey infrastructure created and administered by the FFE research unit. Currently their list of survey recipients consists of 1 636 companies that have allowed to send them any survey material that aims to improve the quality of research in the context of Finnish SMEs. The total of 135 responses were received (see Table 5) and all questionnaires were filled perfectly.

The respondents comprised of 70 micro firms (fewer than 10 employees), 56 small firms (10–49 employees) and 7 medium firms (50–249 employees) and 2 large firms (250 employees or more); 88 respondents regarded their firm as a family-owned and 47 as non-family-owned firms. The respondent firms comprised of 50 services, 35 manufacturing and 12 construction firms. Of the respondents 17 firms labelled their business to belong into the group "other". After examining the group of "other" more closely, it was evident that the respondents were easily to be allocated to the pre-determined industry groups based on their business descriptions. Only 3 firms were lacking the more specific business description, and therefore, remained in the group of "other". For the details, see Appendix 5.

Table 6. Finnish companies by size and their relative shares of total.

Type	Amount	Share of total
Micro	340 870	94.7 %
Small	15 952	4.4 %
Midsize	2 657	0.7 %
Large	572	0.2 %
Total	360 051	100 %

Formulation of the final research sample was an evident process due to the observation of outliers in the response data. When the sample size is small the effects of outliers are imminent to the test results. An outlier is an observation that appears to deviate markedly from other observations in the sample. The unfitting respondents and outliers, i.e. outlying survey respondents in this study, have been deleted based on the following criteria:

- The firm clearly represents a micro-company, measured by EU criteria of 2005. 61 observations were deleted due to this criterion.
- The firm clearly represents a large company (more than 249 employees). 2 observations were deleted due to this criterion.
- The firm is not an independent SME. The independent firms are defined in the questionnaire as *firms whose capital or voting rights exceeding 25 % are not under control of one corporation, or jointly owned by such corporations, which cannot be defined as a SME or a small firm.* 9 observations were deleted due to this criterion.
- Outliers that seem to have exceptionally high ERMISME -values (see more on ERMISME in chapter 4.3.1) in relation to the size of the companies (see more on the measurement and variable of size in chapter 4.3). The assumption is that some of the respondents were presenting extremely robust risk management systems although their size was below average. 2 observations were deleted due to the criterion of very high relative value of ERMISME to the company size.

Table 7. Response pattern and exclusion of respondents from the final sample.

	Number of companies	*%*
Total number of the companies in the database	**1636**	**100 %**
Companies that returned completed questionnaires	135	8.3 %
The companies excluded from the sample after receiving their responses because:		
The companies were too small	61	3.7 %
The companies were too large	2	0.1 %
The SMEs were not independent	9	0.6 %
Outliers - based on too high ERMISME relative to company size	2	0.1 %
Final sample	**61**	**3.7 %**

By comparing the responses of all the respondents and the qualified respondents by the question number two in the questionnaire (*Does your company utilize an enterprise risk management (ERM) system, or some part of such a system?*) can be observed that the level of ERM maturity increases markedly. Before the exclusion, the mean value of the responses was 2.39, and after, the mean value increased to 2.71 implying that the maturity increased closer to "implementation decision has been made" -category (see the categories from Appendix 4 from the research questionnaire).

4.3. Construct operationalization

Hypothetical constructs that do not have their counterparts in the physical world, and that are tools for scientific thought, must be operationalized in the research, assign them a definition that is measurable (Metsämuuronen 2001a: 27). On the basis of the selected terms and definitions, a measure instrument is being shaped that is intended to measure the examined phenomenon. The reliability of the research is equal to the reliability of the measures, which is equal to the success of the construct operationalization (Metsämuuronen 2001a: 28). Extending the empirical research in any area, for example in survey-based ERM implementation studies, it is important to keep variables as constant as possible. Therefore, the constructs of the ERM implementation preconditions (size, industry and ownership) are made with the existing question instruments applied in earlier studies. The firm characteristics are measured with manifest variables (sector and ownership) or a four-point Likert scale questions (size).

The degree of ERM implementation, or the maturity of it, has been operationalized and measured in the literature using several approaches (Farrell & Gallagher 2014; Beasley et al. 2015; Oliva 2016 etc.). Brustbauer (2016) analyses "ERM activity" in SMEs along three dimensions: risk identification, risk assessment and risk monitoring. Each of these dimensions comprised four items, termed ERM classifying items according to COSO components (Brustbauer 2016: 75; COSO 2004b). This research also follows COSO categorization, not by choosing certain categories of COSO framework ERM components as Brustbauer (2016), but by focusing on the "achievement of objectives" angle of the COSO ERM framework and by choosing five questions for each COSO ERM objectives category,

each question representing a different COSO ERM component category, to have more diversified view on the degree of SME ERM implementation. These objectives and component categories have been discussed in more detail in chapter 2.1.1. These selected, ERM derived, questions are related both to the ERM literature and previous ERM related research that utilize the survey method (COSO 2004b; Beasley et al. 2016; Brustbauer 2016: 76) and are termed as ERM implementation items.

Variables of debt financing access are theoretical constructs and are measured with three-, five- and seven-point Likert scale based questions. The debt financing access, in other words the level of opportunity for a firm to bind debt finance agreements, has also been operationalized and measured in the literature using several approaches (see e.g. Altman, Sabato & Wilson 2010; Andersson & Mislimi 2013). The survey questions in this research that are related to the debt financing access are imitating the Finnish enterprise financing survey (Yritysrahoituskysely 2013), which increases the validity, reliability and comparability of the survey items and measures inducing better construct operationalization. The complete wording of the items and response alternatives is given in the survey questionnaire in Appendix 4.

Degree of enterprise risk management implementation is a theoretical construct and is measured with seven-point Likert scale based questions. Likert scales (invented by Rensis Likert) are a form of rating scale that is commonly used to ask people about their opinions and attitudes. The basic structure is to provide a series of statements, either positive or negative in tone, and to ask the respondent to choose a position on a scale between strongly agree and strongly disagree (Fisher 2004: 165). Brustbauer (2016) also applied the seven-point Likert scale, but the main difference between these scales is that Brustbauer has used the classical scale, with the mid-point of the scale as the zero-point ("4 – neither agree nor disagree"), which can also be called a negative-positive scale (1, 2, 3 = disagree, 4 = no opinion, 5, 6, 7 = agree). It measures two dimensions at the same time; does the respondent have an opinion (1, 2, 3, 5, 6, and 7) or not (4), and does the respondent disagree (1, 2, and 3) or agree (5, 6, and 7). This research applies a scale that is similar to Jokipii (2006: 74) and is called a positive-positive scale (1 = totally disagree, 2 = almost totally disagree, 3 = a slightly inclined to agree, 4 = agree to an extent, 5 = almost agree, 6 = almost totally agree, 7 = totally agree) which is actually an interval scale. This enables this research to avoid the

possible interpretation problems in the middle of the scale (such as: 3 = no opinion) and measure only one ERM objective dimension at a time (Jokipii 2016: 74).

The size of the organization has been measured by alternative surrogates of number of employees, annual turnover and size of the balance sheet. These three qualities of size are measured by the categorization of European Commission (2005) and the responses are numbered from 1 (lowest) to 4 (highest) to form a sum variable that describes the size of the sample unit. The lowest score in this measure is 4, because the firms that were in the lowest category (score of 3), were deleted from the final sample (see chapter 4.2.1). The highest score of the measure, 11 and 12, were deleted from the final sample as these observations were considered large corporations and not fitting the definition of SMEs. There were two observations that were deleted based on this exclusion criteria. The final sample is then divided into four size groups based on their score: 4, 5, 6 and 7 to 10. Respectively, the number of companies in these groups are 30, 11, 14 and 6.

The sector. The respondents had an opportunity to choose between eight different industry alternatives that were similar to the SIC-coded categorization of annual AICPA "State of Risk Oversight – an Overviews of Enterprise Risk Management Practices" survey research (Beasley et al. 2016: 5), expect for mining industry, which was omitted from the selection due to low probability of receiving responses from infrequent Finnish mining companies that fit the SME category. 17 respondents had chosen their main industry to be in the "other" category. 16 of these 17 respondents had described the main industry with few words, and based on those descriptions, 14 responding companies could be included in the eight predetermined industry categories. Three of the responding companies were left in the "other" category. One firm remained in the "other" due lack of additional description and two firms were considered as "other" due to respondent's vague industry description, which fit several categories, not just one. In the final sample, there was only 1 firm in the "other" category (see Appendices 5 and 6 for descriptive statistics of sectors).

Operating sector affects ERM implementation as, on the one hand, regulated industries have been at the forefront of ERM implementation, for example, financial industry (Beasley et al. 2005) and insurance industry. The real estate management industry is closely related to financial sector due to importance of financing and high level of regulation. Based on the above, it seems reasonable to assume that the respondents whose sector is *Finance, Insurance*

and Real Estate are considered to be in the regulated industries that embrace and require systematic risk management procedures in the from ERM system. Furthermore, these sectors are considered very competitive that is another quality that should be positively related to the need for ERM (e.g., see Casualty Actuarial Society 2003: 8–10). Therefore, the greater the level of competition for sales in an industry, the more valuable an ERM system should be for a firm within that industry (Gordon et al. 2009: 304).

The ownership structure. The implementation of ERM cannot succeed without strong support from owners and owners' attention to its value (Beasley et al. 2005; Brustbauer & Peters 2013). Accordingly, where an owner-manager has a controlling position or where there is no professional manager, level of ERM implementation is probably lower, especially in the family-owned companies (Paape & Speklé, 2012). The respondents are given the definition of a family-owned companies. The definition is not precise, but it is widely being used and based on the definitions of European Commission (2005) and in this study the family-owned business is defined as *an enterprise, where one family owns at least 51 percent of stock outstanding, have the majority of controlling position and the owners have responsibility on day-to-day operations of the firm*. This definition describes well the non-independency of the board members that is seen as a weak precondition for ERM implementation and implementation maturity.

4.3.1. Enterprise Risk Management Index for Small and Medium-sized Enterprises – ERMISME

Enterprise Risk Management Index for SMEs (ERMISME) is an operationalized measure for this study to find out the degree of enterprise risk management implementation. Studies of ERM usually lack the specifications how to quantitatively measure the ERM concept (Gordon et al. 2009: 309). As Gordon et al. (2009) has presented earlier, this research develops an ERM Index for SMEs ("ERMISME") for measuring a firm's ERM that is being implemented. The Index is based on COSO's four objectives of ERM that are being studied in the survey research via 20 research questions. In other words, an index of the degree of an organization's ERM implementation is developed, based on companies' ability to achieve their objectives relative to strategy, operations, reporting, and compliance. Five indicators (ERM classifying items, i.e. survey questions) are used for measuring the achievement of

each objective. The ERMISME is then constructed by summing up all 20 indicators for the above four objectives, as the equation below shows:

Score of Strategic objective + score of Operations objective + score of reporting objective + score of compliance objective = Enterprise Risk Management Index for SMEs

COSO (2004b) discusses the basis on the reasons why an ERM system should be adjusted toward achieving the four objectives (Gordon et al. 2009: 309–310). As shown above, the index is based on COSO's four objectives of ERM and basically the index is a measure of the effectiveness of an organization's ERM implementation based on its ability to achieve its objectives relative to firm's strategy, operations, reporting, and compliance. Therefore, the basic goal of the ERMISME is to combine the achievement of these COSO ERM objectives into one metric (see Gordon et al. 2009: 310–312).

4.3.2. Operationalization of Debt Financing Access measures

To quantify the different areas of debt financing access, three measures are being formed from the responses of the survey questions. The operationalizations are divided into three categories that are based on the categories of Yritysrahoituskysely (2013), which was carried out in the co-operation with several important Finnish institutions. Three categories of debt financing access issues arise from this survey:

- General difficulties to access the debt finance, both in the past and in the estimated future.
- Terms and conditions of debt financing. The access to debt financing is frequently prevented by the higher interest margins, increased loan covenants, lowered collateral values and increased demands of collateral, and increased pricing of the corporate debt guarantees.
- Alternative sources of debt are the new phenomenon of the era where increasing regulatory pressure on banks leads to lower level of lending. After the financial crises of the 2000s, the alternative sources of debt have also extended to the reach of SMEs. The positive attitudes to the alternative sources of debt finance are

decreasing the bar of debt financing access, as suggested by Bruns & Fletcher (2008).

The measure on general difficulties on debt financing is operationalized as a sum variable and labelled as "DIFF". In this category only three indifferent responses were received and they were labelled as the center point (zero point) responses. The responses regarding the difficulties in general access to debt and deviations from the payment schedules on existing debts were inverted and adjusted to the scale that is used in the question item regarding the general ability to raise funding from the debt market. These inversions and adjustment are carried out to enhance the comparability of the DIFF variable.

The factors of debt terms and conditions are summed to one variable and labelled as "TECO". The five items constructing the TECO are questions that do not apply to situations of all the survey respondents. Therefore, number of responses in this category included a combination of "not applicable" or "I cannot say". Based on the individual responses altogether 16 responses were excluded, 8 from active and 7 from passive clusters, thus keeping the balance between the clusters approximately the same. The remaining inconclusive responses were modified to the midpoint category ("3 – no change").

The sum variable of attitudes towards alternative sources is labelled as "ALTE". The responses to two items contain only a small number of "I cannot say" -responses, thus requiring only limited modifications to the midpoint response category ("3 – no change"). The detailed questionnaire items are presented in Appendix 4.

4.4. Reliability and validity

The accuracy of results is based on the reliability and validity of the measures, research design and methods being used. Reliability is about the quality of measurement, and in a broad sense the reliability is the consistency or repeatability of the measures (Metsämuuronen 2001a: 52–53). If the measures are reliable, the results would be very similar on each repeated test round. The reliability of a survey study is based on the reliability of answers of each respondent. Survey questions have been directly obtained from earlier survey research regarding the degree of ERM implementation to improve the research validity and reliability.

Because the completion of the survey was voluntary, there is potential for bias if those choosing to respond differ significantly from those who did not respond and the results of the study may be limited due to these bias to exist. Beasley et al. (2015: 227) also notifies that in the case of survey studies that *there may be others leading the risk management effort within their organizations whose views are not captured in the responses we received*. However, in this study the major proportion of the respondents identified themselves as "entrepreneurs", thus confirming the respondent is in charge of the ERM implementation processes.

Cronbach's alpha, named by Lee Cronbach in 1951, is widely used as a reliability measure in the social sciences and is the reason this study utilizes Cronbach's alpha to evaluate and measure reliability. A commonly accepted rule for describing internal consistency poor by using Cronbach's alpha is values less than 0.6. The values of higher that equal to 0.8 have been described as good or excellent. As measured by the Cronbach's alfa, the following values were obtained:

- COSO ERM objectives variables: 0.66 – 0.92
- ERMISME: 0.86
- Debt financing access variables: 0.53 – 0.62

Therefore, it seems that that the variables measuring the degree of ERM implementation are very reliable measures to be used. However, the alfas for the debt financing figures imply a poorer reliability level, which may be affected by the exclusion respondents and inversions of the single items. Because there is only two items in the ALTE measure, it is omitted from the reliability analysis due to narrow set of items for accurate values.

The essential measure of validity is that the measure is actually measuring what it is supposed to measure (Metsämuuronen 2001a: 50). Both internal and external validity are taken into account in the research design. External validity means that the results can be generalized from the sample to larger population setting. In the context of questionnaire-based study, internal validity means the ability of a specific questions to measure what they claim to measure, which is a widely used definition to internal validity, not just a questionnaire design related issue.

Internal validity of a study can be tested before the actual research to identify possible misunderstandings. This has been executed by pre-testing the questionnaire with SME managers that are in charge of risk management initiatives. Another possibility to increase the quality of the internal validity is to employ questions from earlier similar studies, as explained in chapter 4.1. The questions in this research are designed by employing prior academic literature and their single survey questionnaire items, in other words some questions are originally similar to the ones used in other studies (e.g. Beasley 2015; Brustbauer 2016). Some of the survey questions are identical with the role model questions, however most of the questions have been modified to be more understandable and unequivocal for the Finnish entrepreneurs and managers of surveyed SMEs. Survey questionnaire is self-administered and respondents have received an identical questionnaire via an email survey letter to ensure higher reliability. Questions are mostly in the form of Likert-scale questions, and there are no open-ended questions, to ascertain simplicity and easiness of responding. Furthermore, linguistic intelligibility was also considered in design of final set of the questions.

External validity – the ability to generalize from the research findings – is affected by a relatively low response rate of the survey (see Table 7). Only 8.3 % of the potential respondents participated in the study, and only 3.7 % of them were qualified in the final sample. This is likely to decrease the external validity of the study. In absolute terms, 61 qualified responses are a reasonable number of observations, and external validity of study is at least close to the acceptable level.

4.5. Data analysis and methods

Cluster Analysis. *Cluster analysis is the art of finding groups in data* (Kaufman & Rousseeuw 2005: 1). The general purpose of the cluster analysis is to group similar data elements into a set and then categorize numerous elements of data points into a few clusters. The objective of cluster analysis is to increase homogeneity within a cluster and increase heterogeneity across clusters (Dutta 2015: 29). Clustering and or a concept of a "cluster" cannot be precisely defined, which is the reason for numerous clustering algorithms that typically operate two different input structures, and that aim to measure the proximities of variables of the sample units and to study the similarities and dissimilarities of the sample

unit variables (Kaufman & Rousseeuw 2005: 3–4). The clusters are formed so that the units within each cluster have high similarity to one another but are highly dissimilar to units in other clusters. Dutta (2015: 29) explains that the term "cluster analysis" does not identify a particular statistical method or model and it does not require any assumptions regarding the underlying distribution of data. While most statistical methods are constrained by the assumption of normality, cluster analysis is not limited by any assumption regarding distributional property of data. "Cluster analysis is more generalized and could form groups of related variables (that are) similar to factor analysis" (Dutta 2015: 29). Method of clustering is suitable detecting previously unknown anomalies from the sample, and therefore, for example, addresses well the risk of the "unknown unknown", a term popularized by the former U.S. Secretary of Defense Donald Rumsfeld.

The recent study on Austrian SMEs and their ERM approaches (Brustbauer 2016) utilizes the "bottom up" explorative approach with Ward's clustering algorithm with squared Euclidean distance to determine fairly homogeneous clusters of SMEs that simultaneously represent maximum heterogeneity between clusters. These clusters are termed as "active ERM approach" and "passive ERM approach". To improve the comparability of these SME ERM studies this research also conducts a cluster analysis, but instead of "bottom up" approach the cluster analysis is executed with a "top down" approach to discover the most suitable clusters that represent the "active approach" and "passive approach" of ERM implementation within the sample of Finnish SMEs.

The cluster analysis is conducted by using a non-hierarchical clustering technique to achieve a targeted statistical classification of two ERM approach subsets within the adjusted sample. Partitioning is applied in order to distinguish the sample objects to groups of variables (Johnson & Wichern 2002: 79), and more precisely *a strict partitioning of hard clustering* is being applied, which means that each sample object belongs to exactly one cluster, and no object is left out of these two cluster groups. Non-hierarchical clustering techniques, such as the k-means method, are designed to group sample items, rather that variables, into a collection of preselected ("k") clusters (Johnson & Wichern 2002: 694).

The k-means method of MacQueen is probably the most extensively applied non-hierarchical clustering technique (Kaufman & Rousseeuw 2005: 113). The number of clusters are prespecified in advance to two. The algorithm assigns each sample object to a cluster that has

the nearest centroid by computing the shortest distance of each sample object to these centroids using Euclidean distance. Recalculation (iteration) of the centroid for a cluster takes place by receiving a new item and for the cluster losing the item, while repeating this until no more reassignments take place (Johnson & Wichern 2002: 694). Real Statistics tool for MS Excel is being used to compute the k-means cluster analysis. The descriptive statistics of the clustering can be seen in Table 8 that show the division of clusters and their respective means and standard deviations measured by the ERMISME.

Table 8. Descriptive statistics for the k-means cluster analysis.

Cluster name	Frequency	%	Mean	Standard deviation
Active cluster	28	45.9 %	5.60	1.20
Passive cluster	33	54.1 %	3.80	1.53
Total	61	100.0 %		
Iterations	25			
Sum of squares for error	34.76			

The ERM classifying items (i.e. survey questions) are then grouped under their respective COSO ERM objectives category, then means and standard deviations of each item is calculated. The descriptive statistics of ERM classifying items for both clusters can be seen in Table 9 in chapter 5.

Fisher (2004) denotes that *if you have two groups and you would like to test the difference in their mean score, an appropriate test is the t-test*, which is the recommended parametric test differences in means. However, the comparisons between the clusters are made using the Mann-Whitney U-test. The Mann-Whitney U-test is conducted because the sample of the active cluster is smaller than 30, but more importantly the samples are not normally distributed measured by the Shapiro-Wilk tests, therefore disabling the use of the T-test.

To analyze the relationship between ERM objective items (dependent variables) and preconditions for ERM implementation (size, sector, ownership), multivariate analyses of

variance (MANOVAs) are conducted. Multivariate analysis of variance (MANOVA) is a procedure for comparing multivariate sample means when there are two or more dependent variables and is followed by significance tests involving individual dependent variables separately, i.e. analyses of variance. Analyses of variance ("ANOVAs") investigate whether there are differences in ERM objective dimension items that can be ascribed to size, sector and ownership structure. Bonferroni–Holm correction is applied to calculate statistically significant differences between the groups (see e.g. Moore, McCabe & Craig 2014: 644 and 670). Analyses are performed separately for each of the ERM objective dimension items.

The assumptions of ANOVA must hold in the sample before conducting the ANOVAs within the ERM objective dimension items. The assumptions are:

- independence of sample groups (i.e. active and passive clusters),
- normal distributions of sample groups, and
- equality of variances of sample groups (i.e. homogeneity of variance).

Independence of sample groups is taken care of with research design. The surveyed firms are independent from each other, thus enabling the independence of formed clusters and subgroups, therefore ensuring that none of the survey participants are in more than one of the groups that are compared. To test the normality assumption, the Shapiro-Wilk tests are conducted for every ERM objective dimension score. Homogeneity of variance is tested with Levene's test simultaneously with the ANOVA tests of individual ERM objective dimensions.

The positive relationship of larger company size and the degree of ERM implementation is also tested with simple linear regression analysis. The questionnaire item number two ("*Does Your company have an ERM system, or some of its components, implemented?*") is labelled as ERMLEVEL and this measure is regressed against the measure of company size. This additional analysis is conducted to confirm the previous results.

The normality of debt financing items and the debt financing sum variables (DIFF, TECO and ALTE) of both clusters are tested using the Shapiro-Wilks normality test. Because the Shapiro-Wilks test shows that all the debt financing items in both clusters are not normally distributed, and that the sum variables are only very weakly normally distributed, the

differences between the means of debt accessing items and the sum variables are tested using the Mann-Whitney U-test, instead of analysis of variance.

Significance levels in this study are the ones generally used in quantitative research. The two common cut-off points are the 0.05 and 0.01 levels (5 % and 1 %) and are displayed as the test p-values (Fisher 2004: 183). Additionally, 0.10 level is also being used to signal weak significances, as they might indicate tendencies for closer examination. Symbols of *, **, and *** denote levels that are significantly different from zero at 10 %, 5 %, and 1 % levels, respectively.

5.   RESULTS OF THE RESEARCH

In the fifth chapter, the hypotheses developed in the chapter four are tested with the statistical approaches described earlier. The first section reports the results of relationships between the firm characteristics as ERM preconditions and the degree of ERM implementation. The second section analyses the relationships between the degree of ERM implementation and three different aspects of debt market access. A summary of the results is presented in the last section.

The ERM classifying items (i.e. survey questions) were grouped under their respective COSO ERM objectives category, then means and standard deviations of each item is calculated. The descriptive statistics of ERM classifying items for both clusters can be seen in Table 9.

From the results, certain trends can be identified. First, cluster means of each of the COSO ERM classifying items increase significantly when moving from the passive cluster to the active cluster. Second, the passive ERM approach shows rather low reporting activity with the mean of means at 3.52. Also, the passive group of companies is characterized by particularly low risk-response activity across the objectives dimension. These observations imply that the passive group is having low activity in documenting their risk management issues or responding to the risks in an organized way. This is expectable as the documentation is not one of top priorities of SMEs, especially if it does not create imminent value for the firm.

Finally, the active cluster shows rather high activity in strategic objective components (mean of means at 5.86), and very high activity in monitoring in the compliance objective, which in the questionnaire considered the compliance of laws, decrees and industry-specific regulations. This is also evident in the passive group (mean of means at 5.88) that can be explained by cultural reasons, in other words the Finnish companies are extremely willing to comply with the regulation frameworks they operate in, and that the regulatory control is nationally quite high as Finland is regarded as country with lowest levels of corruption in the world.

Table 9. Cluster means and standard deviations of the ERM classifying items.

ERM classifying items by COSO objectives dimension	*Active cluster*		*Passive cluster*	
COSO ERM classifying items	*Mean*	*SD*	*Mean*	*SD*
Strategic objective				
Internal environment	6.04	1.35	4.12	1.61
Objective setting	5.96	1.02	3.97	1.60
Event identification	6.07	0.88	3.94	1.18
Risk assessment	6.00	0.93	3.79	1.25
Monitoring	5.21	1.78	3.45	1.60
Operations objective				
Objective setting	6.07	0.88	4.82	1.60
Event identification	5.71	0.92	3.55	1.48
Risk response	4.36	2.12	2.73	1.50
Control activities 1	5.36	0.77	3.55	1.16
Control activities 2	6.14	1.09	5.21	1.47
Reporting objective				
Internal environment	5.64	0.72	3.42	1.35
Event identification	5.75	0.99	3.09	1.62
Risk response	5.25	1.50	2.79	1.53
Information & communication	5.07	1.77	4.09	1.82
Monitoring	6.04	0.87	4.21	1.41
Compliance objective				
Internal environment	5.36	1.74	3.36	1.90
Event identification	4.71	1.92	2.70	1.53
Risk response	4.89	1.47	2.85	1.42
Information & communication	5.68	1.07	4.58	1.56
Monitoring	6.64	0.55	5.88	1.09

Comparisons between the clusters were made using the Mann-Whitney U-test. The results show statistically significant differences in all ERM classifying items and collective ERM objective dimensions between clusters, as all the p-values are below 0.01. Similarly, Mann-Whitney U-test is conducted to all objectives items between the clusters, the results being as significant as in the case of single classifying items.

5.1. The relationships between firm characteristics and the degree of ERM implementation

First, the MANOVA statistics are formed for each of the three firm characteristics and all the classifying items. None of the MANOVA results are statistically significant for the three characteristics, measured by Pillai's Trace, Hotelling's Trade and Wilk's Lambda. Size is significant in three, sector in two and ownership in two ANOVA single factor analysis of the classifying items as dependents. Secondly, MANOVAs are conducted between the three firm characteristics and the four objective items and the ERMISME. Only the industry sector characteristics is very significant (Pillai's Trace, Hotelling's Trade and Wilk's Lambda having all p-values < 0.01). Also, the age of the respondents was controlled showing almost zero significance in both MANOVA and single factor ANOVA results. This implies, according to the literature, that the average age of the management is not a factor in the ERM implementation. The p-values from Levene's test for all ANOVAs are greater than 0.10, thereby confirming the null hypothesis of homogeneity of variance.

Firm Size. Table 10 summarizes the results from the Shapiro-Wilk test, Levene's test and ANOVA tests for each ERM objective dimension and for the total ERM score (ERMISME). The presumptions of ANOVAs are tested with Shapiro-Wilk test on each of the size groups in each of the items and ERMISME. The normality assumptions hold well, although the Strategic objective has one size group with test p-value less than 0.05 (0.044). Levene's tests for homogeneity of variance suggest that all the groups have similar variances. The only statistically significant ANOVA test result arises from the ERMISME -measure that summons all the objective dimensions of the ERM implementation. The narrowly significant p-value of 0.097 implies that there is positive relationship between the larger size of the firm and the higher degree of ERM implementation.

Table 10. Size vs. ERM implementation: Shapiro-Wilk test, Levene's Test and ANOVAs.

	Shapiro-Wilk test (p > 0,05)	Levene's test means p-value	ANOVA p-value	Significance
Strategic	3/4	0.501	0.199	-
Operational	4/4	0.661	0.134	-
Reporting	4/4	0.190	0.237	-
Compliance	4/4	0.365	0.118	-
ERMISME	4/4	0.164	0.097	*

*   p-value < 0.10

As a controlling measure, the positive relationship of larger company size and the degree of ERM implementation is also tested with the questionnaire item number two ("*Does Your company have an ERM system, or some of its components, implemented?*"), labelled as ERMLEVEL. The linear regression analysis between the ERMLEVEL and the company size variables produce a p-value of 0.003 also implying a positive relationship between the company size and degree of ERM implementation. However, this measure cannot be seen as reliable as the ERMISME construct latent variable that is based on 20 survey questions on actual state of the different activities within ERM objective dimensions. ERMLEVEL also is quite easily misunderstood and overrated by the smaller firms that have limited risk management resources.

The strongest relationship of the four objective items, although not statistically significant, between the firm size and the implementation of the compliance dimension of ERM is not surprising in the light of heavy regulatory and bureaucratic burden that these activities create for SMEs. Typically, only the larger resources enable companies to invest into people and systems that specialize into the documentation and reporting that the compliance activities require. These resources are seen as administrative, thus non-supportive for the core-business activities, and often regarded as a burden. However, cost effective ways have been identified that reduce over-management of risks and organizational alignment towards the SME's mission and objectives can be realized (see Smit & Watkins 2012: 6328).

Firm Sector. Because the sample was fairly small, there was also markedly low participation from finance, insurance and real estate sectors as there were on two qualified respondents from these sectors. However, as measured by the ERMISME, these two companies are in the highest quartile of the active ERM cluster, thus having a strong implication of very robust ERM implementation. Due to asymmetry of the populations (2 vs. 58) and due to low amount of observations the normality assumption does not hold, and thus, the ANOVA cannot be conducted. Therefore, the Mann-Whitney U-test for two independent samples is the suitable option for two classes. The one-tailed Mann-Whitney U-test, as expected by the raw data, suggests significant results in Table 11.

Table 11. Sector vs. ERM implementation: Mann-Whitney U-test.

	Mann-Whitney U-test p-value	Significance
Strategic	0.032	**
Operational	0.030	**
Reporting	0.020	**
Compliance	0.035	**
ERMISME	0.018	**

** p-value < 0.05

The results from the test confirm the significance of the sector as a precondition for higher degree of ERM implementation.

Firm ownership. The sample is divided into 39 family-owned enterprises and 22 non-family enterprises. There are more family-owned companies on average in the passive cluster (72.7 %) compared to the active cluster (53.6 %), thus supporting the tendency that is suggested by the ERM literature that the family-owned businesses are less active in the ERM adaption and implementation. Table 12 summarizes the results from the Shapiro-Wilk test, Levene's test and ANOVA tests for each ERM objective dimension and for the total ERM score (ERMISME). The presumptions of ANOVAs are tested with Shapiro-Wilk test on each of

the size groups in each of the items and ERMISME. The normality assumptions hold well and Levene's tests for homogeneity of variance suggest that all the groups have similar variances. As suggested by the raw data, ANOVA p-values imply that there is no difference between the groups of family-owned businesses and non-family businesses. Although the tendency is evident that the family-owned businesses keep the control non-systematic, non-integrated and ad hoc, the hypotheses does not gain enough statistical support from the sample data.

Table 12. Ownership vs. ERM implementation: Shapiro-Wilk test, Levene's Test and ANOVAs.

	Shapiro-Wilk test ($p > 0,05$)	Levene's test means p-value	ANOVA p-value	Significance
Strategic	2/2	0.213	0.613	-
Operational	2/2	0.588	0.257	-
Reporting	2/2	0.832	0.192	-
Compliance	2/2	0.326	0.292	-
ERMISME	2/2	0.336	0.242	-

5.2. The relationships between the degree of ERM implementation and factors of debt financing access

The ERM classifying items (i.e. survey questions) were grouped under their respective debt financing categories (DIFF, TEDO and ALTE), then means and standard deviations of each item were calculated. The descriptive statistics of ERM classifying items for both clusters can be seen in Table 13. The mean of seven of ten debt financing items are higher in active ERM clusters than in passive ERM clusters. Also, the differences of means between the debt financing categories of DIFF, TECO and ALTE, i.e. the sub variables, are quite narrow (respectively active vis-à-vis passive: 12.68 – 12.09; 14.65 – 14.50; 5.64 – 5.00).

Both clusters have only minor difficulties in their debt financing in their debt financing history, and the passive cluster has notably rare deviations from the payment schedules of their debt obligations. However, the active cluster sees that the access to debt finance in the following 24 months is significantly better than the passive cluster (see table 14 for p-values and significance). The TECO items are quite similar between the clusters, however the passive cluster slightly seeing increased worsening of the terms and conditions of the debt financing during the last 24 months. Interestingly, the means for the items "covenants", "collateral valuation" and "collateral requirements" are lower than 3 for both approaches, that is, SMEs regard that the general terms and conditions have slightly worsened in the past 24 months. This is a similar tendency the Yritysrahoituskysely (2013) has observed within the Finnish SMEs.

Table 13. Cluster means and standard deviations of the debt financing classifying items.

Debt financing access categories	Active cluster		Passive cluster	
Classifying items	*Mean*	*SD*	*Mean*	*SD*
General difficulties (DIFF)				
New debt financing access	3.54	0.82	3.18	0.94
Difficulties in past 24 months	4.50	0.87	4.09	1.22
Deviations from payment schedules	4.64	0.77	4.82	0.57
Terms and conditions (TECO)				
Interest rate margins	2.75	0.77	3.04	0.90
Covenants	2.95	0.50	2.92	0.67
Collateral valuation	2.95	0.59	2.77	0.58
Collateral requirements	2.90	0.30	2.73	0.65
Pricing of guarantees	3.10	0.44	3.04	0.65
Attitudes to alternative debt (ALTE)				
Attitude 1	3.25	1.18	2.58	1.10
Attitude 2	2.39	1.01	2.42	0.82

Comparisons between the debt financing clusters were made using the Mann–Whitney U-test. The results show statistically significant differences between clusters only in the general attitude on alternative debt, especially the general knowledge of the alternative sources of debt and alternative debt instruments ($p < 0.05$). The less significant differences between the clusters are in the DIFF items that measure the current conditions of debt market access and the experienced difficulties of debt market access within the last 24 months (both significant at level 0.10).

Table 14. Comparisons between the clusters using the Mann–Whitney U-test.

Debt financing access categories	*Mann-Whitney U-test p-value*	*Significance*
Classifying items		
General difficulties (DIFF)	0.120	-
New debt financing access	0.075	*
Difficulties in past 24 months	0.097	*
Deviations from payment schedules	0.158	-
Terms and conditions (TECO)	0.371	-
Interest rate margins	0.138	-
Covenants	0.423	-
Collateral valuation	0.233	-
Collateral requirements	0.193	-
Pricing of guarantees	0.278	-
Attitudes to alternative debt (ALTE)	0.038	**
General knowledge on alternative debt	0.018	**
Benefits of private equity debt	0.398	-

** p-value < 0.05

* p-value < 0.10

5.3. Summary of the results and other observations

The findings by the literature suggest that the implementation of ERM processes is steered mostly by firm characteristics. The results of the study show that some of the hypothesized relationships are statistically significant, but all the presented relationships have some tendencies as suggested by the ERM literature and similar studies in the SME context. The results have correspondence especially with preceding studies that have found the strong relationship between the size and the sector, even though the studies differ in design and sample size. The larger entities have the benefit of economies of scale when implementing ERM processes, while smaller firms have resource constraints (Pagach & Warr 2011) that is in line with the samples from other geographical areas, mostly from listed North American firms and European SMEs. Naturally, the complexity of the ERM systems are clearly higher in the context of listed companies. The family-ownership of the firm does not seem to be an obstacle for ERM implementation in the case of Finnish SMEs, although there is some tendency for the non-family companies to implement ERM more frequently.

Table 15. Summary of the hypothesis and statistical tests.

Hypotheses	P-value of key test	Significance	Accept/reject
H1	0.097	*	Accept
H2	0.018	**	Accept
H3	0.242	-	Reject
H4	0.120	-	Reject
H5	0.371	-	Reject
H6	0.038	**	Accept

**   p-value < 0.05

*   p-value < 0.10

The results regarding the relationships between the degree of ERM implementation and the debt financing access show that there is some tendencies that the active ERM cluster has a better debt financing access than the passive cluster that show lower levels of ERM implementation activity. However, the statistically significant results are limited only to the

general attitudes and acceptance towards alternative debt sources, and in a more limited fashion, in the certain aspects of DIFF.

The survey also explores some interesting results from the related, controlling questions. The adoption of ERM system is naturally in a more mature phase in the companies that have a higher degree of ERM implementation as measured by the ERMISME. Also, the experienced risks, and their complicatedness, have increased during the last 5 years more in the firms that have higher adoption and implementation rate of ERM. This could imply that the firms that have experienced difficulties and realized risks are more willing to invest their resources for the more systematic, enterprise-wide and integrated risk management processes. The growth orientation is also on slightly higher level (as measured by question item 3, see Appendix 4) that could indicate that higher risk management activities are also related to the increased growth ambitions, thus explaining the heightened interest and attitudes towards the alternative sources of debt that enables the financing of the growth.

6. DISCUSSION AND CONCLUSIONS OF THE RESEARCH

After studying the statistical test outcomes and comparing the outcomes with the hypothesis, the purpose of this chapter is to discuss in general fashion on the research topic, research questions, results and their interconnectedness with the existing literature and empirical research. Some limitations have also been found, suggestions for the future research are presented and the study end with conclusions of this research.

6.1. Discussion

From the beginning of 2000s there has been an evident paradigm shift in the area of organizational risk management. Instead of evaluating and assessing the risks from a silo-based, often quite narrow, perspective, the trend is toward a comprehensive and integrated view of risk management – generally referred as enterprise risk management. The aim of the enterprise-wide integrated conceptual framework is the identification, assessment and monitoring of all potential and existing threats and opportunities an organization is facing (Meulbroek 2002; Pagach and Warr, 2011). Therefore, ERM introduces risk management model that supports a holistic risk management methodology, which is aiming to achievement of rational operational and strategic management decisions, even for SMEs in the European business context (Brustbauer 2016).

Working from theoretical risk concepts, the COSO framework provides broad guidance, suggesting key principles, but leaving the implementation aspects the companies themselves. The COSO ERM framework is being utilized to formulate the measures to examine the degree of the ERM implementation of Finnish SMEs. The concept of ERM has basis on the portfolio theory of Markowitz (1952), institutional theory, agency theory, resource dependence theory and contingency theory. These theoretical foundations have also laid ground for the internal control frameworks, such as the COSO internal control framework, which has acted as the foundation for COSO ERM. Several other frameworks exist, but according to the literature, the COSO ERM framework is the most widely implemented integrated enterprise-wide ERM application.

The cluster analysis is conducted and the surveyed firms are divided into two clusters on the basis of their ERM implementation activity, the active cluster and the passive cluster, to examine the relationships to the characteristics and the debt financing access. The size, sector and ownership characteristics are discussed and their relationship to the ERM implementation maturity is examined employing analysis of variance (ANOVA) and multiple analysis of variance (MANOVA). The second part, and the key purpose of this study, examines the relationships between the degree of ERM implementation and the debt financing access variables. The SME debt financing access variables are based on the FFE driven SME surveys called Yritysrahoituskysely (2013).

The research questions for the research are:

RQ1:   *Is the degree of ERM implementation dependent on the size of the organization?*

RQ2:   *Is the degree of ERM implementation dependent on the industry sector of an organization?*

RQ3:   *Is the degree of ERM implementation dependent on the quality of firm ownership?*

RQ4:   *Are the experienced difficulties in debt financing dependent on the degree of ERM implementation?*

RQ5:   *Are the terms and conditions of debt financing dependent on the degree of ERM implementation?*

RQ6:   *Are the attitudes to alternative sources of debt dependent on the degree of ERM implementation?*

Based on these research questions, the more detailed literature based hypothesis are:

H1:   *The larger size of the firm is positively associated with the degree of ERM implementation.*

H2:   *The firms in financial services and insurance sectors have higher degree of ERM implementation.*

H3:   *The family-ownership of the firm is negatively associated with the degree of ERM implementation.*

H4:   *The higher degree of ERM implementation is negatively associated with difficulties in debt financing.*

H5:   *The higher degree of ERM implementation is positively associated with better terms and conditions of debt financing.*

H6:   *The higher degree of ERM implementation is positively associated with positive attitudes to alternative sources of debt.*

Is the degree of ERM implementation dependent on the size of the organization? The increasing size of the organization has been seen very influential on the likelihood of ERM adoption and higher level of implementation (see e.g. Liebenberg & Hoyt 2003; Beasley et al. 2005; Beasley et al. 2008; Gordon et al. 2009; Pagach & Warr 2011; Hoyt & Liebenberg 2011 and Paape & Speklé 2012). This study also supports this consensus, although not very strongly, as the narrowly significant p-value of ANOVA at 0.097 implies that there is positive relationship between the larger size and the higher degree of ERM implementation measured with ERMISME.

Is the degree of ERM implementation dependent on the industry sector of an organization? The small sample size enabled only 2 responses from the sectors finance and insurance. However, these two observations stand out as statistically very significant to support the H2 that the firms in financial services and insurance sectors have the higher degree of ERM implementation.

Is the degree of ERM implementation dependent on the quality of firm ownership? Although there are more family-owned businesses in the cluster of more passive ERM implementing companies, there is not enough statistical evidence to conclude that the family-ownership of the firm is negatively associated with the degree of ERM implementation, thus rejecting the H3.

Are the experienced difficulties in debt financing dependent on the degree of ERM implementation? The general difficulties variable (DIFF) of the debt financing access of SMEs does not differ statistically meaningfully to support the hypotheses that the higher degree of ERM implementation is negatively associated with difficulties in debt financing, in other words, the higher ERM activity cluster does not have meaningfully less difficulties in their debt financing access possibilities and processes although two single items of DIFF have weak statistical significance to reject the assumption of the similar means between these items.

Are the terms and conditions of debt financing dependent on the degree of ERM implementation? By examining the means of the active and passive ERM clusters, it is evident that the changes in the terms and conditions have been minor (to the negative direction) in both active and passive ERM implementation clusters, and that the changes in terms and conditions have been similar in nature. Therefore, the hypothesis that the higher degree of ERM implementation is positively associated with better terms and conditions of debt financing (TECO) is rejected based on the Mann-Whitney U-tests conducted.

Are the attitudes to alternative sources of debt dependent on the degree of ERM implementation? The sample data supports the hypothesis, tested by the Mann-Whitney U-test on ALTE, that the higher degree of ERM implementation is positively associated with positive attitudes to alternative sources of debt. The active cluster with higher ERMISME scores has clearly more positive attitudes on alternative sources of debt, measured on their general knowledge on alternative debt financing, although there seems to be no difference how the active and passive clusters view the benefits that are being materialized via the co-operation with the alternative lenders, for example private equity direct lending funds. However, based on the results on Cronbach's alpha test, the questionnaire items related to the SME attitudes toward alternative sources of debt are not quite reliable measures.

6.2. Limitations, contributions and suggestions for further research

This study also has its limitations and the findings should be viewed with care due to several reasons that are:

1. Difficulties for replication due to national context.
2. Small sample size of the final sample.
3. Measuring the debt financing access, and quite limited amount of comparable studies on SMEs and debt financing.
4. Internet survey vis-à-vis detailed on-site interviews to ensure the understanding of ERM framework implementation.

Perhaps the only method to validate the findings of this exploratory study is by a replication process. Also, this study is conducted in the Finnish national context, and the SMEs as a group are fairly heterogeneous and not necessarily well-presented by the FFE (and their survey database), there is an evident limitation for representativeness of the entire population of Finnish SMEs. Due to the nature of the FFE database, the amount of micro-firm respondents was almost half of the original sample. This decreased the reliability of measures and the firms without any qualities of SMEs has to be drawn from the final sample.

The very starting point for this study was the lack of academic, theoretical and empirical, research on the state of Finnish ERM practices and implementation, let alone the in the context of SMEs. The scarcity of information regarding the state of risk management practices of SMEs is evident especially in the European literature, and therefore the research approach must be partly explorative due to limited set of reference studies in the selected context. The contribution of this study is based on the examination of the research topic in question and the improvement in the understanding of the current ERM implementation practices in Finnish SMEs and also the current debt financing conditions and their relation to the level of ERM implementation of SME organizations. By understanding the collection of risk management practices a picture of the current state of Finnish SME risk management can be formed.

The access the debt markets and higher level of debt leverage also implies the need for higher degree of ERM implementation. For example, Pagach & Warr (2007), whose study focused on banks and public utilities, found that a 10 % increase in leverage increases the probability for companies to hire a CRO by 7.8 %. Hiring of a CRO is generally considered a strong sign of increasing degree of ERM implementation (Liebenberg & Hoyt 2003). This naturally implies for further research on credit institutions' official assessment of the quality if risk management in the borrowing organizations, or even credit officers' perception on ERM in their client firms.

One interesting area of future research would be a critical literature review of critical literature reviews of enterprise risk management. During the process of going through the extensive literature the difference between ERM literature reviews have been extremely wide, and it would be interesting the review all the literature reviews and the reasoning behind the directions of collective ERM literature research areas.

The general consensus of researchers is, despite the critical voices, that implementing an ERM process is beneficial, value-adding and the positive impacts outweigh the cost of implementation for organizations. The relationships between the contingent characteristics of firms and the degree of ERM implementation have been widely studied and accepted preconditions of ERM implementation. However, these characteristics preconditions are being confirmed by the literature for both large and small and middle-sized companies, and for the further research the particular characteristics of SMEs could be examined and evaluated against the degree of ERM implementation. Later studies may add to the understanding of the degree of ERM implementation by examining the role of other relevant firm characteristics that are important preconditions for the higher degree of ERM implementations in the context of SMEs. The research literature suggests that these characteristics could be quality of board of directors, the quality of other internal control systems and the effect of external regulatory pressures on the degree of ERM implementation. The pressure of external regulations are evident drivers of ERM especially in the sectors of financial services and insurance. Due to this pressure, as implied by the institutional theory, the implementation of an ERM system might be only superficial, leading to presentism of a functional system that fulfills the requirements of regulatory bodies that are pleased for the sake of compliance.

Another aspect is the general relevance of credit institutions as the vital financing source of SMEs, especially the growth-oriented companies. As suggested by the literature and the global credit rating agencies, the importance of systematic, enterprise-wide and integrated risk management systems has been seen intrinsic value-adding, and security increasing, systems for firms of any size. Due to information asymmetry and risk aversion, credit institutions are reluctant to lend money to SMEs. While several factors have been identified in the literature concerning what may affect the likelihood of granting debt, there is an increasing consensus among literature that the implementation of risk management processes is enhancing the probabilities of debt financing access, especially in the context of large, global enterprises. The further research should be concentrated on the specifics of decision-making processes of credit institutions, their view on ERM implementation and the relation to the growing group of SMEs (see also Bruns 2004).

ERM in the Finnish context is quite untouched area of research, but the SME perspective would most probably offer interesting results with qualitative research design with explorative methods, for example by interviews or observation research. Also, the ERM process is applicable to public sector organizations as well. In the national context, the internal control and risk management recommendation for governmental organizations (Valtiovarainministeriö 2005) that has been adapted from the COSO ERM framework, could be a standing point for examining the enterprise-wide risk management of public organizations and relationships to relevant measured variables of public organizations. This further research could help to investigate the degree of total corporate governance structures of public organizations and to suggest specific frameworks for public use.

6.3.   Conclusion

The ERM literature shows that most of the SMEs lack the resources and robust standardized mechanisms to support their risk management activities (Falkner & Hiebl 2009; Wu & Olson 2009). Due to the lack of resources this is particularly notable for smaller and also for medium-sized enterprises. These SMEs operate in the same environment as their larger competitors, but without the associated benefits such as adequate and multi-sourced debt financing access and extensive human resources of the larger organizations. While larger companies are increasingly managing their risks collectively, for example through specialized units with CROs, for SMEs the operational risk management is primarily executed by the firm owner who is possibly supported by a small management team (Smit & Watkins 2012).

This study contributes to the understanding of ERM implementation in the context of SMEs in the national context, and how the degree of ERM implementation is dependent on firm characteristics as implementation preconditions. Also, this study examines the relationships between the ERM implementation and debt financing access variables. The study focuses on three firm characteristics: size, industry sector and ownership. The characteristics are chosen based on studies conducted in the European SME environment (see e.g. Brustbauer 2016), with the similar macroeconomic characteristics as Finland.

Theoretical part of this study examines the background of the current state in the ERM implementation globally, and the research literature that is expanding on a rapid rate, however on a very limited fashion in the Nordic countries, especially in Finland. The earlier studies on the general context has also studied the firm characteristics, or influential preconditions, and their relationship to ERM implementation. The research results are based on empirical data that is gathered from 61 Finnish small and medium-sized business organizations using an Internet survey. The results show that a statistically significant result is obtained for the research questions regarding the relationship between the level of ERM implementation and the company characteristics of size and sector.

There seems to be quite limited difference between the active and passive clusters of ERM implementation when examining these clusters considering by the access to the debt capital markets measures, thus rejecting the hypotheses in the context of Finnish SMEs that there currently is wider relevance between the degree ERM implementation and the different factors of the debt financing access. Although it seems that the higher degree of ERM implementation has clear positive relationship with the attitudes towards alternative debt financing, therefore enabling easier access to the debt capital market by the firms' acceptance for a wider array of debt financing possibilities, not just the offered services of traditional credit institutions as a source for debt.

More research is needed on the SMEs and ERM, and in the Finnish context in general, and hopefully, this study offers an inspiration for future empirical research in Finland. Accordingly, this study should also encourage small business entrepreneurs to implement ERM in their firms. Although the implementation of ERM in SMEs is in many ways a holistic effort for the organization, the benefits of these efforts can be harvested in the longer perspective as longevity and effectiveness of the business organizations. Also the lenders, both traditional and alternative, are evaluating the risk management systems with a positive bias, as is suggested by the international research literature. Although the effect of ERM implementation on debt financing access is evident in the context of listed global corporations, the trend of more prudent credit analysis in the context of risk management systems are on their way. The risk management research is creating more understanding of ERM in the specific context of SMEs, the firm characteristics for ERM implementation and the effect of ERM implementation upon the debt financing market dynamics enabling the

SMEs to seek strategic advantage by increasing the competitiveness and durability of their firms.

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APPENDICES

Appendix 1. The cover letter of an e-mail sent to the respondents.

Arvoisa Vastaanottaja

Tämän kyselyn tarkoituksena on selvittää suomalaisen PK-yrityskentän riskienhallinnan toteutuksen ja käytäntöjen tasoa, sekä niiden vaikutusta PK-yritysten vieraan pääoman saatavuuteen. **Tästä syystä tämä kysely ja sen tutkimustulokset voivat olla Teille tärkeitä!**

Vastauksenne käsitellään äärimmäisen luottamuksellisesti, eikä missään yhteydessä esitetä yksittäisten yritysten tunnistettavia tietoja.

Kyselyyn vastaamiseen kuluu arviolta **vain noin 6–10 minuuttia** ja olemme kiitollisia kyselyyn käyttämästä ajastanne.

LINKKI KYSELYYN:
https://www.webropolsurveys.com/S/B1E6BDA9662A5BF8.par

Lisätietoja kyselyyn liittyen:
Marko Kyyrönen
Puh.:   044-5069740
E-posti: marko.kyyronen@gmail.com

Tutkimusterveisin,
Suomen Yrittäjät ry

P.S. Yhteystietonsa jättäneiden kesken **arvotaan viisi kappaletta Yrityksen Riskienhallinta -kirjaa**, joka antaa lukijalle hyvät perustiedot riskienhallinnasta ja perehdyttää lukijan käytännönläheisesti yritystoiminnan riskeihin ja niiden hallintakeinoihin.

Appendix 2. The cover letter of an e-mail reminder sent to the respondents.

Arvoisa Vastaanottaja

Jokin aika sitten pyysimme apuanne tutkimukseen koskien PK-yritysten riskienhallinnan toteutusta ja käytäntöjä sekä niiden vaikutusta PK-yritysten vieraan pääoman saatavuuteen liittyen. Yritystoimintaan liittyvien kiireiden vuoksi ette ehkä ole vielä ehtineet vastaamaan, mutta **olisimme erittäin kiitollisia, mikäli voisitte käyttää noin 6**–**10 minuuttia** arvokasta aikaanne linkin takaa löytyvän kyselyn täyttämiseen. Riittävä määrä vastauksia takaa tutkimustulosten paremman luotettavuuden ja toivottavasti Tekin saatte kyselyn aihepiiristä uusia näkökulmia liiketoimintaanne.

LINKKI KYSELYYN:
https://www.webropolsurveys.com/S/B1E6BDA9662A5BF8.par

Vastauksenne käsitellään äärimmäisen luottamuksellisesti.

Kiitokset jo tässä vaiheessa kyselyyn vastanneille!

Lisätietoja kyselyyn liittyen:
Marko Kyyrönen
Puh.:   044-5069740
E-posti: marko.kyyronen@gmail.com

Tutkimusterveisin,
Suomen Yrittäjät ry

P.S. Yhteystietonsa jättäneiden kesken **arvotaan viisi kappaletta Yrityksen Riskienhallinta -kirjaa**, joka antaa lukijalle hyvät perustiedot riskienhallinnasta ja perehdyttää lukijan käytännönläheisesti yritystoiminnan riskeihin ja niiden hallintakeinoihin.

Appendix 3. The cover letter of the last e-mail reminder sent to the respondents.

Arvoisa Vastaanottaja

Jokin aika sitten pyysimme apuanne tutkimukseen koskien PK-yritysten riskienhallinnan toteutusta ja käytäntöjä sekä niiden vaikutusta PK-yritysten vieraan pääoman saatavuuteen liittyen. Kiitokset jo kyselyyn aiemmin vastanneille!

Kyselytutkimuksen vastausaikaa päättyy perjantaina 24.3.2017.

Olisimme erittäin kiitollisia, mikäli voisitte käyttää noin 6–10 minuuttia arvokasta aikaanne linkin takaa löytyvän kyselyn täyttämiseen. Riittävä määrä vastauksia takaa tutkimustulosten paremman luotettavuuden ja toivottavasti Tekin saatte kyselyn aihepiiristä uusia näkökulmia liiketoimintaanne.

LINKKI KYSELYYN:
https://www.webropolsurveys.com/S/B1E6BDA9662A5BF8.par

Vastauksenne käsitellään äärimmäisen luottamuksellisesti.

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Suomen Yrittäjät ry

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Appendix 4. The research questionnaire.

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1. Onko yrityksenne sisäisten ja ulkoisten riskien määrä ja/tai monimutkaisuus lisääntynyt viimeisen 5 vuoden aikana?

○ Ei lainkaan
○ Hyvin vähän
○ Vähän / jonkin verran
○ Melko paljon
○ Erittäin paljon

2. Onko yrityksellänne käytössä kokonaisvaltainen riskienhallintajärjestelmä tai joitain sen eri osa-alueita?

* Yleisimmän määritelmän mukaan "kokonaisvaltainen riskienhallinta on prosessi, johon vaikuttavat yhtiön hallitus, johto ja työntekijät. Sitä toteutetaan strategia- ja suunnitteluprosessissa koko organisaatiossa. Se on kehitetty tunnistamaan seikkoja, jotka voivat vaikuttaa yhtiöön ja hallitsemaan riskejä määritellyn riskinottohalun piirissä, ja luomaan riittävää varmuutta siitä, että yhtiö saavuttaa asettamansa tavoitteet."

○ Ei lainkaan
○ Suunnitelman tasolla
○ Toteuttamisesta on päätös
○ Toteutettu jonkin verran
○ Täysin käytössä

3. Miten luonnehtisitte yrityksenne kasvuhakuisuutta?

○ Ei kasvutavoitetta
○ Pyrimme säilyttämään nykyisen asemamme
○ Kasvuhakuinen
○ Voimakkaasti kasvuhakuinen

Vaihtoehdot (kysymykset 4–7):   1- täysin eri mieltä
                                  2- lähes täysin eri mieltä
                                  3- vain hieman samaa mieltä
                                  4- jonkin verran samaa mieltä
                                  5- melko samaa mieltä
                                  6- lähes täysin samaa mieltä
                                  7- täysin samaa mieltä

Yrityksen riskienhallinta – strategisen tason kysymykset:

4. Vastatkaa seuraaviin kysymyksiin valitsemalla mielestänne oikea vaihtoehto koskien yrityksenne tämän hetkistä tilannetta. Huomioittehan, että oikeita vastauksia ei ole, vaan kysymyksillä kartoitetaan yleistä, yrityksissä aidosti olemassa olevaa riskienhallintarakennetta.

4a) Yrityksemme hallitus vaatii ylimmän johdon sitoutumista riskienhallintaan ja sen valvontaan.
4b) Hallitus tai ylin johto on asettanut selkeät strategiset liiketoimintatavoitteet, jotka ovat ennalta-asetetun riskitason mukaisia.
4c) Hallitus tai ylin johto kartoittaa säännöllisesti yrityksen keskeisiä riskejä, sekä niiden sisältämiä uhkia ja mahdollisuuksia.
4d) Hallitus tai ylin johto arvioi havaitut riskit ja niiden vaikutukset yhtiön strategiaan säännöllisesti.
4e) Liiketoimintasuunnitelmamme edellyttää johdon säännönmukaista riskienhallinnan valvontaa.

Yrityksen riskienhallinta – operatiivisen tason kysymykset:

5. Vastatkaa seuraaviin kysymyksiin valitsemalla mielestänne oikea vaihtoehto koskien yrityksenne nykyistä tilannetta. Huomioittehan, että oikeita vastauksia ei ole, vaan kysymyksillä kartoitetaan yleistä, yrityksissä aidosti olemassa olevia riskienhallintaan liittyviä asioita.

5a) Yrityksemme toimii selkeän liiketoimintasuunnitelman mukaisesti.
5b) Panostamme riskien etukäteishavainnointiin nimettyjen vastuuhenkilöiden toimesta.
5c) Ulkoistamme vaativia ja/tai korkean riskitason tehtäviä ulkopuolisille.
5d) Käytämme etukäteen laadittuja tehtävälistoja ja -kuvauksia virheiden minimoimiseksi.
5e) Tarkistamme aina valmiiksi saadun tuotteen tai palvelun laadun.

Yrityksen riskienhallinta – raportointitason kysymykset:

6. Vastatkaa seuraaviin kysymyksiin valitsemalla mielestänne oikea vaihtoehto koskien yrityksenne käytäntöjä. Huomioittehan, että oikeita vastauksia ei ole, vaan kysymyksillä kartoitetaan yleistä, yrityksissä aidosti olemassa olevaa raportointikäytäntöä.

6a) Riskienhallintaprosessimme on kuvattavissa sanoilla "systemaattinen ja toistettavissa oleva".
6b) Raportoimme kirjallisesti yrityksessä havainnoituja eri riskitekijöitä.
6c) Laadimme päätöksentekoamme varten kilpailija- ja kilpailuanalyysejä.
6d) Teemme säännöllisesti kyselyjä asiakkaillemme laadun ja asiakastyytyväisyyden varmistamiseksi.
6e) Ylin johto arvioi ja kehittää yrityksemme raportointijärjestelmiä.

Yrityksen riskienhallinta – yritystoiminnan sääntelyä koskevat kysymykset:

7. Vastatkaa seuraaviin kysymyksiin valitsemalla mielestänne oikea vaihtoehto koskien yrityksenne käytäntöjä. Huomioittehan, että oikeita vastauksia ei ole, vaan kysymyksillä kartoitetaan yleistä, yrityksissä aidosti olemassa olevaa sääntelyyn liittyvää riskienhallintaa.

7a) Yrityksessämme on toimihenkilö tai yksikkö, jonka tehtäviin kuuluu yritystä koskevan sääntelyn toteutumisen valvonta.
7b) Käytämme ulkopuolisia asiantuntijoita riskienhallintaan liittyvissä kysymyksissä.
7c) Yrityksessämme on tarkasti laadittuja jatkuvuussuunnitelmia odottamattomia hätätilanteita varten.
7d) Henkilöstömme on erittäin tietoinen yritystämme koskevasta lainsäädännöstä sekä toimialamme erityissääntelystä.
7e) Noudatamme hyvin tarkasti lakeja, asetuksia ja toimialamme erityissääntelyä.

Vieraan pääoman saatavuus, taustakysymykset 1/2:

8. Onko yrityksenne saanut tai yrittänyt saada uutta ulkoista vieraan pääoman rahoitusta edellisen 24 kuukauden aikana?

○ Ei lainkaan
○ Hyvin vähän
○ Vähän / jonkin verran

9. Onko yrityksellänne vanhoja yli 24 kuukautta ennen kyselyä otettuja luottoja?

○ Ei lainkaan
○ Hyvin vähän
○ Vähän / jonkin verran

10. Aikooko yrityksenne hankkia uutta vieraan pääoman ehtoista rahoitusta seuraavan 24 kuukauden aikana?

○ Ei lainkaan
○ Hyvin vähän
○ Vähän / jonkin verran

11. Kuinka arvioitte yrityksenne mahdollisuuden saada uutta vieraan pääoman ehtoista rahoitusta seuraavan 24 kuukauden aikana?

○ Heikentyy merkittävästi
○ Heikentyy jonkin verran
○ Pysyy ennallaan
○ Paranee jonkin verran
○ Paranee merkittävästi
○ En osaa sanoa

Vieraan pääoman saatavuus – taustakysymykset 2/2:

12. Vastatkaa kysymyksiin valitsemalla mielestänne oikea vaihtoehto koskien edellistä 24 kuukautta.

Onko yrityksellänne ollut vieraan pääoman rahoituksen saamiseen ja ehtoihin liittyviä vaikeuksia edellisen 24 kuukauden aikana?
○ Ei lainkaan
○ Jonkin verran
○ Usein
○ En osaa sanoa

Onko yrityksenne poikennut vieraan pääoman ehtoisen rahoituksen hoitosuunnitelmistaan edellisen 24 kuukauden aikana?
○ Ei lainkaan
○ Jonkin verran
○ Usein
○ En osaa sanoa

Vieraan pääoman rahoituksen ehtoihin liittyvät kysymykset.

13. Miten yrityksenne uusien luottojen korkomarginaalit ovat kehittyneet viimeisen 24 kuukauden aikana?

○ Leventyneet merkittävästi
○ Leventyneet jonkin verran
○ Pysyneet ennallaan
○ Kaventuneet jonkin verran
○ Kaventuneet merkittävästi
○ En osaa sanoa
○ Ei uusia lainoja viimeisen 24kk aikana

14. Ovatko yrityksenne viimeisen 24 kuukauden aikana hankkimien uusien lainojen kovenantit muuttuneet aiemmasta?

○ Kiristyneet merkittävästi
○ Kiristyneet jonkin verran
○ Pysyneet ennallaan
○ Löystyneet jonkin verran
○ Löystyneet merkittävästi
○ En osaa sanoa
○ Lainamme eivät sisällä kovenantteja

15. Ovatko yrityksenne lainananatajat muuttaneet yrityksenne vakuuksina käyttämien omaisuuserien arvostusta viimeisen 24 kuukauden aikana verrattuna aiempaan?

○ Alentaneet merkittävästi
○ Alentaneet jonkin verran
○ Pitäneet ennallaan
○ Nostaneet jonkin verran
○ Nostaneet merkittävästi
○ En osaa sanoa

16. Ovatko yrityksenne viimeisen 24 kuukauden aikana hankkimien vakuudellisten luottojen vakuusvaatimukset määrällisesti muuttuneet aiemmasta?

○ Kasvaneet merkittävästi
○ Kasvaneet jonkin verran
○ Pysyneet ennallaan
○ Laskeneet jonkin verran
○ Laskeneet merkittävästi
○ En osaa sanoa

17. Miten yrityksenne käyttämän takauksen hinnoittelu on muuttunut viimeisen 24 kuukauden aikana aiempaan verrattuna?

○ Noussut merkittävästi
○ Noussut jonkin verran
○ Pysynyt ennallaan
○ Laskenut jonkin verran
○ Laskenut merkittävästi
○ En osaa sanoa

Yrityksen vieraan pääoman rahoitus – pääomasijoittajat ja riskienhallinta.

18. Kuinka hyvin yrityksessänne arvionne mukaan tunnetaan pääomasijoittajien tarjoamia vieraan pääoman rahoitusvaihtoehtoja ja -instrumentteja?

○ Ei lainkaan
○ Vähän
○ Jonkin verran
○ Hyvin
○ Erittäin hyvin
○ En osaa sanoa

19. Uskotteko, että vierasta pääomaa sijoittavan pääomasijoittajan osaamisesta ja kokemuksesta voisi olla tai on ollut hyötyä yrityksellenne?

○ Ei lainkaan
○ Vähän
○ Jonkin verran
○ Paljon
○ Erittäin paljon
○ En osaa sanoa

20. Arvionne mukaan, onko yrityksenne riskienhallinnan tasolla ollut merkitystä vieraan pääoman ehtoisen rahoituksen saatavuuteen?
(Esim. vaikuttanut rahoitusneuvotteluiden kestoon, rahoituksen ehtoihin tai lopulliseen lainapäätökseen)

○ Heikentänyt
○ Heikentänyt jonkin verran
○ Ei vaikutusta
○ Edistänyt jonkin verran
○ Edistänyt merkittävästi
○ En osaa sanoa

Vastaajien taustatiedot

21. Tehtävänimikkeenne?

○ Yrittäjä
○ Toimitusjohtaja
○ Talousjohtaja
○ Hallituksen puheenjohtaja
○ Muu johtavassa asemassa oleva toimihenkilö

22. Ikänne?

○ Alle 30 vuotta
○ 30-39 vuotta
○ 40-49 vuotta
○ 50-59 vuotta
○ Yli 59 vuotta

23. Onko yrityksenne ns. riippumaton PK-yritys?
* Riippumattomia yrityksiä ovat ne yritykset, joiden pääomasta tai äänivaltaisista osakkeista 25 prosenttia tai enemmän ei ole yhden sellaisen yrityksen omistuksessa tai sellaisten yritysten yhteisomistuksessa, joihin ei voida soveltaa tilanteen mukaan joko PK-yrityksen tai pienen yrityksen määritelmää.

○ KYLLÄ
○ EI

24. Miellättekö yrityksenne ns. perheyritykseksi?
* Määritelmämme mukaan perheyritykset ovat yhtiöitä, joissa yksi perhe tai suku omistaa vähintään 51 prosenttia yhtiön osakkeista. Perheillä on hallussaan pääosa johtoasemista, ja omistajilla on vastuu yrityksen päivittäisestä johtamisesta.

○ KYLLÄ
○ EI

25. Yrityksenne päätoimiala?

○ Teollisuus
○ Vähittäiskauppa
○ Rakentaminen
○ Tukkukauppa/-jakelu
○ Rahoitus, vakuutus, kiinteistöjen hallinta
○ Palvelut
○ Liikenne
○ Yleishyödyllinen yhteisö ("not-for-profit")
○ Jokin muu

26. Yrityksenne liikevaihto viimeksi päättyneellä tilikaudella?

○ Alle 2 miljoonaa euroa
○ 2 – 10 miljoonaa euroa
○ 10 – 50 miljoonaa euroa
○ Yli 50 miljoonaa euroa

27. Yrityksenne taseen loppusumma viimeksi päättyneellä tilikaudella?

○ Alle 2 miljoonaa euroa
○ 2 – 10 miljoonaa euroa
○ 10 – 43 miljoonaa euroa
○ Yli 43 miljoonaa euroa

28. Yrityksenne henkilöstön lukumäärä (täysipäiväiseksi muunnettuna)?

○ 1 – 9 henkilöä
○ 10 – 49 henkilöä
○ 50 – 249 henkilöä
○ 250 henkilöä tai enemmän

Jättämällä yhteystietonne osallistutte kirjalahjan arvontaan sekä saatte käyttöönne tutkimuksen tulokset niiden valmistuttua. Yhteystietonne ovat täysin luottamukselliset, eikä niitä käytetä vastausten yhteydessä.

Kiitokset vastauksistanne!

Appendix 5. Summary of all survey respondents.

Respondent's title	Frequency	Percent
Entrepreneur	80	59.3 %
CEO	37	27.4 %
CFO	4	3.0 %
Chairman of the board	5	3.7 %
Other, in manager position	9	6.7 %
	135	100 %

Respondent's age	Frequency	Percent
Under 30 years	1	0.7 %
30–39 years	25	18.5 %
40–49 years	35	25.9 %
50–59 years	55	40.7 %
Over 59 years	19	14.1 %
	135	100 %

SME independency [2]	Frequency	Percent
Independent	126	93.3 %
Non-independent	9	6.7 %
	135	100 %

Family enterprise [3]	Frequency	Percent
Yes	88	65.2 %
No	47	34.8 %
	135	100 %

Industry category	Frequency (per survey data)	Frequency, after reallocation of "other" category	Percent, after reallocation of "other" category
Manufacturing	35	37	27.4 %
Retail	7	8	5.9 %
Construction	12	12	8.9 %
Wholesale/Distribution	4	5	3.7 %
Finance, Insurance, Real Estate	3	4	3.0 %
Services	50	58	43.0 %
Transportation	7	8	5.9 %
Not-for-Profit	0	0	0.0 %
Other	17	3	2.2 %
	135	135	100 %

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[2] See chapter 4.2.1 for definition.
[3] See chapter 4.3 for definition.

Appendix 6. Summary of qualified survey respondents.

Respondent's title	Frequency	Percent
Entrepreneur	31	50.8 %
CEO	22	36.1 %
CFO	2	3.3 %
Chairman of the board	1	1.6 %
Other, in manager position	5	8.2 %
	61	100 %
Respondent's age	*Frequency*	*Percent*
Under 30 years	0	0.0 %
30–39 years	9	14.8 %
40–49 years	22	36.1 %
50–59 years	24	39.3 %
Over 59 years	6	9.8 %
	61	100 %
SME independency	*Frequency*	*Percent*
Independent	61	100 %
Non-independent	0	0.0 %
	61	100 %
Family enterprise	*Frequency*	*Percent*
Yes	39	63.9 %
No	22	36.1 %
	61	100 %

Industry category	Frequency (per survey data)	Frequency, after reallocation of "other" category	Percent, after reallocation of "other" category
Manufacturing	24	25	41.0 %
Retail	1	2	3.3 %
Construction	5	5	8.2 %
Wholesale/Distribution	2	2	3.3 %
Finance, Insurance, Real Estate	1	2	3.3 %
Services	16	22	36.1 %
Transportation	2	2	3.3 %
Not-for-Profit	0	0	0,0 %
Other	10	1	1.6 %
	61	61	100 %