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ENTERPRISE RISK MANAGEMENT APPLICATIONS AT BIST ISTANBUL
NON FINANCIAL COMPANIES

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İstanbul, December 2018

ABSTRACT

The purpose of this study is to investigate the profile of those who are responsible for risk management, the most important risks and their management, and insurance approach in non-financial companies in Turkey. In a world where uncertainties increase and rapid changes take place especially with digitalization, effective implementation of corporate governance has a more empowering effect on the assets in the competitive environment.

Risk management is an important system that is a part of all processes of the company, where all stakeholders are involved with the team game approach. In line with this argument and the growing importance of risk management within countries, this study aims to answer the question of the effectiveness, proficiency and approaches of risk management within Turkey. Considering the fact that Turkey is currently a developing country that has made great strides towards increasing international competitiveness and aims to adapt to the international risk management platforms quickly to further its national economic policy- it is important to highlight the level of application in Turkey.

The results will prove useful for the (1). Government: as currently guidelines are being prepared in order to increase the overall health of organizations in regards to risk management (2). Insurance firms: as firm policy/behavior information is important for insurance companies, (3). Financial firms: as firms providing a line of credit to Turkish firms will be provided information other than what is available to the general public through financial statements, and finally (4). Non- Financial firms: as it will allow for them to conduct a general checkup and see their general improvement areas about their methods, and most importantly (5). Risk management literature: as it provides hard to achieve insider information directly from high level risk managers within top industry firms.

The contribution of this data and analysis could prove useful for researchers conducting analysis under risk management area. Standards and approaches related to risk management in the world and in Turkey have been revealed with a literature conducted search. Thus, the profile of those who are responsible for risk management and related approaches will be analyzed. This is conducted in order to achieve information on the risk management approaches employed. The survey questions were generated via analyzing the related risk management literature and incorporating elements from the international “European Risk and Insurance Report“ and “Federation of European Risk Management Association Survey” and “Risk Management Society Survey”. The combination of these questions were listed under our questionnaire. The draft version of the questionnaire was pilot tested with risk managers and modifications were made to the scale. The final version of the sample consisted of the risk managers from public firms and had an observation size of 59. The survey was prepared and sent to the respondents online via Survey Monkey. The final version of the survey was sent to the full list of publicly available non-financial firms on BIST. The overall response rate was 29%. The sample of firms consists of the highest industrialized companies in Turkey and 20 respondents are included under top 100 of ISO 500 by 2017.

Each survey question was analyzed individually via (descriptive statistics), high-low frequency analysis, percentage and cross-tabulation and general frequency analysis. Moreover, related questions were combined and analyzed together via cross-tabulation. The results of our analysis show that statutory regulators regarding risk management in financial and insurance sector in Turkey is bound to mandatory conditions by being adapted from Europe, their practices are not different from the results in the world, as they fulfill their obligations related to the early detection committee of the law.

Keywords: Risk Management, Enterprise Risk Management, Descriptive Statistics, Turkey, BIST, Non-Financial Firms

ÖZET

Bu çalışmanın amacı, Türkiye'de finansal olmayan şirketlerde risk yönetiminden sorumlu kişilerin profilini, en önemli riskler ile bu risklerin yönetimini ve sigorta yaklaşımını incelemektir. Belirsizliklerin arttığı ve özellikle dijitalleşmeyle hızlı değişimlerin yaşandığı dünyamızda şirketlerde kurumsal yönetimin etkin uygulanması rekabet ortamında varlıklarını daha güçlendirici etkiye sahiptir.

Risk yönetimi, takım çalışması yaklaşımı ile tüm paydaşların dahil olduğu tüm şirket süreçlerinin bir parçası olan önemli bir sistemdir. Bu argüman ve risk yönetiminin ülkeler içinde artan önemi doğrultusunda, bu çalışma Türkiye'de risk yönetiminin etkinliği, yeterliliği ve yaklaşımları sorusunu yanıtlamayı amaçlamaktadır. Türkiye'nin şu anda uluslararası rekabet gücünün artırılmasına yönelik büyük adımlar atmış ve ulusal ekonomi politikasını daha da ileriye götürmek için uluslararası risk yönetimi platformlarına hızla uyum sağlamayı hedefleyen gelişmekte olan bir ülke olduğu göz önüne alındığında, Türkiye'nin uygulama düzeyini vurgulamak önemlidir.

(1). Ana esaslar mevcut durumda risk yönetimine ilişkin olarak organizasyonların genel sağlığını arttırmak için hazırlanacağından (2). sigorta şirketleri: Sigorta şirketleri için firma politika/tutum bilgisi önemli olduğundan ve son olarak (3). finansal firmalar: Türk şirketlerine bir kredi limitini veren firmalara mali tablolar aracılığıyla kamuya açık olan bilgiler dışında bilgiler sağlanacağından (4). finansal olmayan firmalar: Genel bir kontrol yaptırılmalarına ve kendi yöntemleri ile ilgili genel iyileştirme alanlarını görmelerine izin vereceğinden, ve en önemlisi (5). risk yönetimi literatürü: en üst düzey endüstri şirketlerinde direkt olarak üst düzey risk yöneticilerinden içeriden bilgi elde etmeyi zorlaştırdığından sonuçlar hükümet için yararlı olacaktır. Bu verilerin ve analizlerin katkısı, risk yönetimi alanında analiz yürüten araştırmacılar için yararlı olabilir. Dünyada ve Türkiye'de risk yönetimiyle ilgili standartlar ve yaklaşımlar yapılan literatür taraması ile ortaya koyulmuştur. Böylece risk yönetiminden sorumlu olanların profili ve ilgili yaklaşımlar analiz edilecektir. Bu, kullanılan risk yönetimi yaklaşımları hakkında bilgi elde etmek amacıyla yürütülmektedir.

Anket soruları, ilgili risk yönetimi literatürü incelenerek ve uluslararası “Avrupa Risk ve Sigorta Raporu” ve “FERMA Anketi” ve “RIMS Anketi” nden unsurlar kullanılarak oluşturulmuştur. Bu soruların kombinasyonu anketimizin altında listelenmiştir. Anketin taslak versiyonu risk yöneticileri ile pilot olarak test edilmiş ve ölçekte değişiklikler yapılmıştır. Örneklemin son hali kamu şirketlerinden risk yöneticilerinden oluşmaktaydı ve 59'luk bir gözlem büyüklüğüne sahipti. Anket hazırlandı ve katılımcılara Survey Monkey aracılığıyla çevrimiçi olarak yollandı. Anketin son versiyonu BIST'teki halka açık firmalar listesine gönderildi. Toplam yanıt oranı %29 oldu. Firmaların örnekleme, Türkiye'deki en yüksek sanayileşmiş şirketlerden oluşmakta olup, 20 katılımcı 2017 yılına kadar ISO 500 ilk 100'ü kapsamındadır.

Her anket sorusu bireysel olarak (betimleyici istatistik). yüksek-düşük frekans analizi, yüzde ve çapraz tablolama ve genel frekans analizi ile analiz edilmiştir. Ayrıca, ilgili sorular çapraz tablolama yoluyla bir araya getirilmiş ve birlikte analiz edilmiştir. Analiz sonuçlarımız, Türkiye'de finansal ve sigorta sektöründeki risk yönetimine ilişkin yasal düzenlemelerin Avrupa'dan uyarlanarak zorunlu koşullara bağlandığını, riskin erken saptanması komitesiyle ilgili yükümlülüklerini yerine getirmeleriyle beraber uygulamalarının dünyadaki sonuçlardan çok da farklı olmadığını göstermektedir.

Anahtar Kelimeler:Risk Yönetimi, Kurumsal Risk Yönetimi, Tanımlayıcı İstatistikler, Türkiye, BIST, Finansal Olmayan Şirketler

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INTRODUCTION

Every company has a reason and vision of existence. Achieving sustainability for many years within this vision is one of the foremost objectives. In order to progress on this path, targets are determined and action plans are made about it, and then applied. The conclusions that may be encountered when these plans are made are also assessed. Risk is defined as the factors that may lead to a positive or negative deviation of these results.

These factors can lead to companies not only getting great opportunities but also completely disappearing. It is of great importance for them to measure the effects as early as possible. Systems that can be used to measure the risks as companies increase in size and experience have been established. Different risks that may be encountered using different systems and methods are regularly monitored.

Risk management standards have also been set by different institutions in order to guide the systems that companies have created in international risk management. Some examples of risk management standard are established by ISO 31000, IRM, COSO and CoCo. Solvency describes for insurance, Basel explains for banking the context of risk management.

In addition, organizations such as FERMA, in Europe and RIMS in the US, are also contributing to the development of risk management. They also find out how risk management at the international level is done by companies through survey. For example, FERMA has been conducting biannually risk management benchmarking survey since 2002. Similarly, RIMS did many surveys especially for US companies. Many countries including Turkey use the risk management regulation at the banking and insurance sector. These regulations may contribute also to adapt better risk management standards also for the real sector. In fact, for US and UK these are already taken in place. In Turkey, the regulations are not based on a standard for the real sector, but there is only a risk committee arrangement for the companies from İstanbul stock exchange.

The practices in crisis management also give the experience to cope with the risk mitigations. In fact, Turkey lived through the experience of its own political and economic crisis in addition to the global crisis, according to some of the countries in this regard may even be more durable and preparedness. The Turkish Economy witnessed many economic crises since its foundation but the frequency of them increased after the liberalization policies as illustrated by the 1994, 1998-99, 2000-01, 2006, 2008-09 financial crises (Ari,2014).

The development areas may be created with the risk management approach and risk management methods applied in the present risk management in overseas countries by comparing the risk management approach in the area of real sector in Turkey. Thanks to the survey by the participation of the main companies from the real sector, it may be found out the development areas by showing the approaches for each.

As mentioned above, risk management is an important system that is a part of all processes of the company that involves all levels of stakeholders and in a world where uncertainties increase and rapid changes take place the effective implementation of corporate governance has an empowering effect within the competitive environment. Coupled with Turkey's current developing country status and strides made towards international competitiveness via quick adaptation to the international risk management platforms- it is important to highlight the level of risk management application in Turkey. The comparison of these Turkish risk management approaches with studies conducted at an international level will allow for pinpointing the level of proficiency of activities.

These results will also prove useful for governments in the preparation of detailed risk management guidelines, insurance firms in determining firm policy/behavior, financial firms in providing information above what is available to the general public, non-financial firms in conducting a general checkup on their improvement areas and researchers in presenting valuable information of hard to reach practice data from top level industry firms. Thus, the research question of this study is as follows, "Is the current risk management practices in Turkey different in comparison to the international platform?".

The study argues that the results gained from the Turkish results will be different from the international practices because of the current Turkish legislation differences and corporate practice application. Moreover, the political instability and the economic conditions of Turkey would distinguish the Turkish position.

The rest of the study is organized as follows. Chapter 1 presents information regarding the conceptual and theoretical framework for risk management, Chapter 2 highlights risk management institutions, principles and risk management approaches, Chapter 3 presents information on the survey development and implementation and finally, Chapter 4 concludes.



I. CONCEPTUAL and THEORETICAL FRAMEWORK FOR RISK MANAGEMENT

1. THE BASIC CONCEPTS OF RISK MANAGEMENT

1.1 Definition and History Of Risk

1.1.1 Definition of Risk

There is no commonly accepted definition for the term risk--either in the sciences or in public understanding. All risk concepts have one element in common, however: the distinction between reality and possibility (Renn,1998).

If it's considered that the origin of the risk phrase comes from "rescience", which is inspired by obstacles such as stone, rock, and cliffs in Latin, the unique interpretation that may be done that, it develops against the negative elements. However, it can only be taken as a way to dare to surrender meaning when it comes to the Italian language "risicare". That means, there's an option here.

In the Chinese language, risk is interpreted as the combination of two figures, danger and opportunity, as below. This reminds us always that, upsides exist, but it should always be taken into the considerations of dangers, both in good and bad times (IFC, 2012).



Figure 1 Chinese Character

Another origin might be through the Arabic word *risq* or Latin *risicum* that defines “chance outcomes in general and have neither positive nor negative implication. Knight (1921). defined risk together uncertainty as the probability of something undesirable happening. Blackwell and Girshick (1954). define risk as a function of the combination of the loss function, which stems from uncertainty, and the decision function. The article 2.1 of ISO 31000 in 2009 defined risk as the effect of uncertainty in the targets. This effect may also be positive, negative or a different deviation.

It should not be thought that the risks related to job security will be transformed into a fictitious one, as there are no human life and health precautions for many corporate companies. The IIA also summarizes the impact that can be achieved on the way to achieving the objectives as in other definitions. Here the effect is two components of intensity and probability important.

According to IRM, risk is a combination of the probability of an event and its consequences, which can range from positive to negative. Ward defined risk as the cumulative effect of the probability of uncertain occurrences that may have a positive or negative effect on a project’s objectives. COSO's new framework, which was announced in 2017, is culture, possibilities and applications that are integrated into the organization's ability to create value, protect and realize, manage risk, and identify and execute the strategy. Risk is expected variance in profits, losses or cash flows arising from an uncertain event (Banks, 2004).

Finally, Hopkin defined the risk as “an event with the ability to impact the effectiveness and efficiency of the core processes of an organization” (Hopkin, 2017).

In our daily lives, we can also face many choices about taking risks. For example, planning to launch a food business in Italy as an entrepreneur may be such an event. There are many risks here, such as the risk of marketing a product that is not common for that country, the risks associated with food-handling legislation, or even the risks associated with working in

the country. On the other hand, there is an opportunity to benefit from profit if things go smoothly. We proceed at our daily decisions considering all the risks that we are aware of.

The individual's sensitivity to the individual's presence and behavior also varies. Some may monitor events in detail, be aware of risks and take precautions; others may be unaware of them.

1.1.2 History of Risk

There was a tendency in the ancient civilizations to assess the future predictions in the presence of the prophets and to leave the events to flow without studying or preparing them.

For example, in nature events they were thinking that they sacrificed the most holy sacrifices of those who were worshiped at that time. The Prophet guided the difficult situations. By foresight, the roots of risk management extend to the Indian-Arab numeral system, from the 6th century.

The system which was widespread throughout the Muslim world during the Middle Ages was not used because it was considered a sin in Europe. Along with the new age, in addition to the use of the printing press in Europe, the calculation of the probability with the figures and the risk measurements have begun.

Luca Pacioli (1445-1514), one of the first mathematicians of this period and also the pioneer of the spread of double accounting, pioneered the work to be developed in the future, even if it reached wrong results with the division calculations as stated in Burstein.(1996).

About 200 years after his famous philosopher, mathematician and physicist Blaise Pascal (1623-1662). developed the probability theorem beyond Pacioli. Gottfried von Leibniz (1646-1716). and Daniel Bernoulli (1700-1782). began to use statistics effectively. Abraham De Moivre (1667-1754). revealed the normal distribution which is an important reference in statistics.

Thomas Bayes (1701-1761). made use of historical data to create new data estimates and has made significant progress in terms of statistics. Harry Markowitz (1927-). showed that placing the eggs in different baskets is the best way to stay in the risk strategy while constructing the portfolio (Burnstein, 1996).

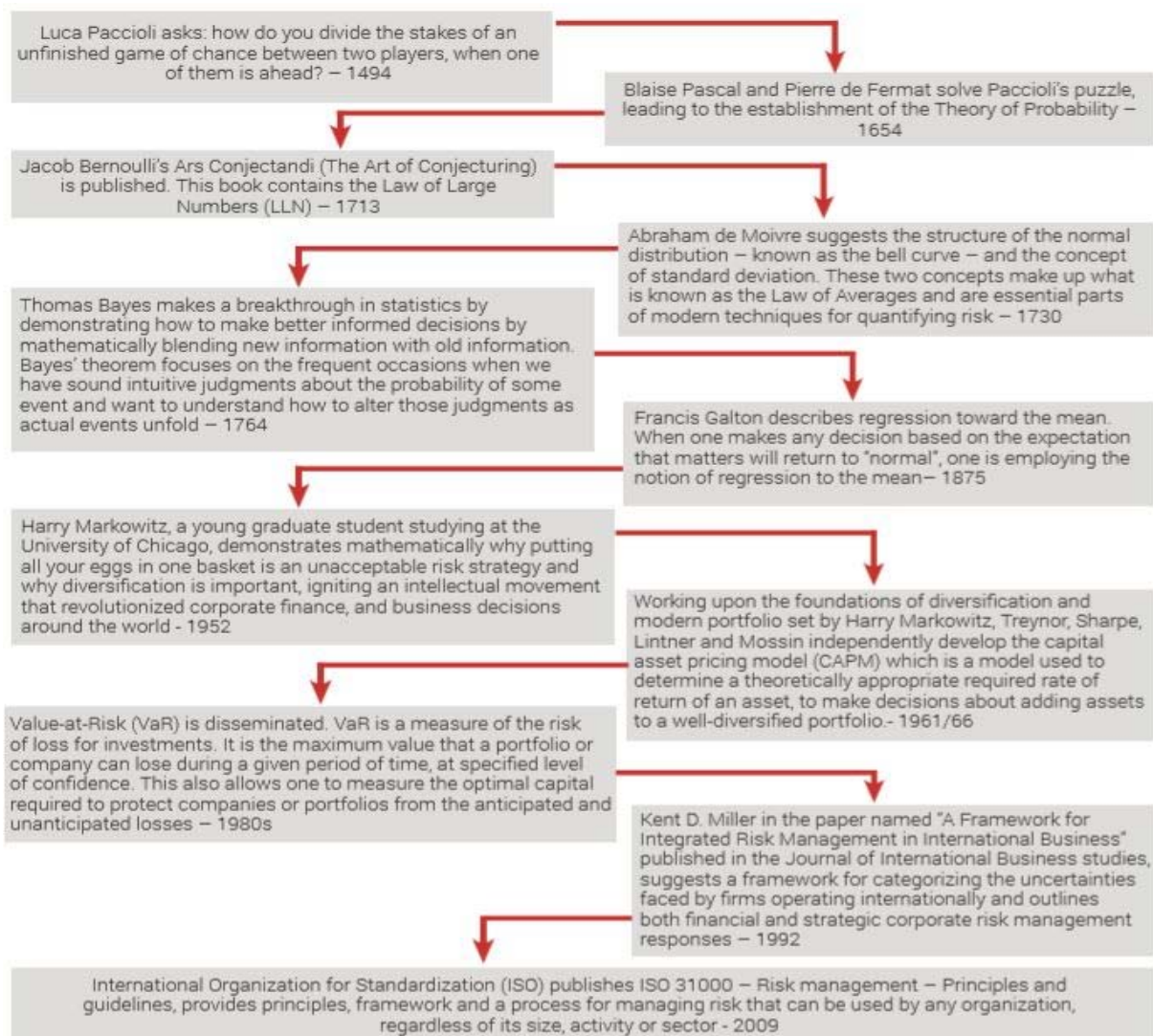


Figure 2 Risk Management History – PECB-2010

1.2 Impact of Risks on Organizations

In the most general sense, companies are institutions that have been created to develop products and provide them to the needy, primarily to provide benefits to themselves and then to collect. Establishing a vision and strategizing in connection with it makes it easy to set goals and determine benefits.

It may be said that there is a risk of deviations in this path. As risk, the majority can think of many negative events. Meanwhile in the recent approaches, it is also seen as a risk not to use the opportunities as well. The more someone is aware of the risks, the more he or she prepares himself or herself; this allows him or her to reach the goals more easily.

The sensitivity of the individual or the company also varies in his presence and behavior. While some business partners monitor the company's operations in detail, others are unaware of the damage caused by operating the small risks. It is easier to see the risks as they move down the hierarchy of the hierarchy. People who are involved in the project, especially the employees themselves, can see the difficulties or opportunities in the project more easily.

But they do not see the project as a whole, so they have difficulty seeing its importance. That is why a very good mechanism must be established to convey all the risks in the risk management system and convey information from up and down.

Risk is an outbreak that is uncertain. Nobody can know if it will happen. It will certainly happen, but it will not be clear when (the risk of death). will occur in the future. As it can affect a single person, it can affect a group, the people and the country. It is very difficult to know what the size of the rattle will be.

Experienced damage can affect the relevant institutions psychologically, socially, institutionally and culturally. This interaction occurs in two stages: the communication of risk and the personal or social response to it.

Risk management should be compatible with organizational culture. Management support is required for this. A risk-based, accountable system should be created by assigning risk. Decisions taken in business life may not be as clear as black and white. As a result, risks are taken into account when the strategy of the organization is formulated so that the company can reach the optimum point on the way. Therefore, scientific management as well as risk management can be considered as art.

In addition to managing risk, the company management should also provide shareholders and Board of Directors with necessary information when necessary. The strategy can also be overtaken depending on these results. In modern risk management, the main functions to be managed are hazard risk management, internal control, internal audit and legislative conformity (Hampton, 2014).

Organizations can improve their strategic, operational, tactical and legislative development by managing their risks well. Damages that may be caused by the lack of necessary preparations in various surprises that may come to the fair will not be welcomed by the shareholders. The level of the risk is the combination of its effect and the effect that will occur if it occurs.

Hazard risks are the risks that create damage if occur. These are the first type of risks that were managed in the history. Cyber attacks, theft, abuse, damage caused by disasters can have significant effects. Such risks are usually insurable, or if they occur by taking measures, they can be minimized.

When the risks are assessed, measures can be taken to find out what conditions the shareholders have threatened to anticipate from the company. When risks are added to the company's goals, it is important that they are developed in full compliance with these goals. As a result, the measures to be taken may be more effective and meaningful.

There may also be an award when the risk is taken in the organization. For example, higher profitability can be targeted in the future for a new product launch. Here, according to the risk appetite, you can start with low profits, even though you are at high risk in the first place, but higher profits can be obtained in the following stages. In the period when the product reaches to the collective, the risk of decreasing profitability may also emerge. Organizations may behave differently against risks. Some people may want to take risks, others may not. This can vary depending on the attitude of the sector, the manager or the shareholders.

Control risks are the most difficult to be defined and they are usually related to projects. Projects are aimed at a target time and budget and to achieve a desired result. Deviations occurring during the project must also be manageable with tolerable measures.

A bow-tie system was created to describe risk management activities. Here, risk effects that cause harm can harm people, assets, processes or products from strategic, tactical, operational or regulatory aspects. Their impact can also be negative in terms of financial, infrastructure, reputation or market. When identified on bow-tie risks, preventive measures and responses to be given when they occur are also indicated (Hopkin,2017). Companies began to take risks more seriously, especially after 2008 financial crisis in global markets as explained in the paper for Kosova case (Govori,2012).

1.3 Types of Risks

ISO 31000 does not recommend a specific risk classification system and suggests that each institution should develop its own facts, ie there is no generally accepted risk classification system. Each company can make a classification according to its own facts. Risks can be short, medium and long-term depending on the duration of their effects.

Long-term risks are the risks that their effects can be seen after 5 years and afterwards, for example following to a new investment. Mid-term risks, for example, are the risks that can be seen up to a year as a result of a project that can be adapted in the short-term. Short-term risks

are the risks immediately taken during operations. These types of risks are the easiest to plan and implement action plans and additionally to be insured.

In terms of resources, it can also be classified as credit risk, exchange risk, interest risk. The nature of the financial situation, infrastructure, and image-like effects can be the criterion of the category. In addition, the process to be affected, or by its nature, can be divided into, for example, people, physics, environment, processes and products.

For financial firms, Basel has the categoration of operating risk, financial risk, market-based risk and other risks, where risk-weighted asset is calculated by summing them up (BIS, 2017). Another example may be as financial risk, operational risk, strategic risk and hazard risk, where the responsibilities may be assigned more easily among the departments (IFC, 2012).

Apart from all of this, the most common way to classify risks as hazard(pure) risks, control(operational) risks, and opportunity(speculative) risks. This classification is used widely because of the simplicity to prepare action plans accordingly.

1.3.1 Hazard risks

Hazard means a source of potential harm. Harm is defined as causing loss or damage to people, assets, the environment or the organization. Such risks are events that are very difficult to transform into financial statements as it can be understood from the name, and bring about harm when they happen. They are often insurable risks. Historically, the first application of risk management has been designed for them.

It may also be defined as pure risks and it has only has prospect of downside. The one that has the possibility of upside or downside is called as speculative (Banks, 2004). Business health and safety, property damage, corrupt products, criminal attacks are the main examples.

OECD prepared a report for global modelling of natural hazard risks. In this report, it's concluded that there should be international collaboration to assess this kind of risks and there is a strong demand for data mining, data harmonisation and data standards (OECD, 2012). Mostly, they are insured or there may be preventive actions to minimize it as much as possible, and they are illustrated as the red color.

1.3.2 Control risks

These risks are related for the unknowns and unexpected events. They are mostly in the project management processes. There exist some time terms, costs and specified quality for the activities, which may also be related, mostly one time occurring. They are usually treated by risk adverse view, but because of the uncertainty, the manager may consider the eventual outcomes within a range. Surely, the purpose is to reduce the variances between the prediction and the actual result.

The typical examples of control risks occur at the project management, for example an implementation of a new computer program, where the adaptation of the new system should be well managed. They are mostly illustrated by the yellow color.

1.3.3 Speculative risks

Organizations may take some commercial and marketing risks in order to optimize its benefits. In this scope, they may also do the investments. There may be also an opportunity loss if these risks are not taken properly. The people may not also be aware of them, or it may be too late when it's understood to get a benefit. Surely, the intention may be to gain, but at the end a loss may occur.

The typical examples of pure risks are the stock exchange investments, moving the business to a new location, launching new product. They are mostly illustrated by the green color.

1.4 Risk management history

The concept of risk management, which preceded the heading of insurance management, emerged only in the 1960s. Sneder (1956) observed that there were no books on risk management at the time, and no universities offered courses in the subject. The first two academic books were published by Mehr and Hedges (1963) and Williams and Heins (1964), according to Dionne (2018).

Managers who buy insurance start to undertake risk management duties after these dates. Furthermore, risk management in insurance acquisitions is now considered. One of the first examples seen on these dates is the fact that the Hartford Steam Gear Control and the control word in the insurance company before the insurance is important in the sense that it reduces the possibility of damage by taking the risk measure. There was no insurance to take the control product. Indeed, the damage to the fuse was not expected as the controlled boiler was unlikely to explode. Again, Massey Ferguson made an appointment in 1963 as a risk manager.

During the 1960's, contingent planning activities were developed including work-related illnesses and accidents (Dionne, 2018). In 1975, the American Society of Insurance platform changed its name to the Risk & Insurance Management Society, which provided strong evidence that it was valued together with risky insurance.

Captives, which began to become widespread in the following stages, were formed within the organizations. It has been used more frequently for washer, such as vehicle accidents or occupational accidents, which are especially frequent and do not cause much damage. In the 1980s, legal responsibilities began to become part of our business models.

In 1986 Roger Smith was elected CEO of the year's water; GM also had significant success; it did not foresee major losses to occur in the years to come when he did not write about the pension plans alone.

In the 1990s, the great risks of nuclear power plants operated for years in the Soviet Union appeared. After the Andrew hurricane in 1992, many roofs were not built as a result of proper analysis, so the fleet caused major damage. However, these damages could be prevented to a great extent with proper construction.

By the end of the 1990s, as the data began to be shared via the Internet, cybercrime was introduced. During 2000's, following to the poor performance of risk management, the Sarbanes-Oxley regulation was introduced, to include the governance rules to the companies.(Dionne, 2018). Sarbanes-Oxley compliance requirements raised the role and responsibility of audit companies while taking aim at the top management with tough new rules that call for increased accountability from top company executives. Corporate disclosure, compliance oversight, controls monitoring, company training, and—the practice of public accounting—all have been impacted by Sarbanes-Oxley. In this respect, management should assess the effectiveness of the company's internal controls over financial reporting and include its findings in the company's annual report to shareholders (PWC).

The terrorist attacks of the twin towers in 2001 have also led to a large-foreseeable difficulty. 2005 Catastrophic hurricanes have also led to major environmental disasters. The 2008 financial crisis questioned the effectiveness of risk management. It was not because the inefficiency of the regulations and governance, but rather their application and enforcement (Dionne 2018).

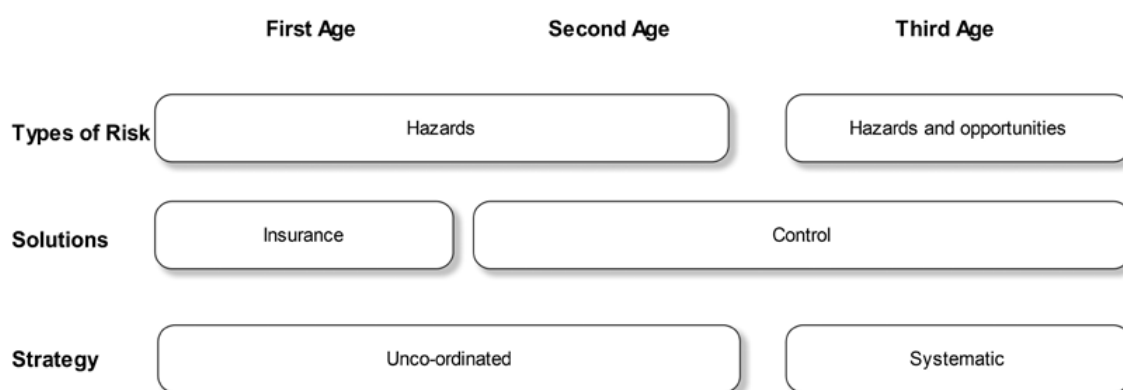


Figure 3 Risk management evolution – (Sadgrove -2015)

In today's existence of such powerful nuclear weapons, the risks that can not be controlled or challenged in the world have increased. Risk management has evolved throughout history and has become an important profession. In some risk areas, they have started to practice this profession in particular. For example, the job health and safety officer must be competent in managing the risks. Other than that, risk management can be performed in special areas such as financial risk, IT risk.

1.5 Risk management frame

1.5.1 Risk management definition

Until 1950s, there was no systematic method of working with risks other than insurance. Especially in the US these years, the increase in insurance costs and their coverage have not been able to fully respond to the needs of the companies, and they have focused on preventing them.

As a result of these efforts, organizations have improved risk management by seeing more of the risks that can't be insured (Hopkin, 2017). Even though the definition of Risk Management is made by many organizations, the most commonly recognized definition is: The most beneficial result in an organization is the acquisition activity by deviating at least from this result. Risk Management is a continuously developing discipline. Each function in the organization tries to fulfill this function in its own activities.

One of the most obvious ones is called occupational health and safety. Other examples include project risk management; financial risk management, medical risk management, business health and safety risk management, and IT risk management, as well as quality managers working within the framework of ISO 9000. In fact, these disciplines become so specialized that they become an important part of core business rather than a part of risk management.

The different definitions of risk management are as follows:

IRM (2014).: Process which aims to help the organisation understand, evaluate and take action on all of their risks, with a view to increasing the probability of success and reducing the likelihood of failure.

ISO 31000 (2009).: Coordinated activities to direct and control an organisation with regard to risk.

Hopkin (2012).: The set of activities within an organisation that is undertaken to deliver the most favourable outcome and reduce the volatility or variability of that outcome.

HM Treasury(2004).: All the processes involved in identifying, assessing and judging risks, assigning ownership, taking actions to mitigating or anticipating them, as well as monitoring and reviewing the process.

Caver (1985).: The method of managing that concentrates on identifying and controlling the areas or events that have a potential to cause unwanted change.. it is no more and no less than informed (Hopkin, 2017).

1.5.2 Risk Management techniques

The risk management process is summarized in words starting with the letters 8R and 4T in English: (Hopkin,2017).

- Recognition: identification of risk
- Rating: Riskin Rating
- Ranking: evaluation of risk
- Responding: do not respond
 - Tolerate: do not toss
 - Treat: Do not intervene
 - Transfer: transfer

- Terminate: termination
- Resourcing: resource allocation
- Reaction: do not react
- Reporting: reporting of risks
- Reviewing: reviewing the risk management framework

Risk managers should execute their processes dynamically.

1.5.3 Principles and aims of risk management

The main principle of risk management is the value of the company. So the best result is designed to provide you with the lowest volatility.

In the main frame:

- proportionate to all of the organization
- co-ordinated with other business units
- understandable, systematic and organized
- compliant with the procedures and protocols
- Dynamical, being open to changes is the main presenter of risk management.

According to this structure, the company's objectives and the starting points of risk management should be the same.

The main objectives of risk management are:

- Legislation must comply with the requirements such as ethics.
- Internal control and risk management should be monitored by the management committees in accordance with risk principles.
- Data must be provided to make the right decision for risk management activities
- Processes must be effective and efficient (Hopkin 2017).

1.6 Risk management standards

Risk management is a rapidly developing discipline and there are many and varied views and descriptions of what risk management involves, how it should be conducted and what it is for. Some form of standard is needed to ensure that there is an agreed:

- terminology related to the words used
- process by which risk management can be carried out
- organisation structure for risk management
- objective for risk management

Importantly, the standard recognizes that risk has both an upside and a downside (IRM,2002). The first established risk standard was launched in Australia in 1995. Later on, similar innovations were made in many countries such as Canada, Japan, USA. In 2004, COSO, based on corporate risk management, established the ISO 31000 standard in 2009. The risk management standard defines the risk management process definition together with the proposed framework. Since the COSO approach is also included within the SOX requirements, it has become mandatory for US companies to operate according to the New York stock exchange. Most of the standards involve similar processes.

Risk management process can be defined by risk architecture, strategy and protocols. The COSO cube is designed to serve both risk management and internal control. According to this cottage, the activities are interrelated. It is directly linked to the lenses in this frame. Here, the 8 phases of risk management have been carried out from top management down to the organization in terms of strategic, operational, reporting and legislative risks.



Figure 4 COSO cube (2009).

In ISO 31000, the risk is assessed by establishing the context and risk response is given. Here, both monitoring and communication and control are carried out. ISO 31000 2018 February, COSO in September 2017 instead of the cube the helix shape update is diffused.



Figure 5 COSO helix shape (2017).

According to ISO 31000, the first stage of risk management is to establish a context. Within the framework of risk management, risk architecture, strategies and protocols need to be established as illustrated in the table below.



Figure 6 Components of RM network – IRM

With the support of the organization in this framework, it is necessary to define the systems of the internal and external aspects. Why should such an organization be important to the whole organization should be well communicated.

One of the important issues here is that the risk appetite and its criteria must be presented together with the above mentioned structures. The inner perspective is related to the culture of the organization. How decisions are made is linked to this. External perspective is related to shareholder expectations, competitors' situations, industry legislation and general economic outlook.

The risk management context also explains who will be responsible for and responsible for these activities. Within the ISO 9001: 2015 quality standards, this phase is also described as a component of strategic planning. At this stage, how to record the risks is also designed.

1.7 Enterprise risk management

1.7.1 Definition of enterprise risk management

Enterprise Risk Management (ERM). emphasizes a comprehensive, holistic approach to managing risk, shifting away from a “silo-ed” approach of separately handling each organizational risk. ERM also views risk management as a value-creating activity, and not just a mitigation activity (IFC, 2017).

Enterprise risk management consists of active and intrusive processes that (1). are capable of challenging existing assumptions about the world within and outside the organization; (2). communicate risk information with the use of distinct tools (such as risk maps, stress tests, and scenarios).; (3). collectively address gaps in the control of risks that other control functions (such as internal audit and other boundary controls). leave unaddressed; and, in doing so, (4). complement—but do not displace—existing management control practices (Wilhelms,2014).

Recently, risk management has developed for some disciplines such as financial, project management, occupational health and safety. There is also a responsibility to guide risk management from a more general perspective. The main approach here is to manage risk management from the different authorities of the relevant units in the organization through the general approach. It may be the case that the traditional approach has insufficient or even misleading results if there are risks involved. The Enterprise Risk Management approach provides comprehensive assessment opportunities by taking into account the objectives and approaches to the issue.

The types of risks may be categorized differently but shown in relation with each other at the enterprise risk management. For example, in the presentation of MIT, risk types are categorized at the risk quadrant as below:

ENTERPRISE RISK MANAGEMENT



Figure 7 Risk quadrants (Andrews- MIT presentation-2015).

The research evidence reveals that weaknesses and shortcomings in current risk management practice are both “art” and “science” related. The “science” of risk management comprises of the formal tools and techniques used to identify, evaluate and monitor potential threats to the organization, and the “art” of risk management comprises of the softer skills needed to identify and manage the more qualitative, people-related risks and to effectively integrate risk management with business strategy.

In the case of reputational risk management, for example, “art” is important for understanding organizational and stakeholder “politics”; for effective communications to positively influence customers’ and public perceptions of the brand, and for developing the types of trust-based relationships that are important when the organization has little direct control over the day-to-day actions of employees or suppliers.

But “science” is also important for the effective use of IT and information systems to capture, analyze and monitor data on reputational risks; to ensure data systems are adequately protected against cyber-attacks, malware and other security breaches and to apply formal risk analysis techniques to reputational forms of risk.

Similarly, the right combination of “art” and “science” must be achieved for effective identification and management of operational and transformational risks, and in the overall adoption of Enterprise Risk Management (ERM) solutions and the adoption of a strategic approach to risk management (Schroeder,2016).

Risk management provides the necessary methods and tools for this. The task of Central Risk Management is not to manage the risk. Responsible for managing business is the unit that owns the business process. The most important thing is the reduction of surprises. To calculate the adjusted return according to the final target risk and allocate the capital accordingly.

In the adoption of Enterprise Risk Management, companies must progress in accordance with their own cultural realities. When an organization manages its existing risks, it can follow two types of paths that are completely different from each other.

The first is to manage existing risks; the second is to consider all of its risks as part of a spectrum and manage all of its risks as a whole within the framework of a risk management program. The second method is generally called Enterprise Risk Management.

Classic Risk Management- Enterprise Risk Management

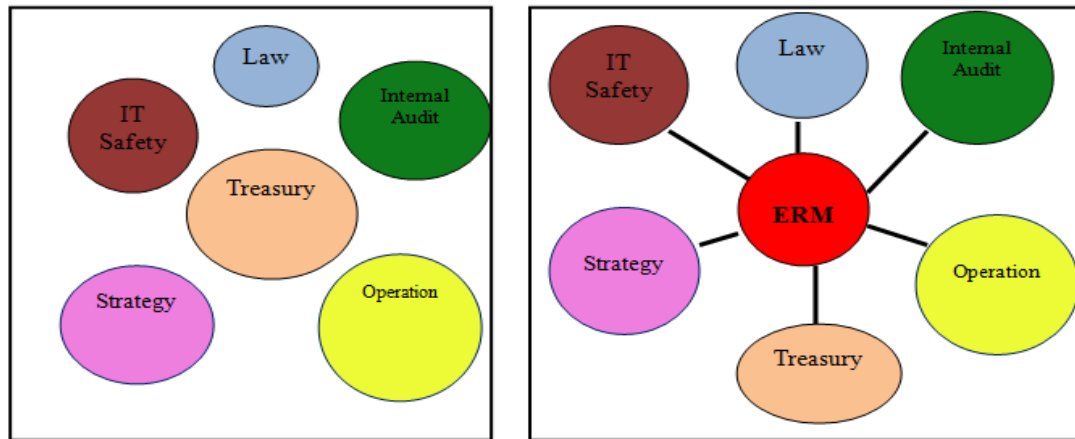


Figure 8 Classic Risk Management- Enterprise Risk Management

There are various definitions related to Enterprise Risk Management, to manage and manage all the risks according to this view and ingenuity in order to provide the company's strategic and financial objectives with the expected and least deviation.

Another one defines as the process of identifying major risks that confront an organization, forecasting the significance of those risks in a systematic and coordinated plan, implementing the plan, and holding the key individuals responsible for managing critical risks within the scope of their responsibilities (Hampton, 2009).

Meanwhile, according to Cican, risk management process is not radically changed. Enterprise risk management is only an improved version of the traditional risk management, created by expanding its scope (Cican,2013).

Enterprise risk management approach should contain four components according to COSO framework:

- a strategic activity, addressing “potential events” that threaten the achievement of strategic objectives,
- a governance activity, involving participation and oversight at multiple levels of management, and
- a monitoring activity, based on the cybernetic control ideal of objective-setting (in the form of risk limits or risk appetite), measurement, feedback, and corrective action
- reporting activity; which sets the reliability of the reporting

1.7.2. Enterprise Risk Management processes

The risk management process as defined in ISO 31000:2018 is presented below:

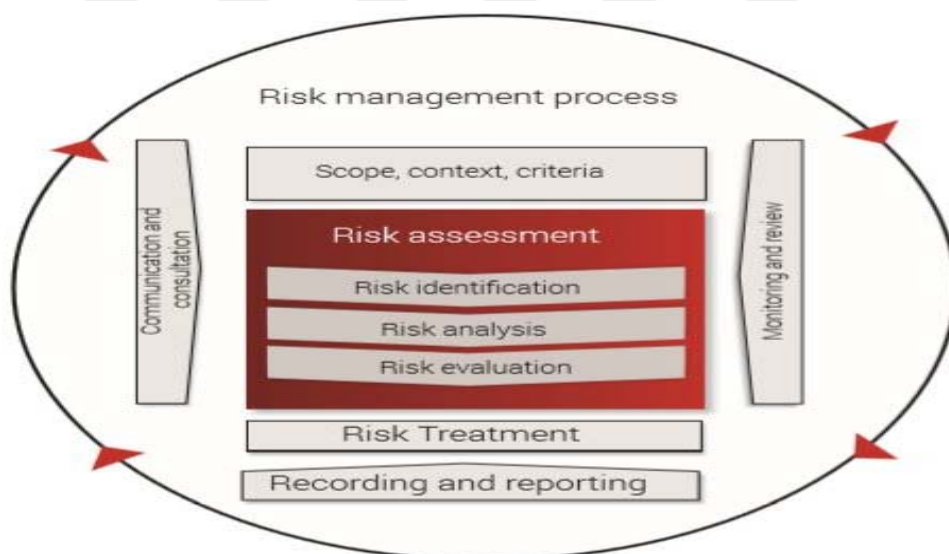


Figure 9 ISO 31000 Risk management process – PECB-2018

The main purpose of the risk management process is to enable the organization to assess the existing or potential risks that may be faced, evaluate the risks by comparing the risk analysis results with the established risk criteria, and treat such risks using the risk treatment

options. The organization should use such process in the decision making process (PECB,2018).

Problem solving for planning and budgeting and systematic risk facilitate decisions on folding, transferring, reducing and avoiding. The holistic ERM philosophy requires interdisciplinary efforts that result in integration and the building of a more comprehensive perspective. A major issue facing corporate risk management is the effective implementation of ERM, which is not amenable to one-size-fits-all solutions, but is contingent on factors that vary across organizations (Mikes and Kaplan, 2015).

Risk management practices taking place under a different label, such as those implemented by different staff functions or under the auspices of executives other than the Chief Risk Officer, have been excluded from these studies. But the criticism is that many of the studies rely on simplistic variables to represent complex behavior. For example, the single 0-1 dummy variable of ERM adoption does not capture how ERM is actually implemented.

Studies that rely on S&P's ERM ratings must assume that the rating agency's arm's-length assessment of a firm's ERM processes, based on public information, is a valid indicator of the risk management processes actually implemented in the firm. Because of these shortcomings, most empirical studies explain only a small fraction of the variability in the adoption or impact of risk management and have low statistical significance for key explanatory variables (Mikes and Kaplan 2015).

In contrast to explanatory sciences, a main emphasis of design science is to solve field problems, such as change management initiatives. Implementing ERM is a change management issue that defies typical planning procedures.

Long-term planning is difficult in the face of uncertainty, where locking in decisions can take an enterprise further down the wrong path. In a complex, interconnected world in which

change is continuous, an organizational design science perspective can provide a foundation to implement effective ERM, resulting in sustainable organizations (Mc Shane 2018).

1.7.3. Enterprise Risk Management Benefits and literature

S&P believes that instead of formula or check list, managing enterprise risk depends largely on quality of management (Hampton, 2009). The financial, infrastructure, reputation and market sense benefits of Enterprise Risk Management can be listed under the main headings. The main contributions of ERM are: Recognize upside risks, identify risk owners, align risk accountability, create a central risk function, create an ERM knowledge warehouse, involve the board of directors and employ a standard risk evaluation process (Hampton 2009).

There have been some measures to observe if there is a relationship between traditional risk management and firm financial results. Firstly, in 1958, Modigliani and Miller concluded that there is no effect of traditional risk management to the results of firms under perfect competition market since the investors have the same knowledge and may mitigate the risks equally (Sprcic, 2013).

Meanwhile, even just before Modigliani and Miller, Markowitz, who is the 'founder of Modern portfolio theory', may also be considered as the supporter of modern risk management by observing how risk currently is appraised. In his theory, the risk is measured as standard deviation and expected value and the portfolio choice is rationalized by looking at them. Since the ultimate selection of a portfolio involves the evaluation and management of risk as measured by standard deviation, it is clear that Markowitz's process of portfolio selection represents the birth of modern risk management whereby risk is quantified and controlled (Alexander, 2009).

During 60's the mathematical development continued to contribute at the insurance problems, but in practice, the applications weren't still satisfying. A new approach was introduced with more realistic constraints (Borch, 1967). Almer, in his paper called modern general risk theory, explained that, the researcher or actuary should begin with the actual

results to model the subjects with the pure mathematic, for insurance calculations. They should estimate the big accidents loss that is typically not occurring often. (Almer, 1967)

Another view argues that firms should not engage in any effort to manage idiosyncratic risk. According to CAPM (Capital Asset Pricing Model). developed by Sharpe (1964)., firm market value is affected only the firms who bear with systematic risks rather than idiosyncratic. An implication of CAPM is that firms should not use risk management to reduce firm specific risks because investors can eliminate firm idiosyncratic risks through diversification. Allayannis and Weston (2001). concluded that non financial firms that use exchange rate hedging are valued about 5% higher versus the ones that are not.

Gamba and Triantis (2011). analysed three important risk management mechanisms in a dynamic setting, concluded that risk management contributes very little, but may serve mostly to the liquidity management. As stated in Beasley's study (2008). there are results at firm-specific. Namely, for non financial firms, they find that the announcement of enterprise risk management to the market is positively affecting the firm size and volatility of earnings, but negatively the leverage and the ratio of cash to liabilities. Meanwhile, the financial firms are more driven by other demands of risk management, such as regulators.

Jin and Jorion (2006). did a research at US oil and gaz industry and concluded that hedging reduces the sensitivity of oil prices but does not change the firm value. Hoyt and Liebenberg (2011). found a positive relationship between firm value and the appointment of a CRO. Gordon (2009). found that the relationship between ERM and firm performance depended on how well ERM implementation was matched with firm-specific factors.

Spricic did a research in Croatia for non financial large firms, and showed that efficient enterprise risk management can influence company value drivers positively (Spricic,2013). According to the Journal of accounting paper by Mc Shane, Nair and Rustambekov, the firm value is not affected or slightly affected by the implementation of ERM, where S&P datas are used.

Similarly, according to an empirical study done by Senol and Karaca (2017). for measuring the effect of enterprise risk management on firm performance, no evidence has been found (The sample used for this survey is from BİST and within 500 most industrialized company in Turkey, which represents 33 firms for 7 years(2009-2015). with 231 observations).

In order to see clearly the benefits of enterprise risk management, the beginning stage the top management engagement should not be for the formality and the organization culture should really adapt it at their mind and processes.

Janor, Hamid and Yatim (2017). could not conclude any evidence about the effect of ERM to the financials of the firms from Malaysian technological industry following to their research, but states that these effects may be seen in the long run where ERM applications are still young in the country.

From the Turkish Accounting Journal (2018)., Karaca, Senol and Korkmaz state that there is a correlation between Corporate Governance and ERM, following to the study for 231 BIST firms operated between 2009 and 2015.

Cohen, Khrishnamorthy and Wright (2017). showed out that the quality of financial reporting increases thanks to the effectice ERM processes, concluding to a research done for 11 companies from US, with 32 participants.

Meanwhile, Versluis also showed a model to response the risks from the numerical background. Surely, the assessment amount for each degree of the risk is very important. (Versluis, 2010)

1.7.4 Black Swan Theory

The famous writer Nasim Nicholas Taleb has received the Black Swan theorem, which describes the risks associated with triggers, which are very difficult to predict before the world, and which have important consequences. Before Australia was discovered, it was believed that all the swans were white. In recent times, black swans brought to England have been found to be harmful to whites, causing confusion in the herd, and even damaging the offspring. We can say that even a single black swan can overturn the system we experience about whites.

According to the black swan theory, what we know is more important than we do not know. Instead of foreseeing them, we need to know how to live with them. The bell curve is important, but the less likely to think is the blind. So while processes simplify the events, the black ones we leave out (Taleb, 2007). The prediction of black swans is very difficult; speed communication, flexibility and actions can be minimized. Important events that can be foreseen are not called black swans.

Action should be taken when the slightest indication is received to assess these events, which are impossible or too difficult to predict, in corporate risk management. Of course, when the prevention is made by luckily foreseeing them in life, the definition of black swan is removed. In risk management, black swans are more artistic than science, and the work of proof or repetition is limited or absent for the same event. The more detailed information on possible hazardous risks, the more concern it creates. Events that may be more likely to be unknown may not appear among the most important on the risk list. We can also describe it as optimism or pessimism because of the perception of people. Expected rates of events with very low likelihood of statistical significance may increase.

There's an irony that Enron had an advertisement for Houston Astros baseball team prior to the scandals as: sometimes it's the things you don't see that have the biggest impact (Woods, 2011).

Inevitably, the Enron scandals, series of events that resulted the bankruptcy of the biggest energy, commodities and service company, properly Enron and the dissolution of Arthur Andersen, which was the biggest auditor and accounting service firm. This event would cause the wave of regulations and legislation to increase the accuracy of financial reporting. The most important one was Sarbannes d'Oxley measures, which imposed harsh penalties for destroying, altering and fabricating financial datas (Britannica).

APPLICATION	Simple payoffs	Complex payoffs
DOMAIN		
Distribution 1 ("thin tailed")	Extremely robust to Black Swans	Quite robust to Black Swans
Distribution 2 ("heavy" and/or unknown tails, no or unknown characteristic scale)	Quite robust to Black Swans	LIMITS of Statistics – extreme fragility to Black Swans

Figure 10 The four quadrants – Taleb (2008).

The four quadrants. The South-East area (in orange). is where statistics and models fail us (Taleb, 2008). Taleb, in his essay, categorized the risk assessment for treatment in four quadrants regions as above on his map.

First Quadrant: Simple binary decisions, in Mediocristan: Statistics does wonders. These situations are, unfortunately, more common in academia, laboratories, and games than real life what I call the "ludic fallacy". In other words, these are the situations in casinos, games, dice, and we tend to study them because we are successful in modeling them.

Second Quadrant: Simple decisions, in Extremistan: some well known problem studied in the literature. Except of course that there are not many simple decisions in Extremistan.

Third Quadrant: Complex decisions in Mediocristan: Statistical methods work surprisingly well.

Fourth Quadrant: Complex decisions in Extremistan: Welcome to the Black Swan domain. Here is where your limits are. Do not base your decisions on statistically based claims. Or, alternatively, try to move your exposure type to make it third-quadrant style ("clipping tails").

1.8 Alternative approaches

Risk managers can also make updates at different points of view, within different job descriptions, depending on the medium they are in. Their work in the dynamic process is also important for their harmony. In addition, new risks may arise due to technological developments, and there may be different methods for their responses. Risk management documentation can be viewed as static. Systems that can be updated continuously in the following periods can be created.

Risk management has also influenced research in the area of business and society. One of the dominant themes in the field has been the study of the relationship of corporate social responsibility (CSR). to financial performance. As a real option, CSR projects provide a way of reducing the downside business risk of the firm and are thus an essential element in the risk management of the corporation (Husted, 2005).

In the Global environment, the nature of risk has also changed and the risk may not be mitigated by the traditional means. The new environment requires innovation by the companies in both sensing and understanding these risks, and in adapting risk management systems to include new tools and network-based models of information sharing.

Understanding a stakeholder issue is not the unique solution, the competition conditions also forces to utilize global networks. If the linkage between social responsibility and core business process is provided, the companies may design better risk management for current issues and anticipate for those coming down the pike (Kytte Ruggie, 2005).

The concept of reputation risk management could assist in the understanding of corporate social responsibility reporting practice. corporate social responsibility reporting could be viewed as both an outcome of, and part of reputation risk management processes.(Bebbington,2008).

2. RISK ASSESSMENT

Risk assessment is the identification of the risk and its effect on the company's strategy or projects. The risk assessment may be graded according to the nature of the present or the subsequent action taken by the internal audit unit.

It can be managed as an approach from top to bottom, as well as from bottom to top. Or they may be combinations. Both have benefits and losses according to the style of the application and the situation of the company.

The most important advantage of the top to bottom approach is that risks can be listed on a more comprehensive, uniform basis. In the case of the other, further recognition of business processes and, in particular, emerging situations can be evaluated. The combination of them connects top management with the rest of the organization of risk matters (Mc Kinsey, 2010).

Different techniques can be used for risk assessment. It should be chosen if it is more appropriate according to the culture and understanding of the organization. The most used method is to conduct a survey, especially in terms of time advantage, and easier systematic.

Apart from this, workshops and brain storms can also be done. Performing auditing is another way. It can also be used to perform process analyzes. Risk surveys outputs that are done for insurance purposes are also good source for risk register, which gives the input from a third party expert eye perspective. There are also aspects in which each is again advantageous or disadvantageous.

Once the risks are revealed, the measurement will be used to create the matrix. Here, probability and severity are graded from low to high. Differences in risk perceptions may also arise when the workshop method is used.

SWOT (strength, weakness, opportunity, threat). or PESTLE (political, economic, sociological, technological, legal, ethical or environmental). methods can be used. SWOT allows discussion of opportunities as well as negative consequences. PESTLE, on the other hand, increases the influence of participation in the work with a simple understandable framework (Hopkin, 2017).

As a general rule, risks are dealt with in terms of violence and probability, and then they are placed in the company matrix where all risks are involved. If they are here, they are grouped according to the effect they are given, from high to low and numbered according to different scales. Likewise, when they are scored in terms of probability, the two are combined to determine the level of risk.

The same risk effects can be assessed differently depending on the situation of the organization or the individual. An incident that is not so important for a large organization can seriously affect a smaller organization in scale.

The risk approach can be shown on the matrix again by dividing according to the tolerance amounts after the ratios of the risks are specified on the matrix. The classification is according to risk appetite here (IRM, 2010).

The greatest effect that will arise if a risk happens in the current conditions is called the natural level of risk. Measuring may not be easy for some risks. It must be determined before going to the risk control process. Risk matrices are used to show this level with the severity and probability of risk. We can say that this level can be changed with some measures on Matrix. In the most common risk matrix display, probability and violence components are used. Here, both the severity and the most likely risks are the greatest risks. In general, the likelihood of risk on the horizontal axis of the matrix is shown on the vertical axis.

Coloring is done according to the combination of these two. In common use, the greatest risks are red, and then the lower risks are followed by orange, yellow and green respectively. The numerical calculation of financial, infrastructure, reputation and market effects can be used when the risks are graded.

Here, the categories are determined by specific number ranges

		Consequences				
		Insignificant (1) No injuries / minimal financial loss	Minor (2) First aid treatment / medium financial loss	Moderate (3) Medical treatment / high financial loss	Major (4) Hospitalable / large financial loss	Catastrophic (5) Death / massive financial loss
Likelihood	Almost Certain (5) Often occurs / once a week	Moderate (5)	High (10)	High (15)	Catastrophic (20)	Catastrophic (25)
	Likely (4) Could easily happen / once a month	Moderate (4)	Moderate (8)	High (12)	Catastrophic (16)	Catastrophic (20)
	Possible (3) Could happen or known it to happen / once a year	Low (3)	Moderate (6)	Moderate (9)	High (12)	High (15)
	Unlikely (2) Hasn't happened yet but could / once every 10 years	Low (2)	Moderate (4)	Moderate (6)	Moderate (8)	High (10)
	Rare (1) Conceivable but only on extreme circumstances / once in 100 years	Low (1)	Low (2)	Low (3)	Moderate (4)	Moderate (5)

Figure 11 Risk Matrix example from an industrial company

Probability	Almost Certain	Most Probable	Probable	Possible	Low
Likelihood	%91-%100	%61-%90	%41-%60	%20-%40	%1-%20
Frequency	More than 1 in a month	1 or more per year but less than 1 monthly	1 or more in 3 years but less than 1 in one year	more than 1 in 5 years but less than 1 in 3 years	Less than 1 in 5 years

Impact		Very low	Low	Medium	High	Very High
Financial	Company	Potential loss less than 100.000 USD	Potential loss between 100.000 USD and 1.000.000 USD	Potential loss between 1.000.000 USD and 3.000.000 USD	Potential loss between 3.000.000 USD and 10.000.000 USD	Potential loss more than 10.000.000 USD
	Health and Safety	Minor reversible short term health effect	Moderate reversible midterm health effect	Permenant disabilities, long term hospitalization	1 fatalities	Multiple fatalities
Others	People	Minor impact on employee satisfaction	Minor impact on employee satisfaction and a few number of employees quitting the job	Major impact on employee satisfaction and a key employee quitting the job	Major impact on employee and the management satisfaction and few number of key employees quitting the job	Major impact on employee, the management and large number of key employees quitting the job

IT	No effect on working environment	There is minor effect on working environment, the problem may be fix in one hour	There is medium effect on working environment, the problem may be fix in four hours	There is high effect on working environment, the problem may be fix in 1 day	There is high effect on working environment, fixing the problem may take more than one day.
	No environmental damage	Low environmental damage (less than 1 month).	Short-term harmful (a few months). and polluting substances in the environment and society in the vicinity of the facility	Long-term harmful (1 year). and polluting substances in the environment and society in the vicinity of the facility	Long-term harmful (more than 5 years). and polluting substances in the environment and society in the larger area
	No national or international media coverage, impacts may take place in social media.	Local media coverage, impacts may take place in social media or digital mediums.	Short term national media coverage, impacts take place in social media or digital mediums.	Long term national media coverage, impacts take place in social media or digital mediums.	National and international media coverage, impacts take place in social media or digital mediums.
	No negative effect on company's strategies . Very minor effect on loss of market, loss of revenue and customer satisfaction.	Low negative effect on company's strategies. Minor effect on loss of market, loss of revenue and customer satisfaction.	Medium negative effect on company's strategies. Major effect on loss of market, loss of revenue and customer satisfaction.	High negative effect on company's strategies. High effect on loss of market, loss of revenue and customer satisfaction.	Critical negative effect on company's strategies. Very high effect on loss of market, loss of revenue and customer satisfaction.
Environment					
Reputation					
Strategic Cooperation /Market					

Figure 12 Example of risk matrix range criterias for an industrial company

If it can not exactly determine the level of the risk, it can also be indicated as a rounded and elliptical region instead of a point on the matrix. According to the importance grades in the risk matrices, only certain risks are shown in terms of follow-up.

Risk capacity is the level at which organizations risk their total damage. The risk should be assessed differently from the appetite, because a greater risk than the company's carrying limit can be taken as the end of appetite. At the end of the company, the company may show a big step or it may disappear completely.

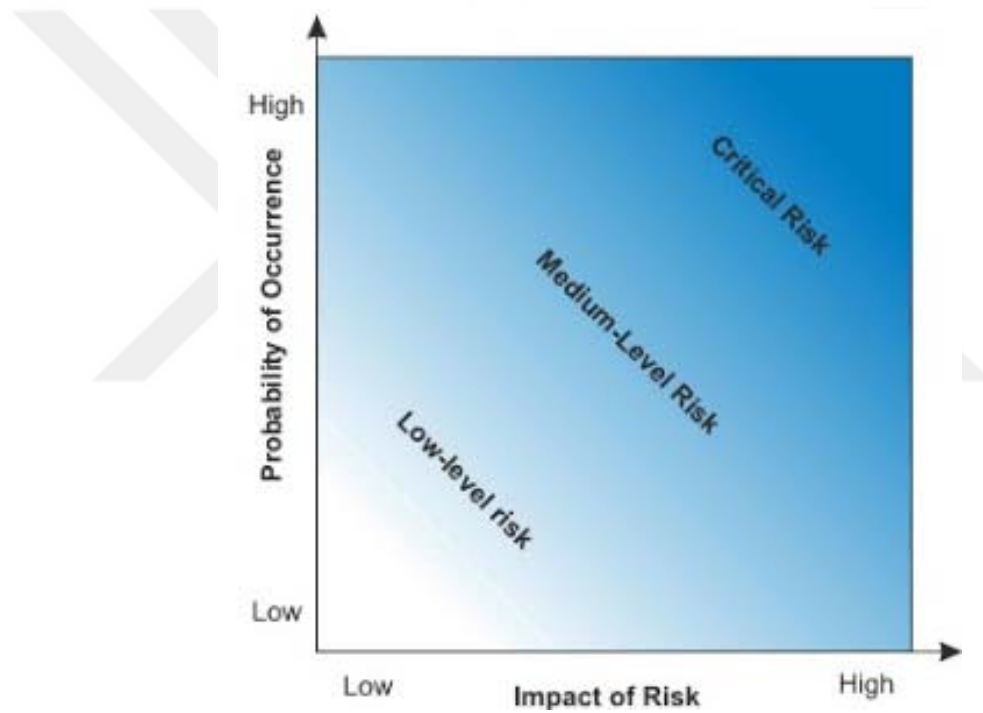


Figure 13 The risk impact/probability chart – Goenkar (2009).

5x5 RISK MATRIX

PROBABILITY	Highly Probable	5 Moderate	10 Major	15 Major	20 Severe	25 Severe
	Probable	4 Moderate	8 Moderate	12 Major	16 Major	20 Severe
	Possible	3 Minor	6 Moderate	9 Moderate	12 Major	15 Major
	Unlikely	2 Minor	4 Moderate	6 Moderate	8 Moderate	10 Major
	Rare	1 Minor	2 Minor	3 Minor	4 Moderate	5 Moderate
		Very Low	Low	Medium	High	Very High
		IMPACT				

Figure 14 Risk matrix – Shuttleworth (2017).

The risk probability is how often a risk is, in other words, the risk frequency. Hazard risks can be calculated using past data. Apart from that, companies can take measures to reduce these possibilities. They can also be done to reduce the severity of the damage that the victim may cause. This may be in the sense of reputation management after the occurrence of the risk, as well as precautionary measures.

There should also be plans to minimize the cost of the damage. Insurance companies also consider these plans in their premium accounts. In addition, it is possible to bear some costs consciously in the direction of the targets related to these measures.

Identifying opportunities during the risk assessment is an important development of risk management. That is, when some risks are taken, greater benefits can be realized. Positive and negative effects of risks in risk matrices can be shown together.

Risks index is derived by rating and listing the risks' levels by taking risks into categories. Through this index, risk management performance is reported and monitored at different times. Risk management, together with these assessments and reports, provides a very good

support in strategic, operational decisions. Institutions undertake risk to receive an award in exchange for many risks.

Institutions should have full knowledge of risk exposures to be exposed and believe that the risk exposure is within the risk appetite limits. Institutions should be confident that they have the resources to meet the magnitude of the exposure. According to the source provided here, the risk appetite must also be clearly shown.

For example, when starting in a new business, the risks are big and the prizes can be small. As business grows, prizes increase and the risks also decrease when they reach the stage. Though the risk is reduced in the event of a downsizing, the probability of an award will also decrease.

In sport, it may also be a request to win an award by taking some risks. For example, when field defenses are made in the basketball, the attack from the area near the pot becomes more difficult. On the other hand, an effective offense against this defensive is realized by the realization of long distance shots.

Institutions have different attitudes towards risks. Some institutions may prefer to take some while avoiding the riskiest. The attitude towards the institution's risk depends on the attitude of the top management to the nature and the nature of the market.

More aggressive attitude toward love is necessary for an institution that is in its infancy rather than a mature institution in growth or a mature market. If an institution is involved in a mature market and falls at the same time, the attitude taken will be more of a risk aversion.

There have been some studies that measure the values of reluctance avoidance according to socio-demographic variables. Here, factors such as gender, age, religious values have also been found to be effective in evaluations.

Should risks be governed solely by the rules or by effective dialogue with all stakeholders at the same time? Here, the risks that can be avoided are identified as strategic and external risks.

Strategic and external risks are likely to be very deep if the probabilities of realization are low, and the consequences can be as far as the end of the company, while avoidable risks are more likely to be controlled by process linking.

The culture of the company is so effective that the limits of the strategy and the determinations support the promise of Peter Drucker's "Culture can eat strategy as breakfast." So if you do not have the right culture, you can not succeed. While risk management is more a function of cautiousness, strategy is usually optimistic and developmental.

In general, processes for low-probability, difficult-to-predict events may also be ineffective. Dialogue is intended to place awareness about the events that may cause harm in the organization and to take soft measures that can reduce the most effect. Each company can have its own special policies. The Black Swan theory explains exactly this.

In order to integrate risk assessment and perception, the paper from Renn analyses the strengths and weaknesses of each approach to risk analysis and highlights the potential contributions that the technical sciences and the social sciences can offer to risk management as illustrated at the figure below.(Renn,1998).

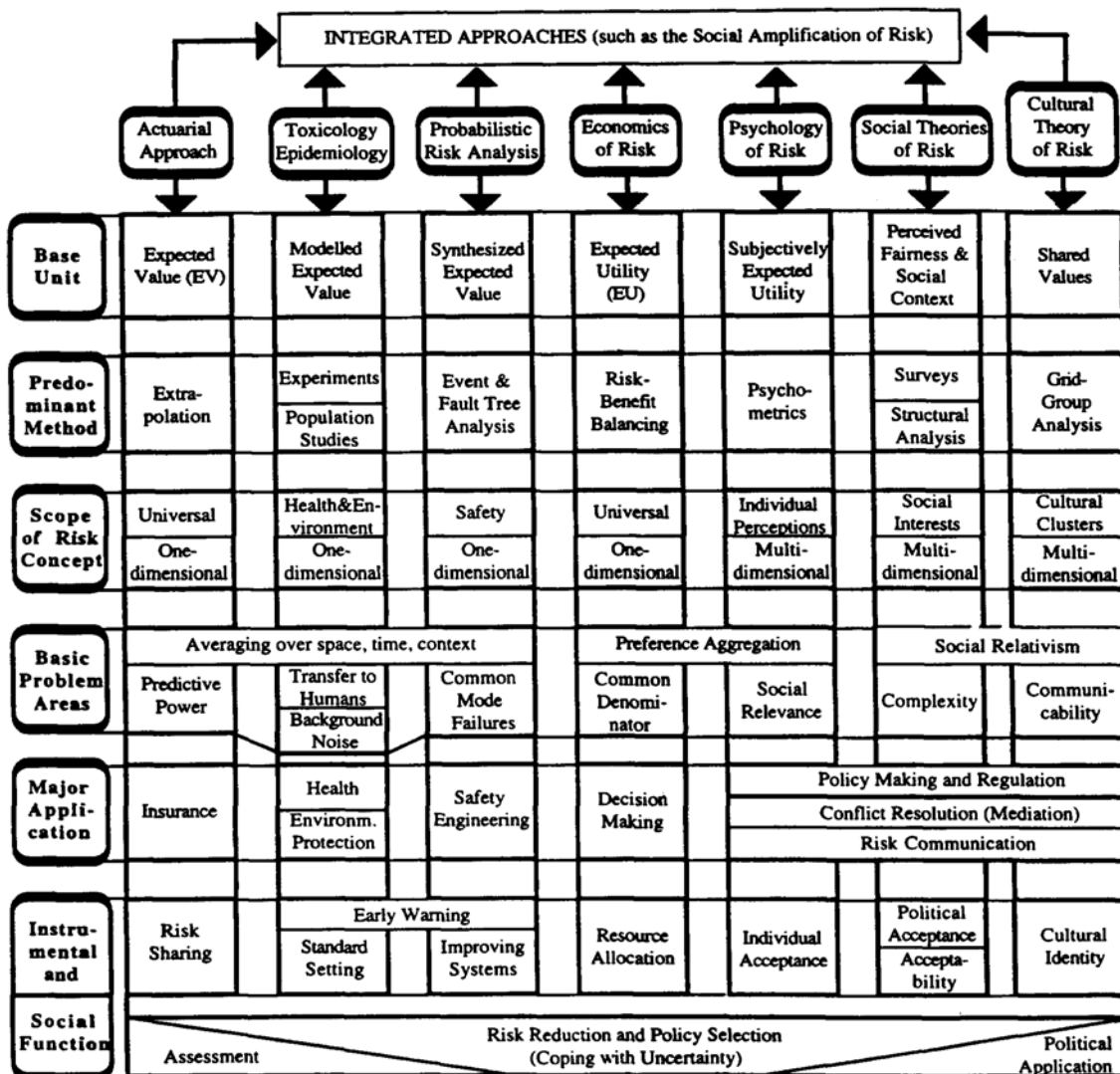


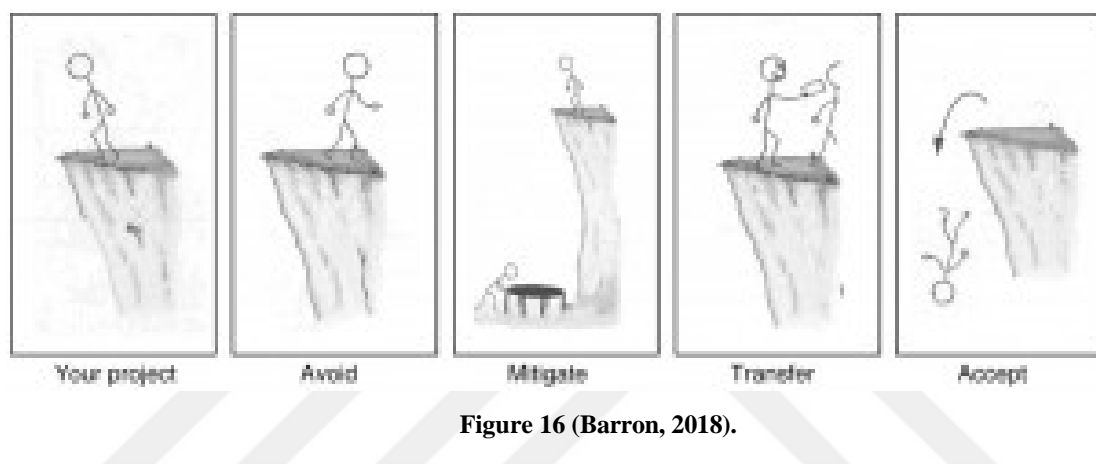
Figure 15 systematic classification of risk perspectives – Renn (1998).

The first three perspectives on the figure (columns 1-3 in Figure). have much in common and can be grouped together as technical perspectives on risk. The social science perspective on risk (columns 4-7 in Figure). expands the realm of sources for making judgments about the nature and magnitude of risks and includes subjective elements in defining effects, likelihood and context.

3. RISK ACTIONS

3.1 Risk action classifications and techniques

After the risk is identified, there are four kinds of actions according to the ISO 31000 terminology. English 4 T **Tolerance**, **Treat**, **Transfer**, **Terminate** are indicated in the title. One of them is selected as the result of risk assessment.



Tolerate is preferred for those with a generalized likelihood and low severity. High likelihood, low severity Treat, low probability, high severity Post partum transfer is considered correct if both probability and severity are high.

They are also clearly shown in the risk matrix position. Strategic risk responses represent the first periods of activity in general with the process of low risk of high risk, probable with Explore from English 4E. With **Expand**, activities at high risk conditions will be enlarged and higher returns can be made. **Exploit** brings low with high risk. **Exist** has low risk but low return. Of course, depending on the risk appetite for each process, exit strategies from the sector can also be applied. This can be defined as **Exit**.

Risk controls have dominant techniques used to take action. In general terms, the action is preventive in the Terminate action, directive in the transfer, detective in the Tolerate, and

corrective in the Treat. For most of the hazards risks, preventive measures are taken before the event. Repairer and supervisory controls are intended to prevent loss, minimize damage, and provide cost control. The detection action usually involves what to do after the risk is realized.

When the regions on the risk matrix are separated, the terminate action on the critical side is tolerated in the comfort zone. In the middle there is treat and transfer. Preventive controls are counted from the most important actions. Establishment of the system of segregation of duties, technical and safety measures are examples. It can be seen as a disadvantage that some developer activities are limited in terms of how they are controlled.

Repairer controls are used for unresolved and realized risks with preventive controls. The current risk level is reduced at this rate in accordance with the company's risk appetite. For example, activities such as tightening security, changing processes can be shown.

Although managerial risk controls are other controls, it is strongly recommended that they be done in preparation. The use of protective equipment, for example, is a significant precaution against the risks of large damage that may be unlikely. Detective controls are carried out after the process has been carried out. Stock controls, bank reconciliations can be shown as an example.

3.2 Insurance and risk transfer

3.2.1 General concept of insurance

The oldest form of risk management is insurance. The first example of this is Hammurabi law (1810-1750 BC). They were written in 282 items on a cylinder shaped tablet of 2 meters in the form of a nail. 102 and 103 have some kind of shipping insurance. These things say: If a trader entrusts some money for investment and has some loss in the place where the broker goes, he has to give the main money to the merchant. If the enemies take whatever they have while traveling, then the broker will swear on behalf of God and get rid of the obligation.

Individuals or organizations make their choice by considering their benefits and risks. Loss sizes can be paid for very large incidents, as well as relatively small premiums, as well as a desire to earn a large bonus by paying a reasonable fee.

The insurance sector has not improved anything about benefits and benefits. Ideally, an insurable risk is a complete list of materials provided by the authors of the followings:

1. a large number of homogeneous exposure units;
2. independence between exposure units;
3. Calculable expected loss monetary values;
4. significant cause, quantity, location time
5. accidental loss;
6. economically feasible;
7. potential catastrophe avoidance

There may be difficulties in transferring some insurable risks due to high insurance premiums or insurances in some special cases. The transfer of risks may be made outside the entity itself, or the contracts may be made to some extent through mergers. Risk hedges are also methods used to reduce surprises. ISO 31000 prefers risk sharing terminology instead of risk transfer. One of the most known actions of hazard risk is the transfer; the most common transfer is the insurance. A contract is drawn up with a mutual good faith approach to the risks that may arise between the insurer and the insured. Thanks to the insurance, it is possible to compensate for the risks that may arise by paying a reasonable premium.

Expertise related to the damage that may occur in insurance has also developed, and the insured concerned has come to the recommendation to take measures to prevent the loss from occurring. The insurer's ability to accurately calculate the amounts of the losses after the occurrence of the damages and to compensate them in time ensures that the risk transfer meets the target. Otherwise, the lack occurs. Risk transfer can be realized by using hedge products besides insurance, by arranging private contracts, creating capital companies.

The history of insurance goes back to the time of the Babylonians and the Ancient Chinese. It started in Europe in the mid-1300s by maritimes. After the great fire, in 1680 a gilded insurance business began in London. In the USA the 18th century was again after the fires. The receivables, however, operate more recently from the beginning of the 20th century. Mandatory liability insurance is based on about 50 years ago.

There are three types of insurance in general: Compulsory insurances, Loss / loss protection insurances and working insurances. In risk assessments, the business segments to be insured are decided. In the latter case insurance is preferred by comparing premiums and risks to be paid. The amount of the premiums may vary according to the conjuncture. When the insurance is purchased, it's paid attention to 6 C: Cost, Coverage, Capacity, Capabilities, Claims, Compliance.

In recent years, products have also begun to be used to put more risk management measures in insurance to insure. For example, in a catastrophic case when parametric insurance is applied, payments can be made even if there is no damage. These events may also create opportunities for firms that take appropriate action.

3.2.2 Captive insurance

Investopedia defines captive insurance company as a wholly owned subsidiary company that provides risk-mitigation services for its parent company or a group of related companies. The captive insurance phenomenon has resulted in part from the relentless pressure of the growing ranks of sophisticated risk managers (and the corporate financial officers to whom they report). to dissect and examine every element of cost in the insurance transaction, to see where economies can be realized. Another major factor which has fed the captive movement is the instability and unpredictability of modern economic life. (Kloman,1982).

Captive companies are established in countries and regions that are easy to apply, in compliance with their legislation. Bermuda, Malta, Isle of Man, etc., these sub-structures are suitable. Recently, in the USA and some European countries, these companies can be established with the legislative regulations in this.

Captive fuses have significant advantages compared to normal insurances. For example, when premiums paid for insurance are expenses, the funds allocated for captive are accumulated and a value is generated within the company.

Captive companies are able to reach reinsurance markets with more affordable premiums. In addition, captive provides a stronger affinity for risk awareness in company risk management. It has the possibility to provide a larger insurance coverage than the markets. Some tax attorneys are also available.

If you look at the disadvantages, you lose the chance of transferring the damages that occur in risk transfers to third parties. When major damage occurs, an important part of this cost can remain in the organization. Although infrastructural problems seem to be resolved, regulatory challenges can arise. Creating a captive company also has both cost and operational difficulties. Following to a study, corporations with heightened manager-owner conflicts of interest are more likely to operate a captive insurer (Scordis, 1998).

3.2.3 Business Continuity

A business continuity plan (BCP). is a document that consists of the critical information an organization needs to continue operating during an unplanned event. The BCP should state the essential functions of the business, identify which systems and processes must be sustained, and detail how to maintain them. It should take into account any possible business disruption. Business continuity and crisis management have recently shown significant improvement. It is an important part of risk management and it is clearly and procedurally determined how actions will be taken in the event that these risks occur in companies.(Techtarget,2017).



Figure 17 Disaster recovery plan – Techtargot –(2017).

Disaster relief is also a component of the business continuity program. Beyond this, it is called crisis management, as well as providing operational continuity, as well as plans involving actions, including how to ensure communication to stakeholders. Business continuity plans are considered to have three stages: communicating with stakeholders and contacts, putting the plan into action, and returning to normal operations once the outcome is achieved. In addition, the plan must be effective, practical, sustainable and feasible in a financial.

Business continuity management (BCM). has been a rapidly developing and hybrid field in recent years. Not only is it an increasingly prominent part of the changing risk management agenda, but it is also a practice area where interconnectivity risks are central. BCM has originated outside of the accounting field of knowledge and potentially adds greater depth to the ‘going concern’ assumption (Power, 2009).

Business Continuity Management (BCM). is the key to ensuring that an enterprise can protect itself against the risks which are inherent in its environment. Enterprises are increasingly reliant on the availability of information in order to provide services to customers.

Effective information management requires developing an environment within which information can be provided to any authorized person, anywhere and at any time. The common thread between BCM and information management is that they are both concerned with being able to deal with uncertainty. The CIO(Chief Information Officer) therefore has a key role to play in both promoting the philosophy of BCM and ensuring that information management incorporates effective plans, procedures and policies to protect an enterprise's key information assets (Gibb, 2006).

ISO (International Organization for Standardization). issued ISO 22301 standard for business continuity. This standard is a management system standard that is based on the risk approach for creating, implementing, monitoring, reviewing, maintaining and improving business continuity.

ISO 22301; The ability of an organization to provide products or services following an event that may cause disruption of works, the establishment of processes, procedures, decisions and activities to ensure that the enterprise can continue its operations as a result of interruption of an activity, in other words, help proactively and reactive plans to help prevent disasters, and help ensure that they can be returned to their normal state when such situations occur.

4. RISK STRATEGY

4.1 Core business processes

To establish an effective risk management system, companies must include all the strategies, tactics and operations of the objectives. The aim in the basic business processes is to develop the strategy and achieve its results, to implement the business tactics, to ensure the continuity and monitoring of the operations and to comply with the legislation.

Risk assessment is a crucial element in the formulation of company strategies. The more easily the strategy is understandable and recognizable, the easier it is to assess. The SWOT

analysis is set forth in the action plans, taking into consideration the shareholder and client expectations, as well as the situation of the resources, especially the personnel.

The Board of Directors, which is the highest authority of operations, should be effective in taking strategic decisions. The tools used to achieve business results are called tactics. Tactics should be selected so that effective and desired results are obtained.

It is important that the financial results of these are systems that can be monitored accurately and in a timely manner, as well as ensuring compliance with the legislation. The main goal of risk management is to provide input for the most beneficial or least harmful outcome of planned or unplanned risk risks that may occur in operations.

4.2 Reputation and business model

The business model is developed under the title of customer, product, resources and resilience. The preparation is quite complex, reputation and ethical trade must be taken into consideration in this process. Each item of the business model is subject to risk assessment, including vision, mission and objectives. Although the product is at the center of the business model, it is the initial customer segment. It is a risk factor that products can be offered to customers under desired conditions. Once the business model is established and its risk appraisal is done, its applicability should be considered.

Reputation is often considered the most important asset that a company possesses. The components of that may be listed as capabilities, activities, standards and ethics. They may be mapped at the quadrant to measure the degree of the reputation in terms of capabilities, activities, ethics and standards (Hopkin, 2017).

According to the United Nations Industrial Development Organization, Corporate Social Responsibility is the integration of companies' social and environmental concerns with their stakeholders in their operations. Corporate social responsibility increases awareness and

contributes to corporate value. On the other hand, when an accident or an unfavorable event occurs due to the lack of it, the opposite direction takes place exponentially.

4.3 Risk management context and responsibilities

Risk architecture, strategy and protocols represent the context, which is equivalent to the risk framework as referred at ISO 31000, for risk management within the organization. The risk architecture defines how information on risk is communicated throughout the organization.

The risk strategy defines the overall objectives that the organization is trying to achieve with respect to risk management. The risk protocols are the systems, standards and procedures that are put in place in order to fulfill the defined risk strategy (Hopkin, 2017).

Information on ownership of each priority significant risk should be included in the risk register. It is important that the activities of the risk manager, risk management committee, internal auditors and others do not reduce local ownership of significant risks. ISO defines risk owner as a person with authority and accountability to make the decision to treat, or not to treat a risk. Risk manager plays a key part in bringing together disparate risk management processes to ensure that limited company resources are applied effectively.

Deciding on a risk appetite and the monitoring of actual risk exposure becomes a high-profile board responsibility. Therefore, the risk committee will need to be a committee of the board with executive and non executive membership. The overall aim for this is to achieve a prioritized, validated and audited improvement in risk management standard in the organization (Hopkin, 2017).

As at many sectors, for giving an example, the water utility sector has made substantial progress to recognizing the value of risk analysis strategies and decision-making frameworks within its business, evidenced by a number of current international water sector initiatives (Pollard, 2004).

5. RISK CULTURE

5.1 Risk aware culture

There are four types of risk management style: compliance management, hazard management, control management and opportunity management. Hazard risks have always a negative outcome and the risk acceptable to the organization is the hazard tolerance. Control risks would have the costs incurred and it's described as control acceptance. Compliance risks are based on fulfilling legal obligations.

Opportunity risks have a range of outcomes highly positive and negative, where the company would try to put its resources to get a positive output; that is called as opportunity investment. These styles may be used for the same risk at the different stages. The hazard tolerance, control acceptance, compliance and opportunity investment are the values that the organization is willing to put at the risk. These four components added together are the risk appetite of the organization (Hopkin, 2017).

IRM defines risk appetite as 'the amount and type of risk that an organisation is willing to take in order to meet their strategic objectives. Organisations will have different risk appetites depending on their sector, culture and objectives. A range of appetites exist for different risks and these may change over time. Meanwhile, it defines risk tolerance as the variance from risk appetite that an organization tolerates within a certain business unit, a particular risk category or for a specific initiative. It consolidated also the other selected definitions for risk appetite and tolerance as shown in the table below.

SOURCE	RISK APPETITE DEFINITION	RISK TOLERANCE DEFINITION
ISO Guide 73:2009 <i>Risk management vocabulary</i>	Amount and type of risk that an organization is willing to pursue or retain. <i>Note: ISO 31000 does not include this risk appetite definition in the guidance standard.</i>	Organization's or stakeholder's readiness to bear the risk after risk treatment in order to achieve its objectives. <i>Note: Risk tolerance can be influenced by legal or regulatory requirements.</i>
COSO <i>Strengthening Enterprise Risk Management for Strategic Advantage, 2009</i>	A broad-based description of the desired level of risk that an entity will take in pursuit of its mission.	Reflects the acceptable variation in outcomes related to specific performance measures linked to objectives the entity seeks to achieve.
BS 31100:2008	The amount and type of risk than an organization is prepared to seek, accept or tolerate.	The organization's readiness to bear the risk after risk treatments in order to achieve its objectives. <i>Note: Risk tolerance can be limited by legal or regulatory requirements.</i>
KPMG <i>Understanding and articulating risk appetite, 2009</i>	The amount of risk, on a broad level, that an organization is willing to take on in pursuit of value.	Risk thresholds, or risk tolerances, are the typical measures of risk used to monitor exposure compared with the stated risk appetite.
Towers Perrin, <i>What's Your Risk Appetite</i> , Emphasis 2009 by J. David Dean and Andrew F. Giffin	The amount of total risk exposure that an organization is willing to accept or retain on the basis of risk-reward trade-offs: <ul style="list-style-type: none"> • Reflective of strategy, risk strategies and stakeholder expectations • Set and endorsed by board of directors through discussions with management 	The amount of risk an organization is willing to accept in the aggregate (or occasionally within a certain business unit or for a specific risk category): <ul style="list-style-type: none"> • Expressed in quantitative terms that can be monitored • Often expressed in acceptable/unacceptable outcomes or levels of risk
ECIA and FERMA, Guidance on the 8th EU Company Law Directive, article 42, 2011	The level of risk that the company is willing to take: high return-high risk; low risk-low return, or a portfolio of different exposures. Risk appetite is strategic and relates primarily to the business model.	The maximum amount of risk that the company can bear despite controls. Risk tolerance is more operational and relates primarily to the company's targets.

Figure 18 Selected definitions and risk appetite and risk tolerance – RIMS/O'Rourke-(2012).

In order to improve the risk management performance of an organization, a risk management initiative will be required. The nature of this initiative will depend on the size, complexity and nature of the organization. There is no single correct approach to implementing risk management in an organization.

Risk-aware culture is achieved through leadership, involvement, learning, accountability and communication. Involvement and participation of senior management is a necessary component of achieving a risk-aware culture. Learning culture is also essential. Blaming should not occur (Hopkin 2017).

Although the importance of senior management role modelling is often emphasized, risk culture is shaped by much more than just the tone from the top. Risk culture is the product of organizational and group learning about what has or has not worked in the past.

In essence, the formal risk management framework defines which processes to use, which limits to obey, and which values to aspire to, while risk culture defines which rules and norms are perceived to be rational and important (Roeschmann, 2014).

The measure of risk culture is considered difficult. The effectiveness of risk management can be observed also from risk maturity models. There are various models on the maturity generally divided in 4 or 5 levels. One of the popular one has been prepared by Deloitte as below. Gormen has also prepared a similar model for the first time in Turkey.



Figure 19 Deloitte Maturity Model

5.2 Importance of risk appetite

Risk appetite is applied after the risks are rated in terms of likelihood and impact at the risk management process. The typical advice in most risk management standards is that risk should not be managed out of context, so questions about the risk appetite can only be answered within the context of the strategy, tactics, operations and compliance activities being considered. Many commercial organizations make adequate profits but take too much risk or make inappropriate use of risk capacity of the organization. The cumulative total of all individual values is the risk exposure of the organization (Hopkin, 2017).

At the figure below is shown a schematic representation of the key variables of business risk exposure developed by WERF, in association with the Water Research Foundation, United Kingdom Water Industry Research (UKWIR), and the Global Water Research Coalition (GWRC).

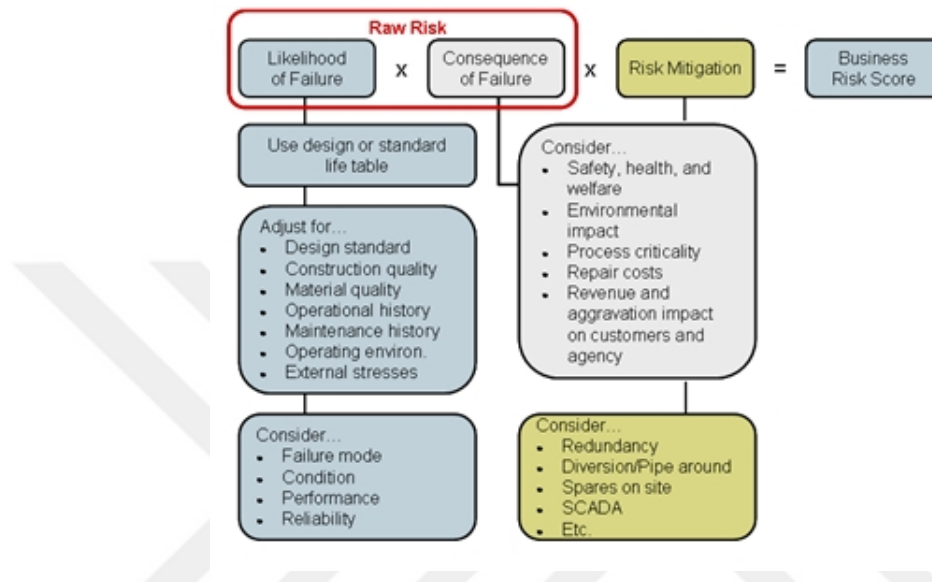


Figure 20 Schematic representation of the key variables of business risk exposure-WERF (2018).

For many organizations, risk is not a driver of the business, but it is a consequence of the strategy, tactics, operations and compliance core processes that the business undertakes. In this case, risk appetite is unlikely to be a driver for the business but will be a planning mechanism for the organization to decide whether it wishes to adopt certain tactics, given the risks that would be embedded within those tactics, projects and changes. Total cost of risk calculations may be made by historical data, which may not be a guide for future performance. Risk appetite can be a driver of strategy, planning guide for tactics or a set of operating constraints (Hopkin, 2017).

Power at his article challenges risk appetite concept and describes it as intellectual failure. Regulators, senior management and boards must understand risk appetite more as the consequence of a dynamic organizational process involving values as much as metrics. Once they do the measurements, they need to best appraise the eventual gains or losses, to determine the risk appetite.

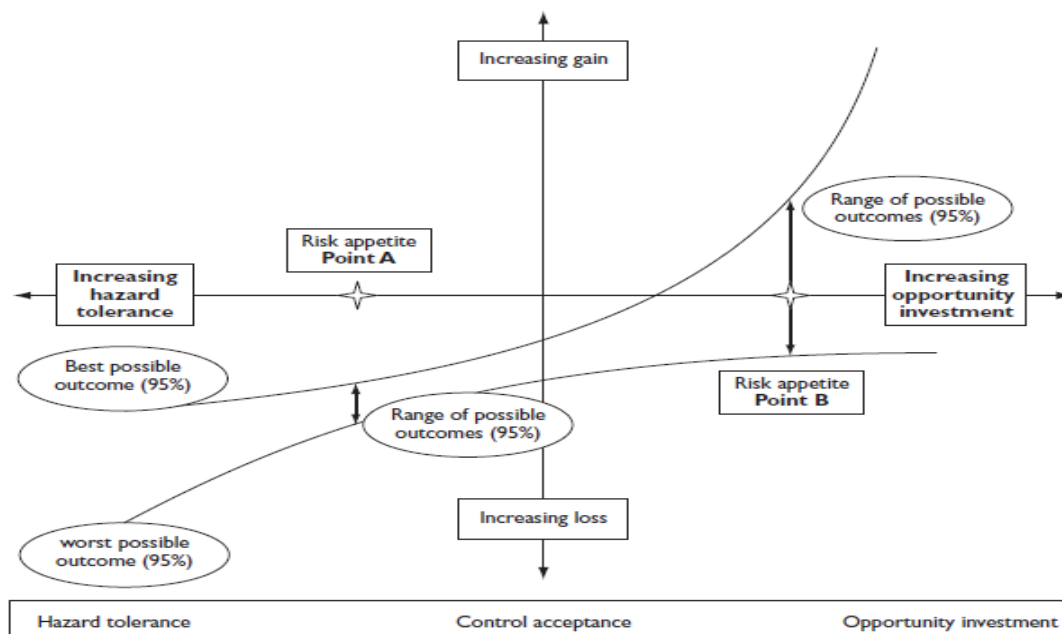


Figure 21 Risk response – Hopkin (2017).

A risk appetite statement, put simply, is the amount and type of risk that an organisation is willing to take in order to meet its strategic objectives – this includes reference to both the organisation’s risk appetite as well as its risk tolerance (Willis, 2015). The stages involved in developing risk appetite statements according to the report of IRM (2017). are as follows:

1. Identify stakeholders and their expectations, together with an analysis of the risks to strategy, tactics, operations and compliance, as set out in the risk register.
2. Establish the desired level of risk exposure that will lead to a risk appetite statement that provides a set of qualitative and quantitative statements.
3. Define the range of acceptable volatility or uncertainty around each of the types of risks leading to a statement of acceptable risk tolerances.

4. Reconcile the risk appetite, risk tolerances with the current level of risk exposure and plan actions to bring current risk exposures into line with risk appetite.

5. Formalize and ratify a risk appetite statement(s), communicate the statement with stakeholders and implement accordingly.

Following to IRM report, it is clear that companies are taking the concept of risk appetite and turning it into a practical management tool designed to enhance business success. Although most of the companies do not publish their risk appetite statements in full, there is sufficient information provided to demonstrate their value. In addition, ERM has operated as a boundary preserving model of risk management subject to the 'logic of the audit trail', rather than a boundary challenging practice which confronts and addresses the complex realities of interconnectedness. The security provided by ERM is at best limited to certain states of the world and at worst it is illusory – the risk management of nothing (Power, 2009).

5.3 Risk training and communication

Politics of uncertainty would create a public understanding of the terms on which professional opinions of all kinds are offered, an understanding grounded in a political culture which tolerates uncertainty rather than the depressing ubiquity of disclaimer paragraphs.

In this world, technical reform of liability law might take place, but it would have to be part of a larger shift in political consensus, a shift in which professional institutes, and corporate and political leaders would need to play a part .(Power, 2004).

Success in risk communication is not to be measured by whether the public chooses the set of outcomes that minimizes risk as estimated by the experts. It is achieved instead when those outcomes are knowingly chosen by a well-informed public (Sandman, 1987).

Risk assessment attached to strategic analysis is also a vitally important issue and is part of ensuring a consistent response to risk. The need for a consistent response to risk is vitally important in a crisis. Risk culture of the organization can be defined by leadership, involvement, learning, accountability and communication. Risk aware culture is all highly relevant to risk training and communication.

Risk information can be made available to stakeholders by variety of means. The appropriate means of communication will vary according to the nature of the stakeholder and the nature and complexity of the message to be communicated. It may be through software package as well (Hopkin, 2017).

At a more systemic or political level a new politics of risk is required. An older politics of risk sought to challenge expert judgment particularly that of scientists, by increasing public participation in risk management processes. A new politics is required which restores trust in expertise and which re-enlists honest professional judgment in the public domain (Power, 2004).

The public pays too little attention to hazard; the experts pay absolutely no attention to outrage. Not surprisingly, they rank risks differently. The public responds more to outrage than to hazard, risk managers must work to make serious hazards more outrageous, and modest hazards less outrageous (Sandman, 1987).

We must arm risk communicators with better information about variability and uncertainty in the risks that they use for risk comparisons, test different strategies for communicating about variability and uncertainty in risk using both qualitative and quantitative information, and strive to develop appropriate risk management criterion for risks assessed probabilistically (Thompson,2002).

5.4 Risk practitioner competencies

Risk management is increasingly seen as a profession, rather than a set of activities. Accurate communication on risk issues is vitally important. When communicating a message, it should be 5cs, clear, concise, coherent, credible and complete. Relationship skills are also important especially in terms of negotiation, motivation, listening and politics. These are not standard and shaped within the culture of the organization.



Figure 22 Risk manager competencies- Barron – 2018

It's important to examine the competencies you would like to see in your organization and compare them to the competencies that a professional certificate holder can bring. But when we analyze competencies, we need to look at both expressed and implied competencies. The expressed competencies are those that are stated in the program, and may be technical or functional in nature. The implied competencies, analytical skills range widely and require strategic and logical thinking. On occasions, when problem solving is involved then creative thinking is also a key requirement of the risk practitioner. Many risk practitioners are involved in qualification of risks, either as part of a Basel capital requirement calculation or as part of an analysis to determine the appropriate level of insurance that is required.

Management skills including motivational one, are important for risk practitioners, especially where a change in behavior or a development of risk-aware cultures required. Also of considerable importance are self-management skills.(Hopkin, 2017).

5.5 Risk management in VUCA environment

In the VUCA environment, where volatility, uncertainty, complexity and ambiguity exist, it may become more difficult to approach a challenging situation. The omnipresence and growing intensity of VUCA in the business environment present roadblocks to most companies' journey towards their objectives. Increasingly, VUCA changes how they view the world, interact with each other, and respond to their environments. While risk management principles will continue to be relevant, companies need to proactively adopt a VUCA lens when implementing risk management, including each phase of the risk management process. The framework and process must be continuously strengthened to be fit for purpose in the constantly-changing face of VUCA.

The many moving and evolving parts in the VUCA environment call for existing risk identification methodologies to incorporate a more robust risk foresight. This requires a risk-sensing mechanism that moves with the pace of the dynamic VUCA landscape. Companies' risk responses include avoidance, reduction, transfer and retention. In relation to the externalities and disruptive nature of VUCA, these risk responses call for greater contingency planning and collaboration with external stakeholders (Deloitte, 2016).

6. RISK GOVERNANCE

6.1 Corporate and Risk Governance Model

The purpose of corporate governance is to facilitate accountability and responsibility for efficient and effective performance, and ethical behavior. It should protect executives and employees in undertaking the work they are required to do. Finally, it should ensure stakeholder

confidence in the ability of an organization to identify and achieve outcomes that its stakeholder value.

OECD principles of corporate governance require the equitable treatment of all stakeholders and an influential role for stakeholders in corporate governance. Finally, the principles require disclosure and transparency. All of these principles are delivered by the board of the organization and the principles, therefore, make detailed reference to the responsibilities of the board.

Corporate governance and risk management activities within a financial organization are strictly governed and regulated. Most financial organizations produce guidelines which cover director qualifications, director responsibilities considering also arrangements for the annual performance (Hopkin, 2017).

The risk management is now a focus of attention for regulators, politicians, investors and the broader public can only be regarded as a good thing. At the same time, however, company directors and managers face the immediate challenge of how to ensure that they are exercising effective control over corporate risks whilst still taking advantage of the opportunities to expand and develop their businesses (Woods, 2011).

Risk governance in firms as the ways in which directors authorize, optimize, and monitor risk taking in an enterprise. It includes the skills, infrastructure (i.e., organization structure, controls and information systems), and culture deployed as directors exercise their oversight (IFC, 2017).

One of the reviews of OECD finds that, while risk-taking is a fundamental driving force in business and entrepreneurship, the cost of risk management failures is still often underestimated, both externally and internally, including the cost in terms of management time needed to rectify the situation. Corporate governance should therefore ensure that risks are understood, managed, and, when appropriate, communicated. Currently, risk governance standards tend to be very

high-level, limiting their practical usefulness, and/or focus largely on financial institutions. There is scope to make risk governance standards more operational, without narrowing their flexibility to apply them to different companies and situations (OECD, 2014).

6.2 Stakeholder expectations

The range of the stakeholders may vary as customers, staff, financiers, suppliers, regulators and society. Dialogue with stakeholders should be based on a mutual understanding of the objectives of the organization. To obtain the fullest picture of the risks facing an organization, analysis of stakeholders and their expectations is necessary (Hopkin, 2017). The procedures of risk and stakeholder management have the similarities as explained below:

Risk management

- Identify the risks
- Understand the risks and analyze, quantify and prioritize it
- Develop a plan to minimize the negative consequences on the project

Stakeholder management

- Identify who is concerned about the project
- Understand what motivates the stakeholders and what are their concerns
- Develop a plan to maximize the satisfaction of stakeholders in the project.(Robichaud,2013).

6.3 Operational Risk management

Operational risks are usually hazard risks, and historically this has been an area of strong application of risk transfer by way of insurance. These have been differentiated by the fact that there is a need to quantify these risks in terms of potential financial loss.

Financial institutions are required to have sufficient capital reserves available to meet the actual and potential financial losses and obligations faced by the organization. This is a key requirement of the regulatory framework set out for banks in Basel Accord and under emerging regulation for European insurance companies through the Solvency European Directive.

The measurement of operational risk can involve a number of methods and these are normally based on historical information, simulated information or a combination of these (Hopkin, 2017). Credit and market risks can be manipulated by adding or taking away risks at market price without affecting the market value of the activity by the exception of transaction costs. Meanwhile, operational risks can be changed by a cost (Pezier, 2002).

6.4 Project Risk management

Project risk management is concerned about the risk embedded within delivery of the project that is supposed to be on time, within budget and to quality. The focus of risk management in projects is often on the reduction in the variability of outcomes and the management of control risks. Because of the nature of the projects, historical loss data will not usually be available. Compliance, hazard, control and opportunity risks need to be considered as part of the successful management of any project (Hopkin, 2017).

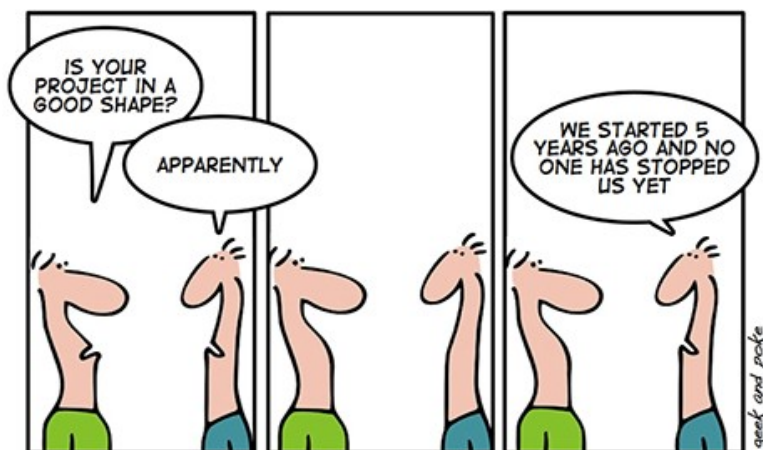


Figure 23 Barron, 2018

A multitude of project risk management processes and supporting techniques have been proposed in the last decades, thus leading to the need for understanding under what circumstances each of them should be applied and for improving the risk knowledge management process in order to obtain the expected benefits from such instruments.

The work performed at Politecnico di Milano develops a theoretical framework classifying techniques based on the phases of the risk management process, the phases of the life cycle of a project, and the corporate maturity towards risk (Cagliano, 2015).

6.5 Supply Chain management

According to ISO 28000, a supply chain is a set of interconnected processes and resources that starts with the sourcing of raw materials and ends with the delivery of products and services to end users. Supply chain may include producers, suppliers, manufacturers, distributors, wholesalers, vendors and logistic providers. They include facilities, plants offices, warehouses, and branches and can be both internal and external to an organization.

The organization should be aware of the fact that outsourcing means that the organization will not only have to focus on its own risks but should also look at the risks associated with other links in the supply chain. The scope of the supply chain can extend to strategic partnerships, joint ventures, support services and outsourcing of the management activities (Hopkin, 2017).

A work paper prepared by Politecnico di Torino, presents a risk identification and analysis methodology that integrates well established supply chain and risk management tools, such as the SCOR-Model, the Risk Breakdown Structure, the Risk Breakdown Matrix, and performance indicators. The main purpose of the framework is increasing companies' awareness about supply chain risk by providing a structured approach to identify, assess, and communicate sources and consequences of risky events.

A base case has been developed by applying the proposed approach to a hypothetical manufacturing supply chain (Cagliano, 2012). Guaranteed on-time delivery, except when it's not was a slogan of UPS, which is on the safe side of reputation especially for busy Christmas times. Schelegel and Trent define Supply chain risk as the implementation of strategies to manage every day and exceptional risks along the supply chain through continuous risk assessment with the objective of reducing vulnerability and ensuring continuity (Schelegel, Trent, 2014).

The underlying BCP practices discovered in the research provide evidence that a high degree of homogeneity exists in these firms in the core stages of awareness, prevention, remediation, and knowledge management. From an institutional theory perspective, the pressures toward isomorphic BCP practices stem from regulatory, validating, and habitualizing forces.

We envision that the future of BCP in supply management will evolve toward habituation, where purchasing professionals in leading organizations will subconsciously consider supply continuity as a standard, rote practice, similar to other business processes and philosophies such as TQM and TCO, and eventually become embedded in the everyday practices of supply management professionals. It is only through this constant awareness and vigilance to create robust supply chains via BCP can firms survive unanticipated supply disruptions (Zsidisin, 2005).

7. RISK ASSURANCE

7.1 The control environment

The main barriers to creating a comprehensive risk picture are neither technological nor financial but rather organizational, particularly when it comes to risk assurance. The traditional ways in which assurance activities and reporting are organized limit an organization's visibility into risks and into the effectiveness of its risk management, while creating unnecessary costs and exposures.

In practice, every organization needs a bespoke, fit-for-purpose approach to integrating risk assurance. The purpose will vary with the organization, and its industry, regulatory environment, business strategy, specific risks, and available resources. The entity's level of risk assurance maturity will also help determine the proper approach. To gain clarity on business drivers of value, a useful starting point is to focus on the factors that preserve and enhance value in the organization's industry, as illustrated in the table below (Deloitte, 2018).

Table 1: Category Mix

Framing business drivers for risk assurance (illustrative). Shareholder value	Business drivers that preserve value	Business drivers that enhance value
Consumer & industrial products	Product safety Brand loyalty & reputation	Market growth Customer experience Supply chain Asset performance Digitization
Energy & resources	Safety Operational integrity Financial resilienc	Production growth Asset performance Functional performance
Financial services	Regulatory compliance Financial resiliency Corporate governance Customer trust	Sales growth Margin optimization Innovation via digitization Market adaptability
Life sciences & healthcare	Drug & device safety Regulatory compliance Intellectual property Corporate governance	Sales growth Clinical innovation Operating delivery model Connected customer
Public sector	Accountability & transparency Privacy Budgeting & spend integrity Policy oversight	Optimize service delivery Innovation & digitization Policy changes

Technology, media, and telecom	Privacy Brand & reputation Intellectual property	Content monetization Customer mix Ability to scale Digital advancement, innovation
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The specific reasons for seeking to implement integrated risk assurance may vary by the organization, but the overarching goal is to receive assurance on and insights into the truly greatest risks facing the enterprise (Deloitte, 2018).

It has been suggested that a certain kind of secondary or reputational risk management increasingly pervades organizational life at all levels of society. A growing activism and individualism in the environments of organizations, amplified by political pressures, has resulted in an intensification of internal control practices (Power, 2004).

There are different definitions of internal control:

CoCo: All the elements of an organization that, taken together, support people in the achievement of the organization's objectives. The elements include resources, systems, processes, culture, structure and tasks.

COSO: A process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: effectiveness and efficiency of the operations; reliability of financial reporting; compliance with applicable laws and regulations.

IIA: A set of processes, functions, activities, sub-systems, and people who are grouped together or consciously segregated to ensure the effective achievement of objectives and goals.

The purpose of the control environment is to ensure consistent responses to risks that materialize. A well-developed control environment will also ensure that pre-planned responses to a crisis situation are efficiently and effectively implemented (Hopkin, 2017).

Although the focus on risk management has, for some time, been a key trend in the field of internal auditing, audit committees continue to consider it a major area of concern.

The IIA has issued guidance on how to provide internal audit opinions regarding the risk management, internal control, and governance activities of an organization by updating standards within its International Professional Practices Framework

With enterprise risk management (ERM) becoming a top organizational priority, organizations' internal audit plans are being aligned with key enterprise risk areas to provide assurance that these risks are being managed effectively and kept in check by management.

7.2 Risk assurance techniques

The Audit committee is in a position to evaluate the governance standards within the organization, ensure that risk management receives appropriate attention, and seek assurance on the levels of compliance achieved within the organization. The function of the audit committee is to seek risk assurance and check that the procedure for the identification of significant risks is appropriate. The audit committee should validate that the significant risks have been correctly identified, as well as seeking assurance that critical controls have been correctly implemented.

Although the focus on risk management has, for some time, been a key trend in the field of internal auditing, audit committees continue to consider it a major area of concern. The IIA has issued guidance on how to provide internal audit opinions regarding the risk management, internal control, and governance activities of an organization by updating standards within its International Professional Practices Framework. The risk management policy should set out the roles and responsibilities for risk management and internal control. The purpose of risk

management is to fulfil mandatory obligations, provide assurance, support decision making and help ensure the effectiveness and efficiency of core processes. Risk assurance is an important component of the overall risk management process. The audit committee will seek assurance that all of the significant risks are adequately managed and that all of the critical controls are effective and they have been efficiently implemented (Kapoor, 2012). Corporate governance is a major concern for all organizations and their stakeholders. Risk assurance is an important part of it and the benefits are as follows: build confidence with stakeholders; provides reassurance to sponsors and financiers; demonstrates good practice to regulators; prevents financial and other surprises; reduces the chances of damage to reputation; encourages the risk culture within the organization; allows more secure delegation of authority (Hopkin, 2017). Risks might be infinite, but resources aren't. Thus, the task of improving risk and control management while also minimizing costs continues to be at the forefront of every internal auditor's mind.

The traditional approach to risk management—listing out and managing hundreds of risks—is no longer an efficient one. With the growing need for better risk management policies and lower costs, there needs to be a stronger focus on key business objectives that set boundaries for risk assessment. This helps related activities remain relevant and manageable (Kapoor, 2012).

7.3 Internal audit activities

Internal control is concerned with the methods, procedures and checks that are in place to ensure that a business organization meets its objectives. Because internal control is concerned with the fulfilment of objectives, there is a clear link with risk management activities.

The activities that are core for internal audit include reviewing the management of key risks, evaluating the reporting of those risks and evaluating risk management processes. Setting the risk appetite, imposing risk management processes and taking decisions on risk responses do not enter at their working area. Undertaking an internal exercise has the steps of planning, fieldwork, audit report and follow-up (Hopkin, 2017). Internal audit systems can support the quantification of relevant inherent risks and residual risks. They provide an aggregate view of an

organization's risk profile, enabling internal auditors to prioritize and plan their activities more effectively (Kapoor, 2012). Controls exist to address risks. For example, if there were no risk that assets would be stolen, there would not have been an emphasis in accounting systems on proper segregation of duties. According to The IIA, "Control is any action taken by management to enhance the likelihood that established objectives and goals will be achieved. Management plans, organizes, and directs the performance of sufficient actions to provide reasonable assurance that objectives and goals will be achieved.

Thus, control is the result of proper planning, organizing, and directing by management. In the context of governance, the key is to ensure that controls are in place to address key organizational risks. Management implements the controls, while other participants in governance play more of an oversight or assessment role (Hermanson, 2003).

Then	Now
Provided assurance over threats (i.e., the downside of risk).	Provides assurance over threats and opportunities (i.e., the downside and upside risk).
Performed discrete audits on compliance with internal controls	Performs integrated audits on governance, risk management, and controls
Acted as a back-office function	Acts as a front-office function
Provided lagging indicators about risk	Provides leading indicators about risk
Was the "cop" that management	Is the "expert" that management seeks avoided

Figure 24 Comparison of Internal Control of Then and Now: (Kapoor, 2012).

7.4 Reporting on risk management

Reporting requirements have become increasingly detailed and it is sometimes necessary for organization to produce separate reports for different regulatory authorities. Also, some organizations may decide to issue specific reports to achieve a high profile for certain aspects of their organization (Hopkin, 2017). From the 1990s onwards, successive failures in public companies led to demands for greater accountability and more visibility of the companies' risks. The scandals at Polly Peck, BCCI and Robert Maxwell led to the UK Government's Cadbury Committee report in 1992. It recommended measures for better governance, such as the separation of the roles of Chairperson and CEO.

Following public concern about directors' rising pay, the Greenbury Report advocated controls on boardroom pay through the creation of remuneration committees. In 1998 the UK's Department for Trade and Industry launched a review of company law aimed at developing a more modern framework for doing business in twenty-first century. A year later the Institute of Chartered Accountants in England and Wales published the Turnbull Report. This called for stronger internal financial controls and better monitoring of risk.

The European Union (EU). was equally concerned. In 1999 it decided to harmonize accounts across Europe, so that investors in one country could understand and trust annual reports from a company based in another country. The EU Accounts Modernization Directive required, among other things, a report on 'environmental and employee matters'. From then on, company reports were to be broader in scope. But the scandals continued to erupt. In 2001 the \$101bn energy business Enron was found to have committed massive accounting fraud. Its auditor, Arthur Andersen, was found guilty of criminal charges and collapsed. The scandal led to the US's Sarbanes-Oxley Act of 2002 which demanded more risk management and better annual reporting.

To meet this requirement, the Committee of Sponsoring Organizations of the Treadway Commission (COSO). organization (a respected US based private sector grouping that sets out best practice in enterprise risk management). launched a document called 'Enterprise Risk Management – Integrated Framework'. It outlined how public companies should implement risk management and report on it. In Europe, meanwhile, Italian shareholders discovered that nearly €4 billion of funds purportedly owned by dairy company Parmalat, and supposedly held in a Bank of America account, did not actually exist. Partly in response to the EU Accounts Modernization Directive, the UK published its Operating and Financial Review (OFR). in 2004. This required companies to publish information in their annual report about their principal risks, as well as non-financial information about environmental and employee matters.

In 2006 the EU passed the 8th Directive which formally embedded risk management into public companies and 'public interest entities' such as banks. These businesses were to have an audit committee to whom the external auditors would report findings about weaknesses in internal controls. This directive ensured that what was good practice in many countries was applied all across Europe.

Today all organizations have to comply with a raft of legislation and are watched by regulators. There is no going back to the buccaneering days when companies could do as they liked. These measures ensure that large companies are better managed and that they have systems for identifying risks. This means that organizations are less likely to fail. However critics point out those controls failed to prevent Western banks from precipitating the 2008 global recession (Sadgrove, 2015). Sarbanes-Oxley act states that an approved risk management framework should be used to evaluate risks to accurate financial reporting. The framework recommended for ensuring the accuracy of financial disclosures is the COSO Internal Control framework. Meanwhile, there have been some comments that it's a costly and time consuming exercise (Hopkin, 2017).

The new process of financial statement attestation claims to incorporate both more effective auditing and greater ‘added-value’ client service by allowing the auditor to comment and advise the client, both upon business risks and the accounting implications of those risks. While traditional audit is said to be oriented towards ‘compliance’, the Business Risk Audit approach is said to create value; whereas the traditional approach is ‘transactions based’, the evolving audit is risk based (Robson, 2007).

Using a robust audit management system, internal auditors can efficiently organize audit data to support their recommendations and can gain management support for taking action. Some systems are equipped with powerful dashboards that provide real-time visibility into all the audit activities across the enterprise. This improves audit tracking and enables audit progress to be measured against key milestones for timely execution (Kapoor, 2012).

II. RISK MANAGEMENT INSTITUTIONS, STANDARDS AND RISK MANAGEMENT APPROACHES

1. RISK MANAGEMENT INSTITUTIONS AND STANDARDS

1.1 Risk Management Standards terminology

It is important to know what standards are and what they are not. There is a lot of confusion as to what is a standard (which is typically voluntary), and what is a regulation (mandated through legislation). What is important to note is that standards organizations generally have diverse input and usually develop voluntary standards. If they are developed outside of a recognized standards setting body and become generally accepted and dominant, it's called de facto standard. These are mostly objective based. Companies may seek primarily to transfer and mitigate risks through compliance and control activities. Standards might become regulated if adopted by a government, or mandatory if agreed upon in a business contract. In practice, standards often are used by auditors to determine whether a company is complying with these best practices (seen by some as equal to controls).

The controls are developed collaboratively over time through experience. They are expanded or modified periodically to reflect new practices. It is important to note that controls, as such, do not evolve in scope or speed to keep up with new risks that are being taken. They are not designed to be predictive of emerging or future risks. Controls are vitally important, but they are inadequate for reasonable assurance that risks are being managed effectively. In addition, ratings agencies do not produce risk management standards.

Rating agency scrutiny of organizations' risk management practices creates intense focus on ERM preparations for the respective credit rating evaluations and, most importantly, the potential bearing that disciplined risk practices may have on credit ratings.

Based on the review, all of the standards and frameworks are similar in the following ways. All require:

- Adoption of an enterprise approach, with executive level sponsorship and defined accountabilities
- Structured process steps, oversight and reporting of the identified risks
- Understanding and accountability for defining risk appetite and acceptable tolerance boundaries
- Formal documentation of risks in risk assessment activities
- Establishment and communication of risk management process goals and activities
- Monitored treatment plans (RIMS 2011).

1.2 Risk Management Institutions- Mandatory or regulated standards

1.2.1 OECD – Corporate Governance

Firstly, the principles were developed in 1999 and updated in 2004 by OECD members together with the participation of the experts from Basel committee, World Bank and other similar institutions. For the companies published by the OECD on May 16, 2016, foreseeable risk factors were noted in the final report of the principles of corporate governance. Users of financial information and market participants are informed that there is a need for information on reasonably foreseeable significant risks, including: financial market risks, including risks specific to the industry or geographical area in which the company operates, dependency on commodities, interest rates or currency risks; risks associated with derivatives or off-balance sheet transactions; business management risks; and environmental risks.

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.

The Principles are intended to help policy makers evaluate and improve the legal, regulatory, and institutional framework for corporate governance, with a view to support economic efficiency, sustainable growth and financial stability. There is no single model of good corporate governance. However, some common elements underlie good corporate governance. They have been explained in 6 chapters:

I). Ensuring the basis for an effective corporate governance framework;

The chapter emphasizes the role of corporate governance framework in promoting transparent and fair markets, and the efficient allocation of resources. It focuses on the quality and consistency of the different elements of regulations that influence corporate governance practices and the division of responsibilities between authorities. In particular, new emphasis is placed on the quality of supervision and enforcement. The chapter also includes a new principle on the role of stock markets in supporting good corporate governance.

II). The rights and equitable treatment of shareholders and key ownership functions;

The chapter identifies basic shareholder rights, including the right to information and participation through the shareholder meeting in key company decisions. The chapter also deals with disclosure of control structures, such as different voting rights. New issues in this chapter include the use of information technology at shareholder meetings, the procedures for approval of related party transactions and shareholder participation in decisions on executive remuneration.

III). Institutional investors, stock markets and other intermediaries;

This is a new chapter which addresses the need for sound economic incentives throughout the investment chain, with a particular focus on institutional investors acting in a fiduciary

capacity. It also highlights the need to disclose and minimize conflicts of interest that may compromise the integrity of proxy advisors, analysts, brokers, rating agencies and others that provide analysis and advice that is relevant to investors. It also contains new principles with respect to cross border listings and the importance of fair and effective price discovery in stock markets.

IV). The role of stakeholders in corporate governance;

The Principles encourage active co-operation between corporations and stakeholders and underline the importance of recognising the rights of stakeholders established by law or through mutual agreements. The chapter also supports stakeholders' access to information on a timely and regular basis and their rights to obtain redress for violations of their rights.

V). Disclosure and transparency;

The chapter identifies key areas of disclosure, such as the financial and operating results, company objectives, major share ownership, remuneration, related party transactions, risk factors, board members, etc. New issues in this chapter include the recognition of recent trends with respect to items of non-financial information that companies on a voluntary basis may include, for example in their management reports.

VI). The responsibilities of the board;

The chapter provides guidance with respect to key functions of the board of directors, including the review of corporate strategy, selecting and compensating management, overseeing major corporate acquisitions and divestitures, and ensuring the integrity of the corporation's accounting and financial reporting systems. New issues in this chapter include the role of the board of directors in risk management, tax planning and internal audit. There is also a new principle recommending board training and evaluation and a recommendation on considering the establishment of specialized board committees in areas such as remuneration,

audit and risk management. The Code foresees the public disclosure of sufficient and comprehensive information so that investors are fully informed about the company's significant and foreseeable risks. Risk public disclosure is most effective when it is tailored to a specific company and industry. Public disclosures about the surveillance system and the management system are considered to be an increasingly good practice.

In the same report, it was emphasized that the Board of Directors should assume a leading role in ensuring effective risk management. It should be ensured that the supervisory supervision of the top management is carried out appropriately. This normally involves the establishment of internal audit systems directly linked to the board of directors.

Significant changes have been observed in recent years in the role of risk management in companies. About 30 years ago, many companies regarded risk management as merely insuring the company's major fixtures.

Even financial institutions, which have always been ahead of others in terms of risk management, have been actively managing interest and foreign currency risks in general up to recent years. But over the past 20 years, institutions have begun to take into account different types of risks, such as operational and strategic risks, and actively manage them.

In particular, the Board of Directors demonstrates risk appetite and engagement for the structuring of Enterprise Risk Management. Other than these, the legislation also has steering systems and reports according to different sectors.

1.2.2 COSO

Preventing fraudulent financial reporting, internal control, risk management, corporate governance and prevention of misconduct by preparing comprehensive guidelines in order to lead the idea through; Founded in 1985 under the sponsorship of the American Certified Public Accountants Institute, the American Accounting Association, the Institute of Financial

Managers, the Institute of Internal Auditors, the Institute of Management Accountants.(Buluc 2018).

The United States corporate risk management framework was published in accordance with the COSO Internal Control Framework published in 1992; so that enterprises should also develop risk management systems in addition to internal control investments (Mattie ve Cassidy, 2008: 3).

The Public Company Accounting Reform and Investor Protection Act, or Sarbanes-Oxley Act, which is seen as an endeavor to improve controls over financial reporting of companies, and at the same time, as an endeavor to support effective corporate governance, after the business scandals that broke out in the early 2000s, was signed on July 30, 2002, covering all of the publicly traded companies traded on the stock exchanges.

Within the framework of items 302 and 404 of the Law, it was obliged to determine the risks on the financial reporting of the companies, to document and evaluate the controls related to the identified risks, and to be directly responsible to the managers of the company (PWC, 2017). In the United States, almost all of the companies subject to this regulation use the COSO framework while evaluating internal controls.

In 2004, the second report, COSO II: COSO ERM- Enterprise Risk Management was developed. For the first time in this report, enterprise risk management term is mentioned. Enterprise risk management is defined as a process established to provide reasonable assurance that corporate objectives are achieved.

This process aims to identify the possible events that may affect the organization and manage the risks that these events may create according to the institution's risk appetite. Thus, the risks that the organization will be exposed to in the internal control activities are being dealt with in a more detailed manner throughout the organization (Göğüş, 2013: 47).

COSO revised the Corporate Risk Management Framework and re-published it in June 2017 as "Enterprise Risk Management-Integrating with Strategy and Performance". Some of the reasons for the renewal include the emergence of new risks, more complex risks, increased stakeholder awareness of risk management, better risk reporting expectations, and the development of corporate risk.

The five interrelated components together with their principles are shown at the diagramme below (COSO, 2017).



Figure 25 COSO 20 principles – 2017

The 20 principles in the revised COSO Enterprise Risk Management Framework are briefly described below.

A-Governance and Culture:

Governance and culture form the basis of other elements of corporate risk management. Governance is defined in general terms; roles, responsibilities and responsibilities between stakeholders, the board of directors and management. Governance determines the organization's style and creates supervisory responsibilities. Culture is a way of understanding the attitudes, behaviors and risks that affect the decisions of management and staff, and reflects the vision, mission and core values of the organization.

There are five principles of this element:

1. Principle: Exercises Board Risk Oversight - The Board of Directors fulfills the oversight and governance responsibilities of the Strategy to support the management's realization of strategy and business objectives. Board members must be accountable and responsible for risk oversight and possess the required skills, experience and business knowledge.

2.Principle: -Establishes Operational Structure -Strategy is executed by organisation and execution of day-to-day operations to achieve business objectives.Different study models can lead to risk profiles in different perspectives that may affect ERM implementations.

3. Principle: Defines Desired Culture-The organization defines the desired behavior that characterizes the institution's culture. Whether an organization considers itself to be risk averse, risk neutral or risk aggressive, it should have a risk-aware culture.

4.Principle: Demonstrate Commitment to Core Values –The strong and supportive attitude of the organization's top management is essential for ERM. A coherent attitude helps an organization to gain a general understanding of the core values, business objectives, behaviors expected from staff and business partners.

5.Principle : Attracts, Develops, and Retains Capable Individuals– The organization attaches great importance to building human capital in line with its strategy and business objectives. In order to achieve it, management takes into account knowledge, ability and experience requirements and creates the necessary processes and processes for attracting, educating, evaluating, retaining, and scheduling people.

B- Strategy and Target Determination (Strategy And Objective Setting).

In the strategy planning process, corporate risk management works together with strategy and goal setting. In line with the strategy, a risk appetite is determined. These are business objectives; the basis for determining, evaluating and responding to risks. Business objectives

enable the implementation of the strategy and shape the organization's day-to-day operations and prioritization.

Under this element there are four principles:

6. Principle:—Analyzes Business Context- The organization analyzes the potential impact of the business environment on the risk profile. "Business environment" includes trends, relationships, and other factors that will influence, clarify, or change the current and future strategy and business objectives of an organization.

For this reason, an organization considers the business environment while developing a strategy to support its mission, vision and core values. Both internal and external environments and stakeholders have to be considered as components of the business environment.

7. Principle:—Defines Risk Appetite- The organisation defines risk appetite in the context of creating, preserving and realising value. The risk appetite statement is considered during strategy setting, communicated by management, embraced by the board and integrated across the organization. There is no standard or "right" risk appetite to be applied to all institutions.

8. Principle:—Evaluates Alternative Strategies- Alternative strategies are built with different scenarios— and those alternatives may be sensitive to be updated. The organisation evaluates strategic options and sets its strategy to enhance value, considering risk resulting

9. Principle: – Formulates Business Objectives- While setting up business objectives, the organization takes into account the risks at various levels, in line with the strategy and supporting it. The organization must understand the potential impact of selected business objectives on its risk profile, resources and capabilities and it should be aligned with the risk appetite.

C- Performance

Risks that may affect achieving strategy and business goals should be identified and assessed. Risks should be prioritized according to risk appetite. Risk responses should be selected to form a portfolio view of risk. There are five principles of this element:

10. Principle: -Identifies Risks– The organization determines the risks that affect the strategy and fulfillment of business objectives including the new and emerging ones. The risk identification process should consider risks arising from a change in business context and risks currently existing but not yet known.

11. Principle: –Assesses Severity of Risks- The organization assesses the severity of risks. The identified risks are assessed in order to understand the degree of importance of each risk organization to its strategy and its access to business objectives. Risk assessment approaches can be qualitative, quantitative, or both. Approach types include scenario analysis that may be very useful to assess risks with high impact , simulation, data analysis and interviews.

12. Principle: –Prioritizes Risks- The organization prioritizes the risks to create the basis for the response to the risks. Organizations prioritize risks to determine and select appropriate risk responses. Priorities are determined by applying criteria such as adaptability, complexity, promptness and continuity agreed upon. Risk prioritization is performed at all levels of the institution and different risks can be given different priorities at different levels.

13. Principle: – Implements Risk Responses– Management can select the responses as "accepting, raising, sharing, and avoiding risk". It considers the business environment, costs and benefits, obligations and expectations, risk priorities, risk importance, and risk appetite to select and implement risk responses.

14. Principle: -Develops Portfolio View- Portfolio view is a composite view of the risks the organization faces relative to business objectives, which allows management and the board to

consider the nature, likelihood, relative size and interdependencies of risks, and how they may affect performance. With the management portfolio perspective, the institution can now determine whether the risk profile is in line with the general risk appetite.

D –Review and Revision

The organization oversees how the performance is achieved according to the targets, whether the corporate governance practices are working well, whether it adds value to the organization, whether it continues to add value, and whether there are issues to be corrected in the light of significant changes. Under this element there are three principles:

15. Principle: -Assesses Substantial Change- Important changes that may cause new risks or changes in existing risks should be monitored, placed in business processes and monitored continuously. Rapid growth, new technologies, changes in legal regulations, mergers and acquisitions, etc. significant changes in the domestic and the global environment may potentially change the portfolio outlook for institutional risk or may affect the functions of enterprise risk management.

16. Principle: -Reviews Risk and Performance- Organizations monitor the performance of the institution to determine how risks evolve and how those risks affect strategy and business goals when compared to risk appetite. The task of assessing risk responses is typically owned by those accountable for the effective management of identified risks and by assurance providers.

17 Principle: -Pursues Improvement in Enterprise Risk Management- The organization follows improvements in enterprise risk management. Organizations can systematically determine the potential to improve their productivity and utility by continually evaluating the enterprise risk management system. Embedding continuous evaluations can systematically identify improvements

E – Information, Communication & Reporting

Communication is the gathering of information, sharing across the organization, and it is a process that is constantly repeating. This information for decision-making must flow up, down and across the organisation and provide insight to key stakeholders. Under this element there are three principles:

18. Principle: - Leverages Information and Technology–Information systems provide the organisation with the data and information to support ERM. Information systems can be as simple as work tables, or as complex as fully integrated systems and tools. The decision to which technology will be applied depends on various factors such as organizational goals, market needs, competitive conditions, cost and benefit.

19. Principle: -Communicates Risk Information- The organization uses communication channels to support corporate risk management. Organizations use a variety of channels to effectively communicate risk information and knowledge to all internal and external stakeholders, including board and shareholders. In addition, effective communication between the board and management has critical implications for achieving strategy and business goals.

20.Principle: -Reports on Risk, Culture and Performance– The organization reports on risk, culture and performance at various levels within the organization. Risk reporting encompasses information required to support decision-making and enable the board and others to fulfill their risk oversight responsibilities (Buluc 2018, COSO 2017, IRM 2018).

1.2.3 OCEG

In the early 2000's, one of the main reasons of the scandals emerges were siloed, misguided and ineffective systems. For example, the risk management system, the ethics system, the performance management systems may be disconnected. OCEG aimed to consolidate all the systems in the company to have a future state more effective, more efficient and able to address modern challenges.

In order to realize this, the teams from different backgrounds and professions have been put on the same page, namely:

- Governance and strategy
- Risk management
- Audit and internal audit
- Compliance and legal
- Ethics and culture
- IT

OCEG has been founded in 2002. In 2004, following to the group studies, the first GRC standard emerges. Originally called the Capability Model, the cover was a deep red, which later known as the OCEG Red Book. It detailed practices for GRC “the integration of the governance, assurance and management of performance, risk, compliance and ethics”. In 2005, the second version was published and the following year, the principled performance is defined. Another way to look at the benefits of Principled Performance is through the lens of universal outcomes of high-performing GRC capabilities that every organization should seek to achieve.

Many organizations have adopted a vision toward principled performance – a point of view and approach to business that helps organizations reliably achieve objectives while addressing uncertainty (both risk and reward). and acting with integrity. Principled Performance is enabled by integrating and orchestrating areas that, in many organizations, are fragmented and siloed – areas such as governance, performance management, risk management, internal control, compliance and audit.

In this GRC (Governance, Risk, and Compliance). Capability model, the techniques are embedded and codified including a mix of proactive, detective and responsive actions and controls (OCEG, 2012).

10 Universal Outcomes of Principled Performance today:

1. Achieve Business Objectives; Ensure that all parts of the organization work together toward the achievement of enterprise objectives.
2. Ensure Risk Aware Setting of Objectives and Strategic Planning; Provide timely, reliable and useful information about risks, rewards, and responsibilities to the governing authorities, strategic planners, and business managers responsible for execution at all levels.
3. Enhance Organizational Culture; Inspire and promote a culture of performance, accountability, integrity, trust, and communication.
4. Increase Stakeholder Confidence; Grow stakeholder trust in the organization.
5. Prepare and Protect the Organization; Prepare the organization to address risks and requirements while protecting the organization from adversity and surprise and enabling it to grasp opportunities.
6. Prevent, Detect, and Reduce Adversity and Weaknesses; Establish actions and controls to prevent negative outcomes, reduce impact, detect potential problems, and address issues as they arise.
7. Motivate and Inspire Desired Conduct; Provide incentives and rewards for desirable conduct, especially in the face of challenging circumstances.
8. Stay Ahead of the Game; Learn information necessary to support quick changes in strategic and tactical direction while avoiding obstacles and pitfalls.

9. Improve Responsiveness and Efficiency; Establish capabilities that make the organization as a whole more responsive and efficient so that it has a competitive advantage.

10. Optimize Economic Return and Values; Allocate human and financial resources in a way that maximizes the economic return generated for the organization while maximizing its values.

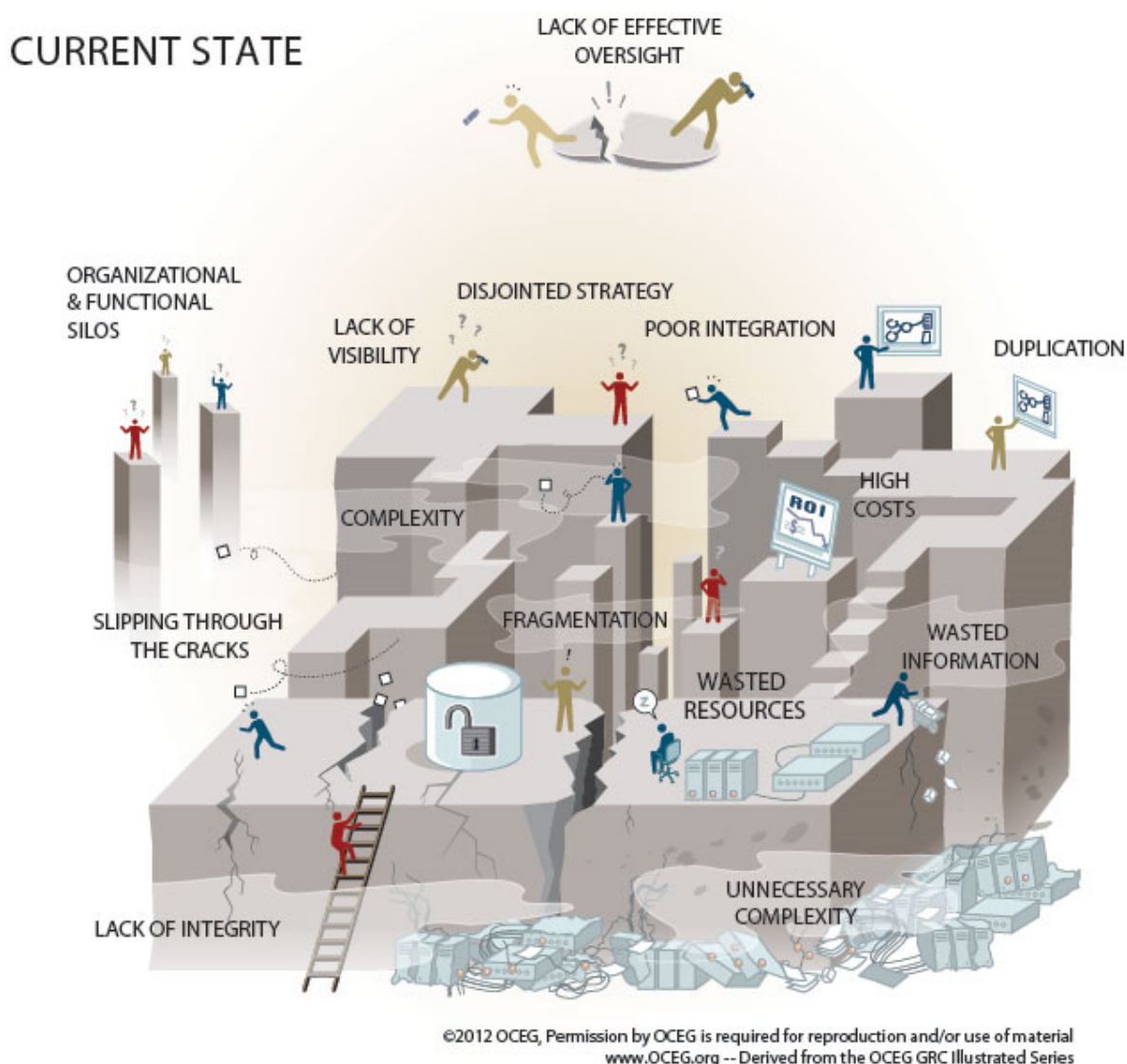


Figure 26 Current state of organization view (OCEG,2012).

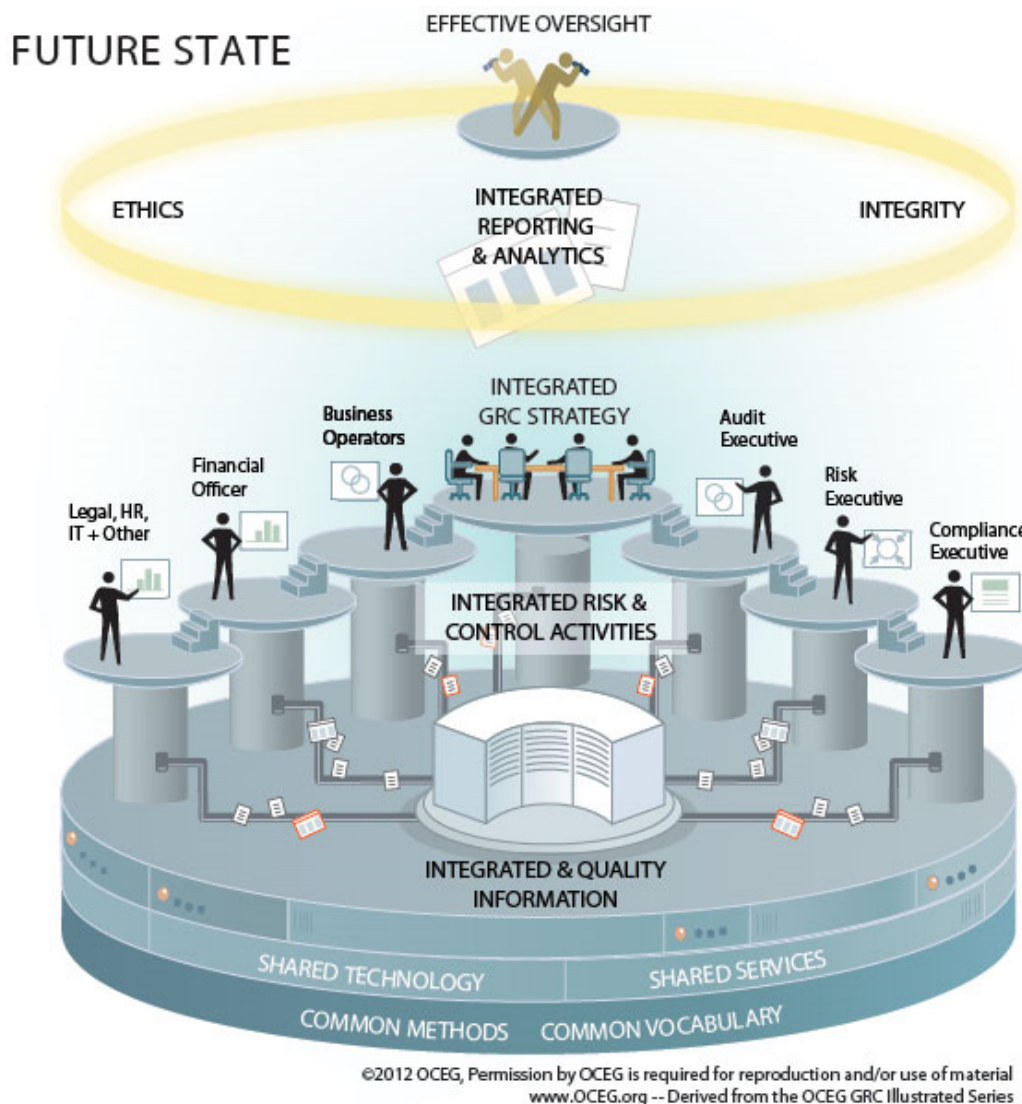


Figure 27 Future state of organization view (OCEG,2012).

1.2.4 TSX

At the disclosure of Toronto Stock Exchange about the Corporate Governance, in one of the guideline, there is a clear citation to the risk management. Among the stewardship of the company, the Board should assume the responsibility for overseeing the operation of the business and supervising management. It includes the identification of the principal risks of the corporation's business and ensuring the implementation of appropriate systems to manage these risks (TSX- 2018).

1.2.5 CAS (Casualty Actuarial Society).

A casualty actuary is a professional skilled in the analysis, evaluation and management of the financial implications of future contingent events primarily with respect to general insurance, including property, casualty, and similar risk exposures. A casualty actuary has practical knowledge of how these various risks interact with each other and the environment in which these risks occur (CAS, 2018).

Leading international organization, founded in 1914, covers experts and educates the society about property and casualty insurance, reinsurance, finance, risk management, and enterprise risk management. The CAS is the world's only actuarial organization focused exclusively on property and casualty risks. It offers a framework about hazard, financial, strategic and operationak risks.

Property and casualty actuaries analyze risk information about an organization in order to reduce future risk. These positions require mathematical aptitude and a degree. Jobs in this field are growing much faster than all jobs.

Property and casualty actuaries seek to minimize the impact of undesirable future events on corporations - particularly the loss of funds, damage of property or death. Actuaries do so by analyzing the current and past habits of an organization. They then compare their findings to related data sets, and finally they make predictions on what events may occur based on all available factors.

A strong foundation in mathematics and business is needed for this profession.

The purposes of the Casualty Actuaries:

- Projecting loss costs
- Evaluating liabilities and outstanding casualty losses

- Appraisal of financial arrangement for risks
- Recommendation particular funding levels and risk financing plans

Many actuarial concepts are within risk management applications such as credibility, distribution of loss by size, collective risk and interest theory. It would be better to understand at least the basics of actuarial sciences (Oakley, 1982).

The principles for actuaries are described as following:

1. Statistical Principles

- 1.1. Statistical Regularity: Phenomena exist such that if a sequence of independent experiments is held under the same specified conditions, the proportion of occurrences of a given event stabilizes as the number of experiments becomes larger.
- 1.2. Stochastic Modeling: A phenomenon displaying statistical regularity can be described by a mathematical model that can estimate within any desired degree of uncertainty the proportion of occurrences of a given event in a sufficiently long sequence of experiments.

2. Economic and Financial Principles

- 2.1. Diversity of Preferences: Different people may assign different current monetary values to the same economic good
- 2.2. Time Preference: Money has time value; that is, people tend to prefer receiving money in the present to receiving that same amount of money in the future

2.3. Present Value Modeling: For many persons, there exists a mathematical model that can estimate the current monetary value that the person would assign to any future cash flow.

3. Actuarial Modeling Principles

3.1. Modeling of Actuarial Risks: Actuarial risks can be stochastically modeled based on assumptions regarding the probabilities that will apply to the actuarial risk variables in the future, including assumptions regarding the future environment.

3.2. Validity of Actuarial Models: The change over time in the degree of accuracy of an initially valid actuarial model depend upon changes in:

- a. the nature of the right to receive or the duty to make a payment;
- b. the various environments (regulatory, judicial, social, financial, economic, etc.) within which the modeled events occur; and
- c. the sufficiency and quality of the data available to validate the model.

3.3. Combinations of Cash Flows: The degree of uncertainty of the actuarial value of a combination of cash flows reflects both the uncertainties affecting each underlying actuarial risk variable and the process of combination.

4. Risk Management Principles

4.1. Risk Classification: For a group of risks associated with a given actuarial risk, it is possible to identify characteristics of the risks and to establish a set of classes based on these characteristics so that:

- a. each risk is assigned to one and only one class; and

b. probabilities of occurrence, timing and/or severity may be associated with each class in a way that results in an actuarial model which, for some degree of accuracy, is:

- (1). valid relative to observed results for each class or group of classes having sufficient available data, and
- (2). potentially valid for every class.

- 4.2. Pooling: If the actuarial risk associated with a risk classification system displays statistical regularity, it is possible to combine risk classes so as to ensure that there is an actuarial model associated with the new set of risk classes that is valid within a specified degree of accuracy.
- 4.3. Antiselection: If the premium structure of a voluntary insurance system is based on a risk classification system such that a refinement of the system could result in significant differentials in considerations between risks originally assigned to the same class, there will be a tendency for relatively greater participation by those whose considerations would increase if the refinement were put in place.
- 4.4. Induced Experience: The experience rates for events associated with a financial security system will tend to differ from those for the same events in the absence of any such system.
- 4.5. Insured Experience: The experience rates for the insurable events of an insurance system will tend to differ from the overall rates of occurrence of the same events among all those subject to a given actuarial risk.
- 4.6. Avoidance of Ruin: For most ruin criteria, there are combinations of values of the financial parameters that will reduce, below a given specified positive level, the ruin probability relative to an actuarial model.

- 4.7. Actuarial Soundness: For most financial security systems, there are combinations of margins that will produce, relative to a valid actuarial model, a degree of actuarial soundness that exceeds a given specified level less than one (Dicke,1992).

1.2.6 Basel

The International Bank for Reconstruction (BIS). was founded in 1930 in Basel, Switzerland, at the Young Plan, which was formed during the Hague conference. The Young Plan actually foresees the restructuring of Germany's debts after World War I. After the Great Financial Crisis of 1930, notwithstanding this configuration, Germany declared a moratorium, and with the 1932 Lausanne agreement, all debts were cleared. BIS has also been instrumental in foreign exchange transactions, international payments, gold deposits and swaps as well as the mission of providing co-operation between the Central Banks. Towards the end of 1930, political tensions increased and the work of the founding institution became harder. During this period he helped carry gold from Europe to the United States. When World War II started, BIS management meetings were interrupted. Meanwhile, during the war, the organization maintained its neutrality for all kinds of bank operations that might be needed.

At the Bretton Woods conference convened after World War II, it is anticipated that BIS will complete its activities as soon as possible after the newly formed IMF and World Bank organizations. The European Central Banks have lobbied for the rest of the BIS, holding a different position. In 1950, 18 European countries adopted BIS as intermediary bank in their co-operation in exchange business. After the establishment of the European Economic Union in 1958 with the Rome treaty, the European Central Banks continued to meet again in 1993 within the BIS. In 1992 the BIS again led the formation of the European Monetary Union. This center was moved to Frankfurt with the establishment of the European Monetary Institute in 1993. This ensuit was named by the European Central Bank in 1997.

Outside Europe, he also played an active role in the functioning of the gold standard of the Bretton Woods system. Of course, at the beginning of the 1970s, the US abandoned this standard and left the value of the dollar to fluctuate. These years have not only been devaluation and inflation, but also the times when international trade has increased. The need for financial stability was to come back. In 1974 Bankhaus Herstatt in Germany and the Franklin National Banks in the USA were examples of banks lacking control over international exchange business. In 1982, a crisis in Latin America was caused by excessive borrowing of insufficient banks.

As a consequence of all these events, in 1988 the Basel Committee established the framework for measuring credit risk, setting the acceptable standards for banks globally for banks. The motivation was for deregulation period, increase in international banking and decline in capital ratios of banks, The main capital contract was updated in 2004 in Basel 2, 2010 in Basel 3. The main aim of these standards is to reduce the financial risks that may arise by strengthening the global financial system. At Basel 2, the most important innovation versus the Basel 1 was to take risk assessment. In addition to credit and market risk, the capital adequacy ratio is to include the operational risk as well. Operational risk according to Basel 2 was defined as the risk of harm from external influences due to insufficient or incorrect internal practices.

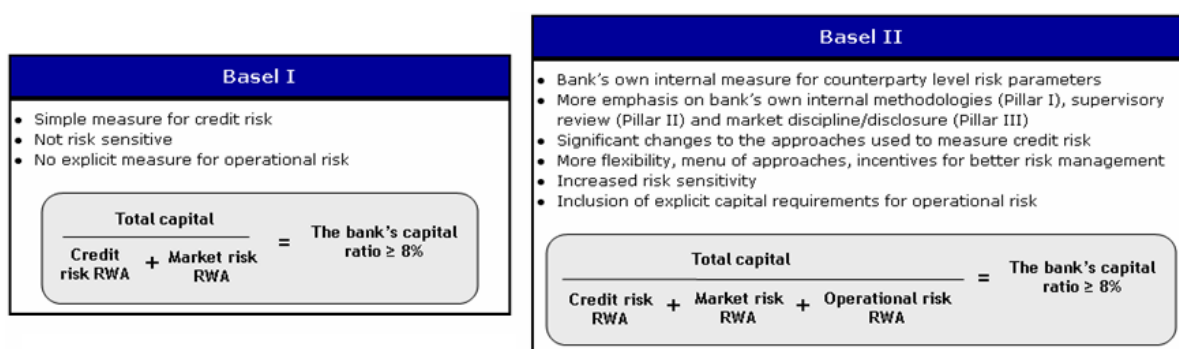


Figure 28 Comparison of Basel 1 and Basel 2 Source: (Marcus, 2010).

Basel II uses a three-pillars concept:

- Pillar 1 - minimum capital requirements (addressing risk).

The first pillar deals with ongoing maintenance of regulatory capital that is required to safeguard against the three major components of risk that a bank faces - Credit Risk, Operational Risk, and Market Risk.

◦Credit Risk component can be calculated in three different ways of varying degree of sophistication, namely Standardized Approach, Foundation Internal Rating-Based (IRB) Approach, and Advanced IRB Approach.

◦For Operational Risk, there are three different approaches:

◦Basic Indicator Approach (BIA).

◦Standardized Approach (STA).

◦Internal Measurement Approach, an advanced form of which is the Advanced Measurement Approach (AMA).

◦For Market Risk, Basel II allows for Standardized and Internal approaches. The preferred approach is Value at Risk (VaR).

◦As the Basel II recommendations are phased in by the banking industry, it moves from standardized requirements to more refined and specific requirements that are tailored for each risk category by each individual bank. The benefit for banks that do develop their own bespoke risk measurement systems is that they are rewarded with potentially lower risk capital requirements.

- Pillar 2 - supervisory review

This is a regulatory response to the first pillar, giving regulators better 'tools' over those previously available. It also provides a framework for dealing with Pension Risk, Systemic Risk, Concentration Risk, Strategic Risk, Reputational Risk, Liquidity Risk, and Legal Risk, which the accord combines under the title of Residual Risk.

- Pillar 3 - market discipline

This pillar aims to encourage market discipline by developing a set of disclosure requirements, which allow market participants to assess key pieces of information on the scope of application, capital, risk exposures, risk assessment processes, and hence the capital adequacy of the institution. Market Discipline supplements regulation, as sharing of information facilitates assessment of the bank by others (including investors, analysts, customers, other banks, and rating agencies). which leads to good corporate governance. By providing disclosures that are based on a common framework, the market is effectively informed about a bank's exposure to those risks, and provides a consistent and understandable disclosure framework that enhances comparability. These disclosures are required to be made at least twice a year, apart from qualitative disclosures that provide a summary of the general risk management objectives and policies, which can be made annually. Institutions are also required to create a formal policy on what will be disclosed and controls around them along with the validation and frequency of these disclosures. In general, the disclosures under Pillar 3 apply to the top consolidated level of the banking group to which the Basel II framework applies.

The Basel Committee on Banking Supervision has identified seven categories of operational risk according to Basel 2 and posted in 2014:

These are:

1. Internal fraud: losses due to fraud for personal benefit in the organization
2. foreign fraud: damages caused by third party fraud
3. employment and occupational safety practices: losses due to non-conformity with occupational health and safety
4. customers, products and business practices: losses incurred by unrecognized customer expectations
5. Damage to physical assets: damages that may result from an accident or attack

6. business breakdown and system breakdowns: losses that may occur in systems or in logistics execution, delivery and process management: losses due to non-compliance.

There are multiple risk factors in banking activities. Therefore, there are studies on international standards for accurate measurement, supervision and a stable money market. Basel is one example. It is an arrangement that determines the minimum amount of capital that banks must hold. Basel II was seen as an opportunity in the Turkish financial system. Overall having an effect on its robustness and effectiveness, the Basel system still imposed various costs within the banking system. Imposing new technical knowledge and requiring necessary investments in human resources and information systems, the system with it brought more effective management of banking function. Various studies are carried out to minimize the negativities that arise with Basel application. For this reason, national initiatives have been left to audit authorities. Basel II reduces the capital adequacy of banks to a certain extent, but there is no negative situation due to the high capital adequacy ratio in the Turkish banking system. Capital adequacy ratio is approaching 16% from 23% as applied to Basel provisions. The minimum level should be 8%. While Basel II implementation in the US has just begun, Basel III studies were quickly initiated. As confidence in the capital adequacy ratios of banks' internal systems has decreased, several studies have been published since the 2008 crisis. It was aiding against the overbearing effect of the systemic risk. The leverage ratio is very easy to use however, the negative side is that it does not distinguish between risk types. Basel risk criteria and leverage ratio may prevent the accumulation of residual rate. Excessive risk taking is prevented. These developments will affect the credit industry (credit, mortgage). Lending rates of banks will decrease but they will take protection against credit risk. It will contribute to financial risk and growth. Banks that have spent enough effort for Basel 2 will be ready for Basel 3 application. 2. If the structural block is still unclear and incomplete, it is still a positive contribution to Basel 2. Because it has brought together the regulators and industry to discuss the methods of internal capital measurement. As risk profiles change from bank to bank, the diversity of these methods increases. Standardizing measurement within strict rules is a concern that may cause systemic risk, which is not the purpose of regulators. Advanced banks have tried to draw attention to the importance of internal methods for managing risk for years.

However, the assessment agencies are expecting 5 billion Euros and the regulators have a capital of 7 billion Euros while the internal audit calculates 4 billion Euros. One of the problems encountered in integrating the rules of developing countries systems in Basel 2 application is the disappearance of standardization. Basel 2 focuses on more active banks in the international arena. The two main objectives here are the robust financial situation and the creation of equal conditions for competition. Developing countries are more concerned with the first. This implies that Basen should be applied to every advanced bank regardless of whether it is active internationally or not. In Basel 2, two valuation methods are mentioned. SA (standard method) and IRB (internal valuation method). Developing economies can find themselves in a dead end in both methods. The assessment is that the institutions will have difficulty and that the IRB has a great responsibility for the banks.

The Basel III framework is a central element of the Basel Committee's response to the global financial crisis. It addresses a number of shortcomings in the pre-crisis regulatory framework and provides a foundation for a resilient banking system that will help avoid the build-up of systemic vulnerabilities. The framework will allow the banking system to support the real economy through the economic cycle. Basel III banks have rules to keep for the risk of credit, including increasing the amount of capital and tightening the definition of capital. An important new feature of Basel III should be met by banks, specifying the liquidity requirements. The 2017 reforms seek to restore credibility in the calculation of risk weighted assets (RWAs). and improve the comparability of banks' capital ratios. RWAs are an estimate of risk that determines the minimum level of regulatory capital a bank must maintain to deal with unexpected losses. A prudent and credible calculation of RWAs is an integral element of the risk-based capital framework. Basel III full implementation is expected to be by 2019. Basel III focused on enhancing the stability of the financial system by increasing both the quantity and quality of regulatory capital and liquidity. It increased capital thresholds by raising Tier-1 capital requirements to 6 percent from 4 percent, introduced buffers and leverage ratio requirements, and added the Common Equity Tier-1 (CET1). requirement of 4.5 percent.

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
	Leverage ratio		2014 exposure definition				Revised exposure definition G-SIB buffer						
Capital	Capital conservation buffer	1.25%	1.875%	2.5%									
	Minimum common equity plus capital conservation buffer	5.75%	6.375%	7.0%									
	Minimum total capital plus conservation buffer	9.25%	9.875%	10.5%									
	Phase-in of deductions from CET1 ¹	80%	100%										
	Capital instruments that no longer qualify as non-core Tier 1 or Tier 2 capital	Phased out from 2013											
Risk coverage	Capital requirements for equity investments in funds and exposures to CCPs	Implementation											
	Standardised approach to counterparty credit risk	Implementation											
	Revised securitisation framework	Implementation											
	Interest rate risk in the banking book	Implementation											
	Large exposures framework				Implementation								
	Revised standardised approach for credit risk							Implementation					
	Revised IRB framework							Implementation					
	Revised CVA framework							Implementation					
	Revised operational risk framework							Implementation					
	Revised market risk framework							Implementation					
	Output floor							50%	55%	60%	65%	70%	72.5%
Liquidity	Liquidity Coverage Ratio	80%	90%	100%									
	Net Stable Funding Ratio		100%										

Table 2 Basel III transitional arrangements, 2017-2027

Source: Bank of International Settlements (2018).

Basel IV reforms are still being discussed and the implementation is planned to be finalized from 2021 until 2025. Banks will need to raise more capital, and will likely have to take some unconventional measures to comply. The repercussions will vary, depending on banks' geography and business model, and will require actions tailored to the individual bank's circumstances (McKinsey and Company, 2017).

Apart from the Basel committee, there was the market committee established in 1964, the Global Finance System committee established in 1971, and the committees of payment and exchange transactions established in 1990. BIS, including that of Turkey as of today 44 countries, including the Central Bank of the system still continues its activities, including the Basel city center (BIS, 2004, 2018).

1.2.7 Solvency

It has been determined in the European Union; is the standard of the insurance companies for the insurance companies to be able to get out of the difficult situation or for those who are insured not to suffer losses. Along with life insurance in 1973, in 1979 regulations on life insurance were issued. In the mid-1990s, insurance regulations to be applied in the whole group were published. The scope of Solvency 2 has been extended not only to the European Union but also to the whole world, and has entered into force by 2016. In essence, it includes regulations that allow insurers to get the rights of insurers without going to default. Solvency 1 did not take account of risk assessment profiles. Unlike the first one, Solvency 2, prudent response levels have been identified from an economic point of view, unrealized capital gains have been reduced and existing risk levels have been taken into account (Kirschner, 2009).

Solvency I:

- Limited scope methodology to determining how much capital an insurer needs to hold
- Defined how an insurance company should calculate its liabilities
- Determined capital requirement by adding an industry-standard solvency margin on top of the calculated liability amount

Solvency II brings:

- Basel II three-pillar structure adapted for the insurance sector
- move away from one approach fits all to an approach geared to the risks which companies are exposed to it encourages companies to measure and manage risk
- takes into account the risks associated with the company's organization and management approach
- providing sufficient capital in order to reduce the risk of ruin to an acceptably low level and hence increase the level of protection to policyholders
- make allowance for subsequent adaptation to international prudential and accounting developments □ intended to avoid a proliferation of reporting systems and potential regulatory arbitrage (Kirschner, 2009).

Solvency 2 encouraged the mechanisms of auditing. In addition, the insurance companies have made progress in their effective use of the functions of accepting and spreading the risks. The European Union has contributed to the development of the financial sector. In addition, it provides margin assurance by creating margin shares for difficult to predict damages. Solvency 2 is regulated on the same principles as Basel 2. The framework has been prepared considering all the risks that insurance companies may face. Stress test is a useful tool for insurance management.

The Solvency II regime offers incentives, potentially in the form of reduced capital requirements, to implement appropriate risk management systems and sound internal controls. As in Basel II for Banking, the regime has a three pillar structure, with each pillar governing a different aspect of the Solvency II requirements and approach: Quantitative Requirements; Supervisor Review; and Market Discipline. As well as requiring firms to disclose their capital and risk frameworks, the Directive also asks firms to demonstrate how and where the requirements are embedded in their wider activities (Asymptotix, 2018).

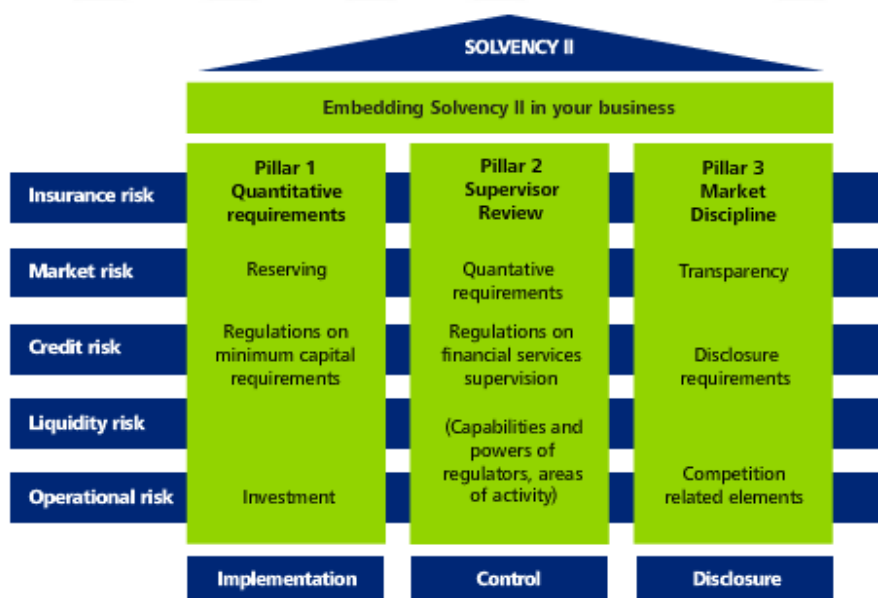


Figure 29 Three pillars for Solvency 2

Source: Asymptotix (2018)

1.2.8 Common for Basel and Solvency

According to the Basel 3 and Solvency 2 standards, many financial institutions have used the loss distribution approach for the capital account required for operational risks. In both cases, the objective is to provide risk optimization. In one of these approaches, the combination of internal and external data, as well as the appropriate opinions of experts, is provided by Bayez model. Calculation of operational risk values is important for many financial institutions. Particularly the involvement of internal and external data has been challenging for many. The Basel committee formed a matrix of 7 risk types for 8 business lines. For the resulting 56 risk cells, financial institutions are working to model frequency and damage.

1.3 Risk Management Institutions- standards by institutions

1.3.1 ISO

ISO naming derives from the word isos, meaning equal. The International Organization for Standardisation (ISO). was initially established in 1926 as the International Federation of the National Standardizing Associations (ISA)., which was the first international standardising body with general competence. The ISA then transformed to ISO in 1946 when delegates from 25 countries met at the Institute of Civil Engineers in London and decided to create a new international organization ‘to facilitate the international coordination and unification of industrial standards’. On 23 February 1947 the new organization, ISO, officially began operations. Since then, over 22206 International Standards covering almost all aspects of technology and manufacturing have been published. Today there are members from 162 countries and 780 technical committees and subcommittees to take care of standards development. More than 135 people work full time for ISO’s Central Secretariat in Geneva, Switzerland (International Organization for Standardization, 2018).

The opening of national markets revealed the prevalence of technical barriers to trade and the need for international standards to facilitate trade. The development of international standards for freight containers in the 1960s is one important example of ISO standards contributing to the development of the global. At the same time, the adoption of the International System of Units facilitated technical dialogue at the international level and the development of new technologies required the rapid development of new standards. These changes in international context led to changes in the way standards were developed – until this point, international standardisation had consisted mainly of the harmonisation of existing national standards, but this increasingly shifted towards the direct development of standards at international level.

Managing risk is important in whatever quality system. Risk-based thinking is something we all do by nature in order to obtain the best outcome. The ISO 9001 system has been built over the concept risk (International Organization for Standardization, 2018).

- Risk-based thinking ensures risk is considered from the beginning and throughout the process approach
- Risk-based thinking makes proactive action part of strategic planning
- Risk is often thought of only in the negative sense. Risk-based thinking can also help to identify opportunities. This can be considered to be the positive side of risk.

One of the key changes in the 2015 revision of ISO 9001 is to establish a systematic approach to risk, rather than treating it as a single component of a quality management system. In previous editions of ISO 9001, a clause on preventive action was separated from the whole. Now risk is considered and included throughout the standard (International Organization for Standardization, 2018).

By taking a risk-based approach, an organization becomes proactive rather than purely reactive, preventing or reducing undesired effects and promoting continual improvement. For all types of organizations, there is a need to understand the risks being taken when seeking to

achieve objectives and attain the desired level of reward. Organizations need to understand the overall level of risk embedded within their processes and activities. The concept of “risk” in the context of ISO 9001 relates to the uncertainty of achieving the objectives of the system, which is to provide products and services that conform to customers’ requirements.

By understanding those risks and exploring ways in which the risks can be mitigated, the organization will also have an opportunity to drive change and improvement. In this context it may be worth considering taking an enterprise-wide approach to Risk Management to assist future integration.

In Clause 4 the organization is required to determine the risks which can affect its ability to meet the system objectives. It recognizes that the consequences of risk are not the same for all organizations. For some, the consequences of delivering a non-conforming product are minor; for others the consequence can be fatal. So risk-based thinking means considering risk quantitatively as well as qualitatively, depending on the business context.

In Clause 5 top management is required to demonstrate leadership and commit to ensuring that risks and opportunities that can affect the conformity of a product or service are determined and addressed. In Clause 6 the organization is required to take action to identify risks and opportunities, and plan how to address the identified risks and opportunities.

Clause 8 looks at operational planning and control. The organization is required to plan, implement and control its processes to address the actions identified in Clause 6. In Clause 9 the organization is required to monitor, measure, analyze and evaluate the risks and opportunities. In Clause 10 the organization is required to improve by responding to changes in risk.

ISO 31000 Enterprise Risk Management standard is the international standard that emerged as a guiding guide for organizations. This standard requires that the potential risks that may prevent the achievement of the objectives are systematically managed in a way that

minimizes the potential damage. While all organizations are managing to a degree of risk, they have been developed to improve best practice practice management techniques of this standard. All ISO standards are reviewed every five years and then revised if needed. This helps ensure they remain relevant, useful tools for the marketplace.

A revised version of ISO 31000 was published in 2018 to take into account the evolution of the market and new challenges faced by business and organizations since the standard was first released in 2009. One example of this is the increased complexity of economic systems and emerging risk factors such as digital currency, both of which can present new and different types of risks to an organization on an international scale.

ISO 31000:2018 provides more strategic guidance than ISO 31000:2009 and places more emphasis on both the involvement of senior management and the integration of risk management into the organization. This includes the recommendation to develop a statement or policy that confirms a commitment to risk management, assigning authority, responsibility and accountability at the appropriate levels within the organization and ensuring that the necessary resources are allocated to managing risk. The revised standard now also recommends that risk management be part of the organization's structure, processes, objectives, strategy and activities (IRM, 2018). It places a greater focus on creating value as the key driver of risk management and features other related principles such as continual improvement, the inclusion of stakeholders, being customized to the organization and consideration of human and cultural factors. The content has been streamlined to reflect an open systems model that regularly exchanges feedback with its external environment in order to fit a wider range of needs and contexts. The key objective is to make things clearer and easier, using plain language to define the fundamentals of risk management in a way that the reader will find easier to comprehend (Nazif, 2018).

1.3.2 FERMA

The Federation of European Risk Management Associations (FERMA) represents the risk management profession at European level. In today's competitive business environment, Risk Management – which is defined as “managing the threats and opportunities to our businesses within acceptable risk tolerances” – plays a vital role in the success of all businesses. It has been founded in 1974 and formed by 22 risk management associations from 21 countries. Risk Managers bring their professional expertise to this discipline and to corporate governance. Increasingly throughout Europe, organisations employ Risk Managers, whose function embraces risk identification and mapping, risk control and risk financing, including insurance.

Historically in financial institutions, risk functions such as legal, compliance, audit, credit risk and market risk were managed in separate organisational silos. Operational risk was generally the responsibility of business units as part of their daily activities. Risk management was focused primarily on financial, predictable and quantifiable risks related to loss prevention. Since the 1980s, risk management has evolved to include corporate governance, alignment to strategic objectives, capital adequacy and stakeholder value. Additionally, regular discussions on risk management started appearing on corporate board agendas. In 2003 FERMA has adopted the Risk Management Standard to establish a uniform pan-European approach to risk management procedures sets out a strategic process, starting with an organisation's overall objectives and aspirations, through to the identification, evaluation and mitigation of risk, and finally the transfer of some of that risk to an insurer.

FERMA prepared a response to the European Commission about the consultation on non-financial reporting guidelines. It urges the Commission to recognise in its guidelines the fundamental role of risk managers and the value of Enterprise Risk Management (ERM) methodology in the reporting of non-financial elements. ERM may work well thanks to deep understanding of the business plan of the organization. It is a pre-condition to identify the principle risks connected with the elements of Corporate Social Responsibility (CSR). to be reported and then consider how they can be mitigated.

In that respect, FERMA also understood that what is commonly called Corporate Social Responsibility (CSR). is just one of the many non-financial risk factors to be considered. FERMA strongly believes that reporting the risks connected with CSR elements goes far beyond concern for reputation management. Thanks to being in control of these risks opens the way for productivity and efficiency gains over the long term. This will apply especially in areas like energy and raw materials consumption, workforce stability and performance, and the capacity to create new markets for new products and services. When it comes to reporting these risks on an enterprise basis, it will be difficult for specialists in each department to connect different aspects of risk across other functions, leaving grey areas where reporting may be incomplete. Yet, one missed element can result in fines, legal costs, of contracts, personal injuries and, thus, cost the organisation its reputation and impact it financially. Organisations need to be assisted in this new process of reporting risks linked to non-financial information. Risk reporting is a key element of the risk manager's role.

Because of the cross-functional nature of the risk manager's mission, he or she is the best placed person in the organisation to provide assurance that the various types of risks, including CSR, faced by an organisation have been identified and managed. This reporting contains an analysis of risks connected to the non-financial elements and a response to them. The choice of methodology is crucial and should facilitate the disclosure by making it understandable, reliable and comparable. The benefit of having risk managers in charge of this risk reporting is that it makes it possible to validate the strength of the organisation's response to these threats. Reporting on these risks cannot be limited to the financial impact.

FERMA strongly supports the idea that companies should take a sustainable and long-term strategic approach to their businesses. FERMA has always promoted consideration of the full range of risks, allowing the board and top management to properly set their risk appetite according to the full scope of possible impacts and to prepare a suitable response, such as mitigation plans. The creation of a complete, company-wide risk management policy, including non-financial aspects, that leads to thorough risk knowledge should be seen as a global decision-making tool for the board.

1.3.3 RIMS

As the preeminent organization dedicated to educating, engaging and advocating for the global risk community, RIMS, the risk management society, based in US, is a not-for-profit organization representing more than 3,500 corporate, industrial, service, nonprofit, charitable and government entities throughout the world. RIMS have a membership of approximately 10,000 risk practitioners who are located in more than 60 countries. It's also a member of IFRIMA as FERMA.

It has been founded in 1950 with the name National Insurance Buyers Association, where the first mission was to lay foundations and building a community. In 1969, the name became Risk Management and then in 1975 took its actual title as RIMS. From 1979 on, it has been conducting risk surveys (RIMS, 2018).

Today, its mission is stated as “educate, engage and advocate for the global risk community”.

Its Strategic Goals:

- Ensure a sustainable and adaptable organizational structure.
- Equip risk professionals to succeed in an evolving environment.
- Enhance engagement with members and the broader risk management community.
- Expand RIMS influence worldwide

The organization is dedicated to education, engaging and advocating for global risks community worldwide. The RIMS Risk Maturity Model is an online assessment tool for enterprise risk management (ERM). Developed in 2006, and it has been recognized as a best practice framework by several National Organizations.

Throughout the years RIMS kept up with the changing aspects of risk management, and could meet the global and local demands in risk management to become the most efficient association in the world.

According to RIMS, the principles of ethics for a risk management professional:

- Act with honesty, respect and integrity at all times
- Comply with all applicable legal and regulatory requirements
- Maintain appropriate privacy and confidentiality
- Avoid conflicts of interest, actual and perceived
- Demonstrate and promote professional responsibility within the risk management profession
- Disclose material risk management concerns to the highest levels within one's organization
- Represent the best interests of the stakeholders of one's organization at all times

1.3.4 IRM

The Institute of Risk Management (IRM). was founded in April 1986 to meet growing demand for a diploma course in risk management. It was one of the first such qualifications with universal benefit for students working in risk management in any sector, whether in industry, commerce, academia or elsewhere.

The Risk Management Standard was originally published by the Institute of Risk Management (IRM)., The Association of Insurance and Risk Manager (AIRMIC). and The Public Risk Management Association (Alarm). in 2002. It was subsequently adopted by the Federation of European Risk Management Association (FERMA).

Despite the publication of ISO 31000, the Global Risk Management Standard, IRM has decided to retain its support for the original risk management standard because it is a simple guide that outlines a practical and systematic approach to the management of risk for business managers. In 2011, they published the first-member-led thought leadership guidance: Risk appetite and risk tolerance guidance paper, and then in 2014 followed another one about Cyber risk.(IRM,2018).

	Leadership level	Senior level	Management level	Support level
Relevance of risk management	Advocates risk management as a central part of an organisation's strategic management.	Educates an organisation on the probability, nature and scope of risks and opportunities and their likely impact on an organisation.	Advises on the selection and implementation of appropriate concepts and processes.	Explains different types of risks and possible responses to their treatment.
Tools and techniques	Ensures resilience is incorporated into organisational strategy.	Builds resilience across an organisation to manage current and future risks, opportunities and uncertainties.	Analyses the suitability of the use of risk management tools and techniques and makes recommendations.	Explains risk management standards, concepts, theories, processes and approaches to risk management.
Principles of risk management	Anticipates and influences risk management thinking at a national and/or international level.	Advises on the appropriateness of different approaches to managing risks.	Champions the benefits of risk management to stakeholders.	Explains the value of risk management.

Figure 30 IRM Risk management standard (IRM,2018)

IRM also consolidated a report about the risk perspectives on the future, explicitly in 2025 by gathering different opinion of the key people from the sector. According to this work, at one version, risk managers will work closely with the boards. They will use the technology to involve all the stakeholders concerned about the threats and opportunities that the company may face. At another version, they will just work as back office for compliance with less leadership function.

The future shape will depend following to the risk managers themselves adaption: if they may be able to respond to the needs of board quickly the first one will be more probable. In order to realize this, they need to get the necessary informations about the company and find the ways to communicate them properly for board actions. They should also create a general environment to put the risk management as a part of the corporate culture. In other words, they

need to embed the risk mentality throughout the organization's frontline. They should also realize more through forward thinking style, by not depending only on the past datas. They may also contribute more to the strategic actions of the company such as growth.

1.3.5 OTHERS

There are other standards and guidelines that have been used around the globe, particularly the Australia/New Zealand 4360:2004 standard. It was resulted with international adoption of the ISO 31000. IEC (International Electrotechnical Commission). 62198:2013 provides principles and generic guidelines on managing risk and uncertainty in projects. In particular it describes a systematic approach to managing risk in projects based on ISO 31000, Risk management - Principles and guidelines (International Electrotechnical Commission, 2018).

JIS Q 2001 is the risk management standard developed for Japan industries. BSI, the British Standards Organisation issued its code of practice in 2008 which was updated in 2011. It is designed to help managers develop, implement and maintain effective risk management within the business. Using BS 31100 can help managers better their company's performance. The Association of Insurance and Risk Managers (AIRMIC). and ALARM (The National Forum for Risk Management in the Public Sector).are the others that was formed in 2002 (IIA,2018)

The International Federation of Risk and Insurance Management Associations (IFRIMA). is the international umbrella organization for risk management associations, representing 20 organizations and over 30 countries around the world (including FERMA,RIMS). With its roots going back to the 1930s and its development through the discipline of insurance and risk management, In October 1988 the first world congress on risk management was sponsored by the International Federation of Risk and Insurance Management Associations (IFRIMA). As an "association of associations", IFRIMA's primary objective is to provide a forum for interaction and communications among risk management associations and their members.

2. RISK MANAGEMENT APPROACHES INTERNATIONALLY

2.1 WEF (World Economic Forum).

The World Economic Forum, committed to improving the state of the world, is the International Organization for Public-Private Cooperation. The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

It was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland. It is independent, impartial and not tied to any special interests. The Forum strives in all its efforts to demonstrate entrepreneurship in the global public interest while upholding the highest standards of governance.

Moral and intellectual integrity is at the heart of everything it does. It was called firstly European Management Forum by his founder Professor Klaus Schwab for the purpose of catching up with US management practices. He also developed and promoted the 'stakeholder' management approach, which based corporate success on managers taking account of all interests: not merely shareholders, clients and customers, but employees and the communities within which they operate, including government. From 1976 on, the European Management Forum introduced China, which would stimulate economic reform policies. In 1987, the European Management Forum took the name the World Economic Forum.

This forum facilitated the peace talks between Greece and Turkey in 1988, North-South Korea meetings at ministerial level for the first time in 1989, East-West Germany discussion for the unification and meeting of South African President de Klerk with Nelson Mandela and Chief Mangosuthu Buthelezi at the same event. In 2015, the Forum was formally recognised as an international organization.

From WEF 2018 report,

Top 10 risks in terms of Likelihood

1. Weapons of mass destruction
2. Extreme weather events
3. Natural disasters
4. Failure of climate-change mitigation and adaptation
5. Water crises
6. Cyberattacks
7. Food crises
8. Biodiversity loss and ecosystem collapse
9. Large-scale involuntary migration
10. Spread of infectious diseases

Top 10 risks in terms of Impact

1. Extreme weather events
2. Natural disasters
3. Cyberattacks
4. Data fraud or theft
5. Failure of climate-change mitigation and adaptation
6. Large-scale involuntary migration
7. Man-made environmental disasters
8. Terrorist attacks
9. Illicit trade
10. Asset bubbles in a major economy.

The history and the list of top 5 Global risks in terms of likelihood and impact is illustrated as below in the report (WEF,2018).



Figure 31 Global Risks in terms of impact and likelihood (WEF 2018)

In the report, the most rising concern became cyber attack risk, which is the third biggest one, where it was not even in the top 10 list, as impact. From the likelihood, it's at number 6 as it was last year. The devices in internet are 8,4 billion versus the world population of 7,6 billion today; and it's expected to grow up to 20,4 billion until 2020.

Between the years 2008-2010, economic risks were at the top of the list together with at least 2 to 4 ones at top 5 as both likelihood and impact. From 2011 on, environmental issues began to rise and in 2018 report, 3 of 5 top risks are environmental at two categories. Extreme weather events is the top risk at likelihood as last year. On the other hand, the top risk that is seen from the impact, became weapons of mass destruction similarly. No economic risk is resulted among top 5 as likelihood or impact in the recent 2 years.

These results come at a time of improvement in the global economy, albeit a relatively modest one—the International Monetary Fund (IMF). expects global GDP growth of 3.6% for

2017, up from 3.2% in 2016. Recovery is underway in all of the major economies, leading to a sharp improvement in sentiment (WEF- THE Global Risk Report 13rd edition 2018).

Following to their statement, The World Economic Forum adheres to the principles of independence, impartiality, moral integrity and intellectual integrity. WEF has a saying to be committed to improving the state of the world. For example, there is also an interrogation introduced by the forum about the effects of machine learning to the discrimination risks to the human. In this exploration they have sought to identify areas (geographic, industry-specific, technical). where discrimination in machine learning is most likely to impact human rights. Companies can work together with domain experts, stakeholders, and relevant partners from both the public and private sectors to leverage machine learning in a way that includes and benefits people, and prevents discrimination. In doing so, they will not only cultivate huge value for society, but also build public trust and reduce the risks of reactive, poorly informed regulation That can be confusing and economically costly. There is no one-size-fits-all solution to eliminate the risk of discrimination in machine learning systems, and the solutions may be tailor made for each entity (Kochi,2018).

2.2 Global CEO point of view- KPMG (2016).

At a meeting with 1300 CEOs from the world's 10 largest economies, a report was prepared describing how they prepared the change, their priorities, forecasts, risks and plans. 72% of the surveyed CEOs were more critical than the last 50 years in the next 3 years. Nevertheless, the vast majority trust in the global economy. They are prioritizing talent development and acquisition to keep pace with these changes, and they are even considering increasing the number of employees. In the next 3 years, the risk that they think they are the most important ones and they are not ready is the risk of cyber. It seems that CEOs are worried about the speed of change and how to keep up with new technologies (77%). plan to invest in data analysis on this (25%).

2.3 RIMS/Marsh surveys and reports

2.3.1 Emerging risks (2016).

It has been a report based on more than 700 responses to an online survey and a series of focus groups with leading risk executives conducted by Marsh and RIMS in January/February 2016. Emerging risk is a novel manifestation of risk or type that has not been experienced previously. Dynamic risks are known to exist, but may change over time. Global and emerging risks are complex, usually exogenous, threats and uncertainties that may have significant, unexpected impacts on company earnings and market positioning. Trajectories of these risks are hard to predict due to extensive interdependencies with other issues. Companies are not able control such risks they can only mitigate their exposures. Among dynamic risks, the next critical risks that may emerge in the organization are cyber attacks and then regulations.

Regulations also may have become more important especially due to the recent politics of US and Brexit process. Talent availability, fiscal crises, sustainability demands and social instability would be also a concern within 3 years. Another point that is stated, the majority of risk professionals generally agree that forecasting critical business risks and emerging risks is difficult today and won't get any easier in the next three years mainly because of cultural, institutional reasons. Lack of cross-organization is seen still a concern to understand emerging risks by the risk management, but not as much by C-suite.

In order to understand them, they rely mainly on reading news and publications. They may also discuss them at the risk committees. They would mostly prefer to use techniques to model emerging risks as claims-based reviews and analyses developed by third parties. They would mostly use data and analytics for quantifying specific risks and understanding risk tolerance. Finally, they would like to invest mostly to cyber-risk management (RIMS, 2016).

2.3.2 RIMS/Marsh - Delivering strategic value through risk management (2013)

The 2013 Excellence in Risk Management survey gathered the views of more than 1,200 risk professionals worldwide, top executives, and others.

Risk managers, in order to play more of a strategic role, need to connect the dots in their organizations and understand how priorities are set and how action steps are determined at upper levels of leadership. For the top choice regarding focus areas for developing their organizations' risk management capabilities, risk professionals chose: improve the use of data and analytics. The management and risk professionals think that identifying and assessing risks arising from the strategic plan is the top reason why risk management is included in strategic planning and execution activities. It was also asked whether the organization has a formal risk appetite/tolerance report; more than half didn't do so. The management has the tendency to evaluate the performance of the risk managers mostly through the insurance and claims cost reductions (RIMS,2013).

2.3.3 RIMS/Marsh Risk Management and organizational alignment (2014).

The concerned Excellence in Risk Management survey, produced collaboratively by Marsh and RIMS, was compiled from online responses received in February 2014 from nearly 600 risk professionals, C-suite executives, and others involved in risk-related functions (Salter, 2018). Recently, more focus is directed to the risk management especially at strategic decision phase by the Board. They have also the dialogue about black swans. The top management sees mostly CFO's as the head for the execution of risk strategy.

In considering the risk management needs, the ability that would be mostly important strategy and execution aptitude in 3 to 5 years. There is a different view between the benefit of the use of data and analytics between the top management and risk professionals. The first one considers it mostly for risk mitigation and identification and the second one for understanding the organization's risk bearing capacity. Only 35% of the respondents find risk committees very effective. There was an improvement in the use of analytics for understanding of organizational risk bearing capacity (RIMS, 2014).

2.3.4 RIMS/Marsh Ready or not, disruption is here (2017).

The published RIMS 2017 Enterprise Risk Management Survey explores the evolution of ERM, drawing comparisons to the Society's 2013 survey. The survey highlights the effectiveness and advantages of ERM programs, as well as leadership's expectations of ERM, implementation strategies and challenges.

Key findings from the survey include:

- 73% of respondents report either having fully or partially integrated ERM programs;
- 87% agreed that executive management expects the ERM program to identify, prioritize, manage and monitor major risks;
- 61% say that ERM is being used to inform and influence strategy;
- 62% say that the risk management department is responsible for ERM activities.

Responses to the survey were collected via internet link from March 6, 2017 to May 6, 2017. There were 397 respondents from more than 14 different industries (Salter, 2018).

The Fourth Industrial Revolution has arrived and is spreading at warp speed. Technology today plays a vital role in promoting global prosperity, but the pace and scope of innovation also creates uncertainty, expressed by some as disruptive technology. These are technologies that either purposefully displace existing products or that introduce ground-breaking ways of doing business, creating a new industry or turning an established one on its head. 52% of risk professionals say their organization does not use or plan to use internet of things, but the actual usage arrived already at 90%. The biggest barrier that the organization sees to assess the impact of disruptive technology risks on business strategy and decisions are inability to model the magnitude of the risk and focusing other areas. Risk committee usage is declining. These committees may contribute to establish the enterprise risk management system by facilitating the contact among the departments, consequently to improve governance to bring better understanding emerging risks (RIMS,2017).

2.3.5 RIMS/Marsh Organizational Dynamics: focus for effective risk management (2015)

There is significantly more interest, buy-in, and enthusiasm from our executives about looking at strategic risk rather than just operational or financial business risk. Organizational alignment is a necessary step to obtain it, and according to the research that RIMS conducted on line with 300 participants in the different topics about the matter, their agreement varies from 44% to 79%.

Following to this, the firms intends to keep their investment level flat, and cyber security is the first priority among their activities in the short term. %50 of the risk manager report to CFO, insurance and claims management are mostly reported directly by them.

Opportunities also exist for risk management when it comes to emerging risks. According to the survey, only 27% of risk professionals said that identifying emerging risks would be a priority in the coming year, which is counter to the message being heard from many boards that are concerned with “what’s around the corner.” (RIMS,2015).

2.4 European risk and insurance report – FERMA (2017).

This is the report that has been produced every two years since 2002 for showing the trends about the profession. It contains three parts: Europe risk manager profile, European insights on risk management and insurance management look.

The survey involved 614 participants across 21 countries and shows rising concern among risk managers about economic conditions and business continuity disruption. The participation rate was 14,39%. for the general(the first two sessions only)., 9,21% for the long completes (all the three sessions). 73% of the participants are male, 72% of them are between the age 35 and 55. 85% of the participants are from the non-financial sector. 26,3 % of the head of risk management report to CFO, 4,9% to the head of treasury, 15,9% to CEO, meanwhile, 35,% of the head of insurance to CFO, 10,7% to the head of treasury and 12% to CEO.

According to the survey conducted, it seems that the risk managers play more strategic role than before and have more contact with the top management. There is also more usage of IT tools for risk management. Nearly 79% of the risk responsables' main task is development of map of risks, risk identification, analysis, evaluation, prioritization and reporting and additionally insurance management.

Nearly 48,4% of risk responsables formally present to the board several times a year, 14% once a year and 10,9% do not. 33,9% of the organizations have risk and insurance in the same departments, 11% have audit, insurance and risk altogether. More than half of the companies have IT/GRC tools for risk mapping, risk reporting and risk registers.

Following to the participants, the most rising risks in concern are business continuity and cyber. 63,4% of the companies top risk is economic slowdown, 60,4% business continuity, and 59,5% political instability.

The priorities are mainly to embed the risk management profession as a matter of good corporate governance and resilience, to appoint of a data protection officer and assess the impact and to play more active role at the corporate governance and transparency. For insurance management, the most important activity considered is to strengthen loss prevention activity, which increased significantly versus the last survey as a percentage.(53,7%).

74,1% of the companies choose limit by maximum possible loss, 54,9% by external professional advises. 54,4% of them implement local standalone policies for compliance to local regulation. 18% of them renew the policy documents before inception date, 33% within 1 month after the inception, 34% within 3 month after the inception.

According to the service providers the most important improvement areas are confirmation of coverage position, policy wording tests and coordination between teams. According to the own organization, these are learnt lessons analysis, crisis management simulations and setup claims handling procedure. Claims related data use is more significantly for conducting insurance program retention optimization.(66,3%).

The areas of improvement that are expected for IT risk insurance platform are tailor-made and user friendly reporting (40,2%). and claims management tools (39,5%). Meanwhile, the long term contract tendency decreased as a result of the expectancy of lower variability at the premiums. The usage of captives has fallen versus the previous survey from 39% to 34%. This derived especially from the increase of operating cost, the implementation of Solvency 2 and OECD recommendations about the benefit transfer for tax purposes mainly following to the comment of FERMA. For both service providers and within their own companies, risk managers believe that cyber, liability and property are the main areas for improvement in relation to loss control services, alongside insurance policies.

3 ENTERPRISE RISK MANAGEMENT PRACTICES IN TURKEY

3.1. Public regulations

Although the first legal regulations on risk and management were introduced with Basel and Solvency, there are some entries with the law no. 5018 that may be seen. Here we can understand that institutions can provide this through budget controls, fiscal transparency. For example, the establishment of a Risk Management and Strategic Evaluation Unit in the Undersecretariat of Customs (non-priority). and the introduction of various provisions in the Customs Regulation No. 4458 from the main legislation of the Authority and the Customs Regulation on the Implementation of this Law that the administrative activities should be risk-as a positive sign (Bozkurt, 2010). According to Article 376 of the Turkish Commercial Code No 6102, the Board of Directors of stock exchange companies are obliged to establish and develop a committee in order to take the precautions for the items that threaten the existence, development and survival of the company, to take early precautions for them, and to manage it. From the same law, Article 378 arranges the independent audit of the report that is prepared by this committee. Capital Market Board (CMB). is responsible to regulate the work basis of this. Borsa Istanbul or simply BIST, which is also regulated by CMB, first in 1985 Istanbul Stock Exchange with the name opened in 2013. "Borsa Istanbul", which operates in capital markets, together with Turkish and foreign-funded banks, gives data clearing services and storage to intermediaries. On 5 April 2013, the name "Istanbul Stock Exchange" was changed to "Stock Exchange Istanbul".

3.2 Applications for the Enterprise Risk Management in Turkey

The result of a doctoral dissertation about the BİST Industrial companies was that the operational risks were less important than the financial risk management and mostly managed by the financial affairs due to the fact that there was no legal obligation at that time (Çakmakçı 2010). It has been stated that institutional risk management is increasing and adopting the performances of organizations with its applications (Akçakanat, 2012).

At another study, It was concluded that the presence of big four audit firms, profitability, company size, and the rate of financial leverage are the determinants for enterprise risk management. (Gacar, 2016).

At his PhD thesis, Topçu proposed an enterprise risk management model for the aviation industry; firstly, he concluded that this is applied insufficiently for non-financial companies in Turkey and the commodity price risk is more important in the real sector and should be managed; The exchange rate risk should be brought to the forefront and managed by SMEs or large-scale companies with globalization; In emerging economies where financial cultures are weak, the interest rate risk is less, but large-scale, The credit risk is that a rating model that the non-finance sector can apply against the bank is important for business continuity; It has been determined that semicommunal legislation requires non-financial sectors to reform risk management more effectively (Topçu, 2010).

In another study, there has been found no relationship between corporate value and corporate risk management presence between 2008 and 2013. In addition, a questionnaire on corporate risk management was prepared and no clear findings were found since the data were not sufficient (Farhan, 2016). Karacar has conducted a survey for the Field Study in the context of Risk Management for the Tender Process in Turkish Construction Sector. Accordingly, risk management organization that does the construction sector in Turkey, the biggest political risk seen in the sector, after it has determined that the financial (Karacar, 2000).

Under the heading of Risk-Focused Internal Audit and ISE Implementation, from a research of Kocaeli University, a survey was conducted by Kishalı and Pehlivanlı (2006). with a questionnaire which consists of 20 questions in three parts in total: company general information, internal audit information and finally risk assessment and risk-focused internal. It is seen that the remaining 33.3% of 66.7% of the respondents did not use the risk appraisal activities consisting of the identification, classification and measurement of the risks according to the information obtained from 36 of the IMKB 100 companies. We do not know how much is derived from the real sector since there are also financial companies in the sample (Kishalı ve Pehlivanlı, 2006).

Gunes and Teker (2010). conducted a survey on enterprise risk management awareness in the Turkish Energy Sector, 25 companies from 45 companies selected from ISO 500 were able to participate. In the 13 out of 25 firms, corporate risk management practice has just begun, or is still in full or in part resident. Even if it is concluded that 29% of energy companies (7 firms). are interested in corporate risk management, it can not be said that the remaining 71% (18 firms). are serious about this issue. ERM is applied in 72% (13 firms). of 18 informed firms (Gunes, Teker 2010).

Karaca, Senol, Korkmaz (2018). conducted a study for 231 non-financial companies of BIST for 2009-2015 period and they concluded corporate governance and ERM influences positively each other. (Karaca, Senol, Korkmaz, 2018).

Meanwhile, at another study for still 33 non-financial companies of BIST for 2009-2015 period, no relationship has been found between the presence of ERM and the firm value. (Senol, Karaca, 2017).

Following to another survey, Cakmakcı did a survey for industrial BIST companies, and had the result that they are at the beginning stage especially because of the absence of the systems and regulations. (Cakmakci,2010).

III AN ANALYSIS ON RISK MANAGEMENT IN THE NON-FINANCIAL COMPANIES IN TURKEY

1. Hypothesis Development and Methodology

In this section, information is given about the purpose of the research, the importance, the constraints, the selection of the enterprises involved in the research, the preparation and sending of the questionnaire forms, the coding of the questionnaire replied and the methods used in the statistical analysis of the data. Risk Management is an application that enhances performance for all companies and therefore contributes to the development of countries. Although the addition of new technologies has become more complicated in particular, methods that facilitate this are being investigated, recommended, and even implemented. Of course, the more competitive the market is, the more advantageous the position can be obtained. There are important institutions in the world that contribute to the development of risk management and are also members of leading companies. They organize questionnaires at different times in the profession and can update them according to changing circumstances. FERMA, the pioneer in this field in Europe, conducted the survey in 2016 to lay out the latest trend of risk managers, management methodology and insurance solutions. In addition, FERMA's similar activities in the US, RIMS conducted by the survey about the latest developments related to the profession emerges. The main purpose of our study was similar to those applying in the international structures. This work is to determine development areas in Turkey related to the profession and furthermore, it will aim also to contribute to Turkey's economy.

International recreational companies strive to exist and even go further, keeping their values and healthy structures at their best. Risk management has become an important factor in achieving this even more effectively through institutionalization. Through effective risk management, the company provides significant financial advantages by first managing resources in the most efficient way, monitoring expenditures. In addition, it can manage the costs of damages that may be large with appropriate transfer methods. Ensuring compliance with legislation from the elements of risk management is of vital importance in ensuring that the operations of the company are uninterrupted.

With all of this, it is possible to achieve results that do not deviate much from the expectations of the management by reducing the fluctuations through control. Of course, the opportunities that will arise in risk analysis also provide the possibility of analysis for the best result for the company. The success of national companies in risk management will create value for the whole country in total. If we are able to identify areas of improvement in our differences with the international world, concrete progress will be made possible.

This study aims to analyze the following research question, “Is the current risk management practices in Turkey different in comparison to the international platform?”. This argument is put forward as differences in the current legislation and corporate practices could potentially result in distinguishing results under the Turkish position. In line with the arguments proposed by Akçakanat, (2012). proposes that institutional risk management is increasing and is currently adopting the performances of organizations with its applications. Additionally, Gacar and Oncu (2017). argue that risk management is imperative in terms of businesses and the general economic system. Moreover, it is argued by Lienberg and Hoyt (2003). that risk management allows for the development of operational and strategic decisions and the generation on increased awareness. Thus, the growing importance of the subject, coupled with the fact that it is argued to be imperative for Turkey as well (Kurnaz and Çetinoğlu, 2010; Koç and Uzay, 2015). and could potentially show differences in regards to international practice (Hazır, 2017). is motivation to analyze the current national situation. Our hypothesis is as follows,

H1: The level of current risk management practices for non-financial companies in Turkey in the international platform.

The frameworks of risk management related to banking and insurance are clearly defined by the Basel and Solvency rules which are valid also in Turkey. For the remaining non-financial sectors, the risks are more complex and diverse. Related risk management platform in Turkey KRYD (Enterprise Risk Management Association). is operating about the matter.

Some companies that are not included in this platform may also be subject to evaluation. Of course, the benchmark to be taken globally will be Europe's leading platform FERMA mainly (KRYD is the member of it). and the US will be RIMS partially.

In the following sections the study conducted use of scale development in order to develop a questionnaire. The survey was tested for validity and a pilot test was employed to readjust information. Following the development of the questions, the results were analyzed individually via use of descriptive statistics; high-low frequency analysis, percentage and cross-tabulation and general frequency analysis. Moreover, related questions were combined and analyzed together via cross-tabulation.

1.1. Scale Development and Variables

The survey questions were generated via analyzing the related risk management literature and incorporating elements from the international “European Risk and Insurance Report“ and “Federation of European Risk Management Association Survey” and “Risk Management Society Survey”. The survey form was based on research results reports of FERMA and RIMS's recent risk management questionnaires. Articles, papers, internet resources related to the topic were examined and professional opinions were prepared. During the preparation of questionnaires, opinions were taken by presenting them to specialist academicians and some professions. The combination of these questions were listed under our questionnaire. The questions were translated from English to Turkish and the understand-ability of the questions were tested by employing the use of a native speaker. The native speaker was asked to translate the questions and then the results were translated back again into English. This double translation method allowed us to determine whether or not the questions were comprehensible to the reader. The results of this translation were then sent to academics in the field and the questions were modified according to their feedback. Finally, a pilot test was conducted on the study. The study was emailed to several risk managers and the results were later discussed over the phone. The final version of the scale was finalized by making necessary arrangements on the questionnaires.

The questionnaire items were collected from the scale and the results were checked for validity. For this purpose, the questionnaire was checked and corrected by academics in the field. The questionnaire consists of three parts. In the first part, the characteristics, responsibilities and activities of the administrators responsible for the risk are examined. In the second part, the methods of risk management and the risk issues that have priority in the recent period have been tried to be understood. In the third part, information about insurance usage and methods for transferring the risks was asked.

The variables of the study consist of the following elements, descriptive information regarding respondents, such as: gender, age, sector of employment, monthly income, job, reporting to whom, risk management responsibilities, activities, communication between top management, relation with other departments, firm turnover, number of employees, risk management level and approaches employed, risk mapping practices, risk quality existence, use of risk IT systems, ERP risk management programs, ERP restructuring, captive insurance existence, strategies among hard to insure risks and game plans, importance and level of risk, risk mitigation levels, future risk existence, emerging risk management approaches, existence of risk appetite reports, risk management performance evaluation, insurance management effecting factors, insurance limit evaluation, policy renewal practices, loss control/compensation claims, IT data usage and purchase limit selection. Depending on the type of the question and collected data, each variable was individually analyzed. The collected information is exploratory in nature and aims to shed light on the current application levels of the issues included under the questionnaire.

1.2. Data and Sampling

As of May 2018, there are a total of 514 companies in BIST, but there are 300 companies that are subject to indexation. 80 of them are in the financial endowment and financial and insurance companies are examined and supervised according to their own legislation on risk management. The remaining 220 real sector companies include industry, telecommunication and service sectors. If we eliminate the multiple share type among them, the remaining number of

the sample becomes 207. The final version of the sample consisted of the risk managers from public firms and had an observation size of 59. The overall response rate was 29%. The sample of firms consists of the highest industrialized companies in Turkey and 20 respondents are included under ISO 500 top 100 by 2017. The response obtained represents 60,3% of the total assets of the sample. The final version of the survey was sent to the full list of publicly available firms on BIST. The survey was prepared and sent to the respondents online via Survey Monkey. The descriptive statistics regarding the sample is presented below. The survey was conducted on 59 (N). “Risk Managers” across a period of 12 weeks. Respondents were identified employing use of the snowballing sample collection technique and the survey was sent over Survey Monkey. The evidence from this pie chart shows that 76.27% (45). of the 59 Risk Managers were Male, while 23.73% (14). were female. FERMA survey conducted in European companies, shows very similar result (27% female). In Turkey, women older than 25 participation in the workforce increased from 23,4% to 34.2 % in the recent 10 years according to the report “Women in Statistics” of Turkish Statistical Institute (2018).

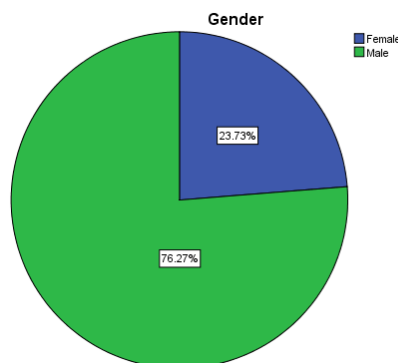


Figure 32 Total Population

Furthermore, the participation shifted more towards to the service sector rather than agriculture for the same period. Therefore, we may expect also an increase in the women risk responsible percentage in the future at this trend (TUIK, 2018).

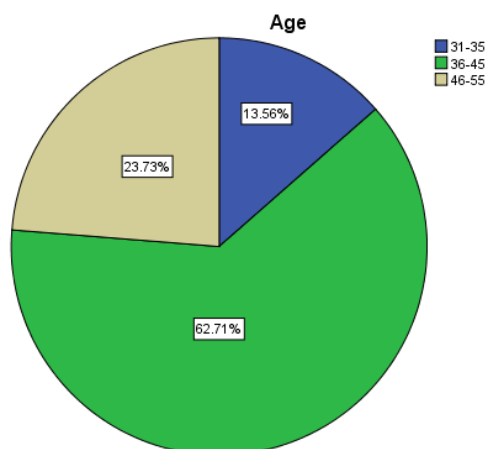


Figure 33 Age

A large percentage (62.71%). of the respondents were aged between 36 to 45, while 23.73% and 13.56% of the Risk Managers were aged between 46 to 55 and 31 to 35, respectively.

Table 3: Age and Gender Crosstabulation

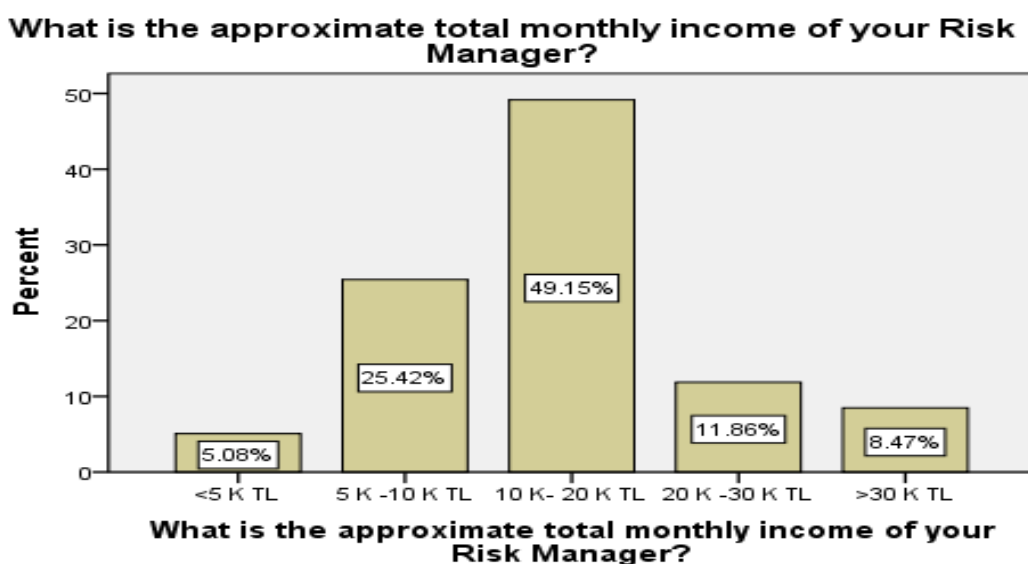
			Age			Total
			31-35	36-45	46-55	
Gender	Female	Count	1	10	3	14
		% within Gender	7.1%	71.4%	21.4%	100.0%
		% within Age	12.5%	27.0%	21.4%	23.7%
	Male	Count	7	27	11	45
		% within Gender	15.6%	60.0%	24.4%	100.0%
		% within Age	87.5%	73.0%	78.6%	76.3%
Total	Count	8	37	14	59	
	% within Gender	13.6%	62.7%	23.7%	100.0%	
	% within Age	100.0%	100.0%	100.0%	100.0%	

A crosstabulation of the gender and age variables indicates that an overwhelming percentage (73%). of the 36-45 age group are male (27)., while only 27% of the 36-45 age group are female.

2. Analysis and Findings

As stated above the survey was conducted in order to shed light on the current Turkish applications of risk management in comparison to the international platform. Thus, the following section is analyzed as follows, each individual question is statistically analyzed depending on the type of data employed. The statistical methods are as follows; high-low frequency analysis, percentage and cross-tabulation and general frequency analysis. Moreover, related questions were combined and analyzed together via cross-tabulation. Each question, their analysis and its contribution to analyzing the hypothesis is shown as bellow.

Table 4: What is the approximate total monthly income of your Risk Manager? *



Out of the 59 respondents, nearly 75% earn between 5 to 20 thousand TL a month (5 to 10 thousand TL and 10 to 20 thousand TL at 25.42% and 49.15%, respectively). While 8.47% of respondents earn over 30 thousand TL a month.

Table 5: Gender * What is the approximate total monthly income of your Risk Manager? Crosstabulation

			What is the approximate total monthly income of your Risk Manager?					Total
			<5 K TL	5 K -10 K TL	10 K- 20 K TL	20 K -30 K TL	>30 K TL	
Gender	Female	Count	1	5	6	1	1	14
		% within Gender	7.1%	35.7%	42.9%	7.1%	7.1%	100.0%
		% within What is the approximate total monthly income of your Risk Manager?	33.3%	33.3%	20.7%	14.3%	20.0%	23.7%
	Male	Count	2	10	23	6	4	45
		% within Gender	4.4%	22.2%	51.1%	13.3%	8.9%	100.0%
		% within What is the approximate total monthly income of your Risk Manager?	66.7%	66.7%	79.3%	85.7%	80.0%	76.3%
Total	Count	3	15	29	7	5	59	
	% within Gender	5.1%	25.4%	49.2%	11.9%	8.5%	100.0%	
	% within What is the approximate total monthly income of your Risk Manager?	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

The gender and monthly cross tabulation table shows that 51.1% of male respondents earn between 10 -20 thousand TL, while only 42.9% of female respondents earn the same amount. Contrarily, 35.7% of females earn between 5 -10 thousand TL, while only 22.2% of male respondents earn the same amount. This table is indicative that male risk managers tend to earn higher amounts from female risk managers for doing the same job.

Table 6: Age * What is the approximate total monthly income of your Risk Manager? Crosstabulation

			What is the approximate total monthly income of your Risk Manager?					Total
			<5 K TL	5 K -10 K TL	10 K- 20 K TL	20 K -30 K TL	>30 K TL	
Age	31-35	Count	0	5	3	0	0	8
		% within Age	0.0%	62.5%	37.5%	0.0%	0.0%	100.0%
		% within What is the approximate total monthly income of your Risk Manager?	0.0%	33.3%	10.3%	0.0%	0.0%	13.6%
	36-45	Count	3	5	22	5	2	37
		% within Age	8.1%	13.5%	59.5%	13.5%	5.4%	100.0%
		% within What is the approximate total monthly income of your Risk Manager?	100.0%	33.3%	75.9%	71.4%	40.0%	62.7%
	46-55	Count	0	5	4	2	3	14
		% within Age	0.0%	35.7%	28.6%	14.3%	21.4%	100.0%
		% within What is the approximate total monthly income of your Risk Manager?	0.0%	33.3%	13.8%	28.6%	60.0%	23.7%
Total	Count	3	15	29	7	5	59	
	% within Age	5.1%	25.4%	49.2%	11.9%	8.5%	100.0%	
	% within What is the approximate total monthly income of your Risk Manager?	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

The age and monthly income cross tabulation shows that counter intuitively, younger (31-35). risk managers (62.5%). and older (46-55). risk managers (35.7%). earn the same amount (5 K -10 K TL)., rather the monthly salary increasing with age/seniority. However, when compared with the 31-35 age group, the monthly salary of the 36-45 age group of risk managers overwhelmingly (59.5%). earns between 10 K- 20 K TL.

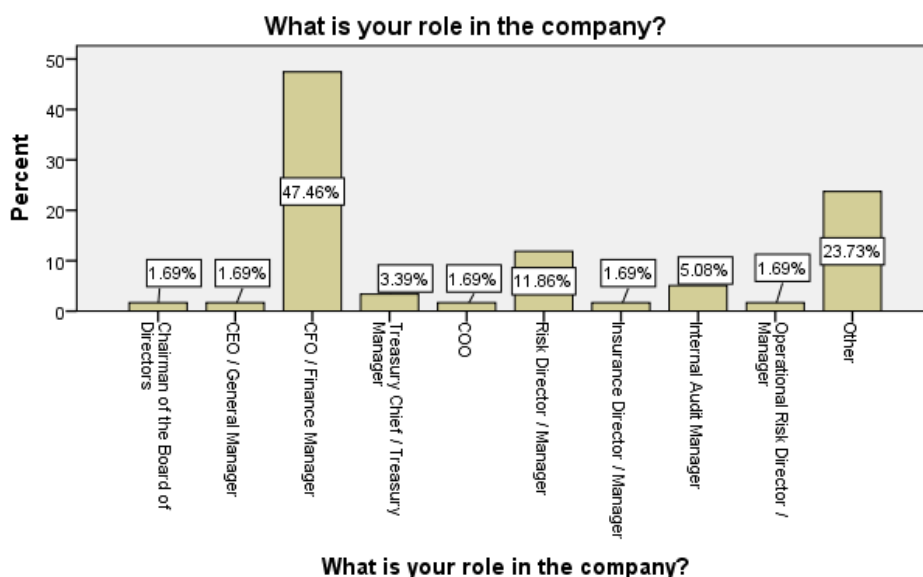


Figure 34 What is your role in the company?

This bar chart indicates that 47.46% of the respondents are employed as CFO/Finance Managers. The second and third highest group of respondents are other and Risk Director/Managers (23.73% and 11.86%).

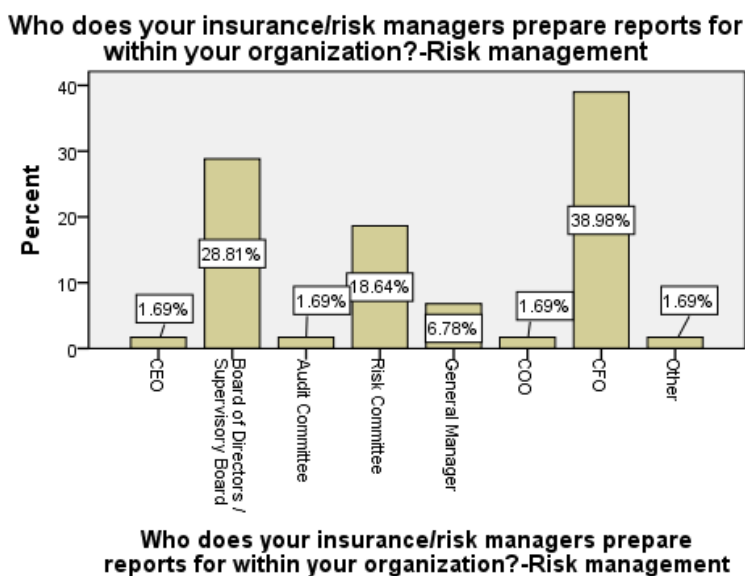
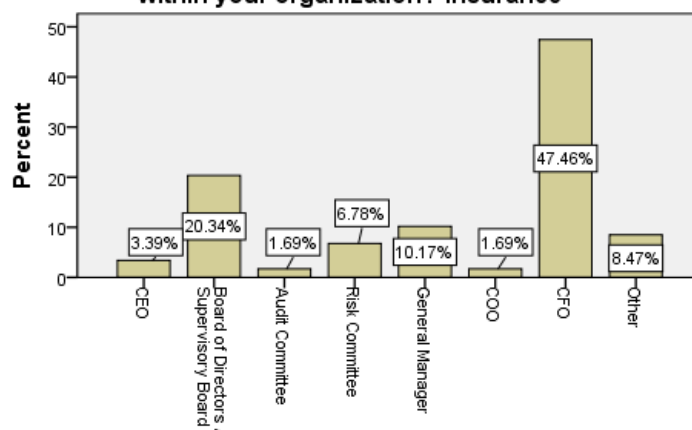


Figure 35 Who does your insurance / risk managers report to within your organization?

Risk managers have increasing access to top decision makers. 38.98% of respondents are preparing reports for CFO's, 28.81% prepare reports for the Board of Directors/Supervisory Boards and 18.64% report to the risk committee.

Who does your insurance/risk managers prepare reports for within your organization?-Insurance



Who does your insurance/risk managers prepare reports for within your organization?-Insurance

Figure 36 Who does your insurance / risk managers report to within your organization? (2).

Similar to the risk managers, Insurance managers prepare reports for CFO's (47.46%), Board of Directors/Supervisory Boards (20.34%). and the General Managers (10.17%). It's not surprising for understanding the recent of CFO's that in a global survey of close to 1,500 C-suite executives conducted in the summer of 2011 by Harvard Business Review Analytic Services, more than two-thirds of respondents said that risk management had become somewhat or significantly more important over the previous three years.

And in a March 2012 survey of finance executives by CFO magazine, 72 percent of respondents said their companies had increased the amount of time and resources devoted to risk management over the previous two years, with 23 percent calling the increase "significant." (Pidun, CFO Excellence, 2017).

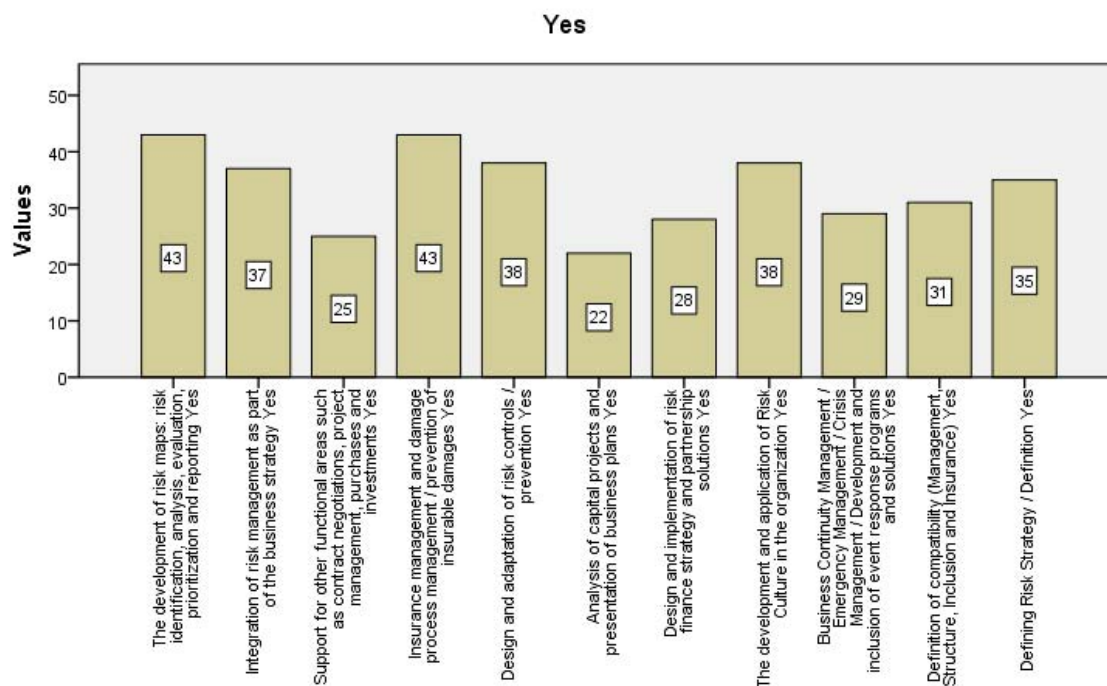


Figure 37 Which of the following tasks in your organization are the responsibility of the Risk Management and Insurance leader?

The highest acknowledged tasks for risk managers are the development of risk maps (43), insurance management and damage process management / prevention of insurable damages (43). While the lowest is analysis of capital projects and presentation of business plans at 22 firms. Most of the tasks listed under the survey are within the responsibilities of the Risk Management and Insurance leader.

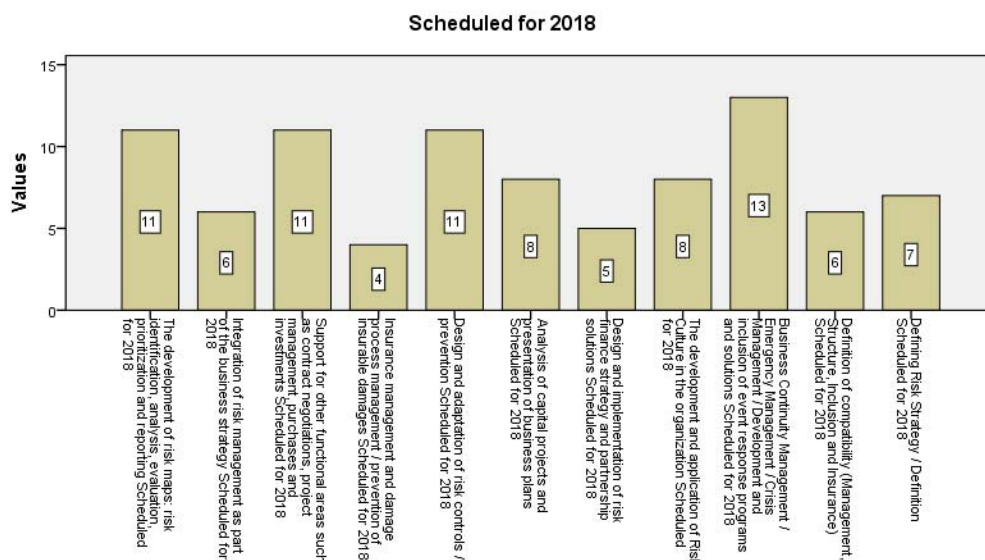


Figure 38 Schedule

The highest task scheduled for inclusion under the responsibilities of the Risk Management and Insurance leader for 2018 is business continuity management / emergency management / crisis management / development and inclusion of event response programs and solutions (13).

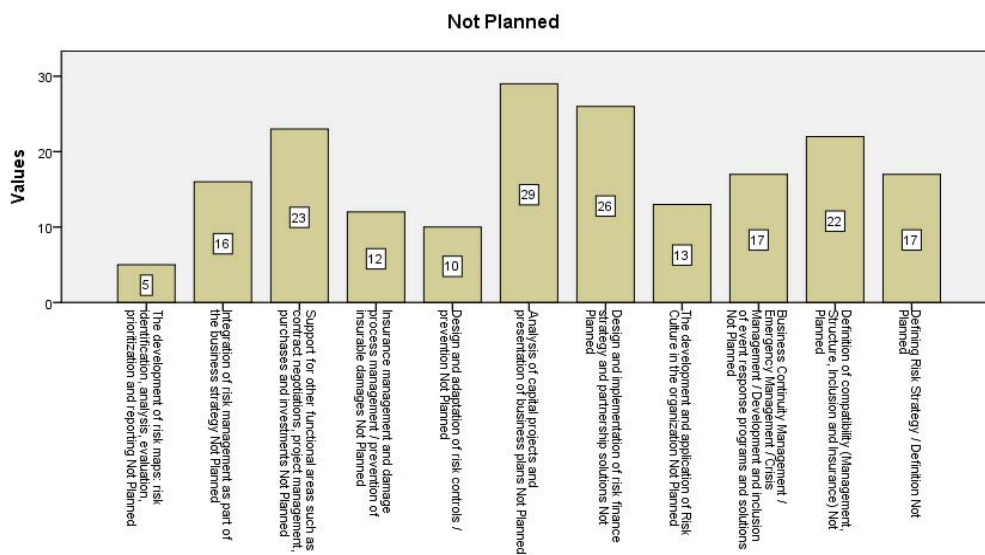


Figure 39 Planned

When tasks for Risk Management and Insurance leader are reviewed we see that analysis of capital projects and presentation of business plans (29)., design and implementation of risk finance strategy and partnership solutions (26). and support for other functional areas such as contract negotiations, project management, purchases and investments (23). are currently not planned.

When we review each individual task between “Not Planned”, “Scheduled for 2018” and “Yes” we generate the following tables: A review of the 11 tasks shows that 49.15% of respondents have not planned to implement an analysis of capital projects and presentation of business plans, while only 37.29% have implemented it and the remainder 13.56% have scheduled for 2018.

When asked about the Risk Culture 65% of respondent responded that they had an active participation. %13 of the respondents support that they will be taking part in the activities by the end of 2018.

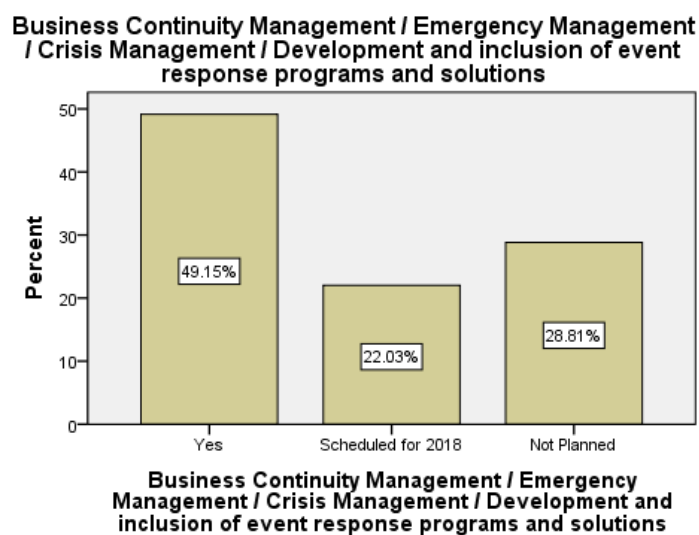
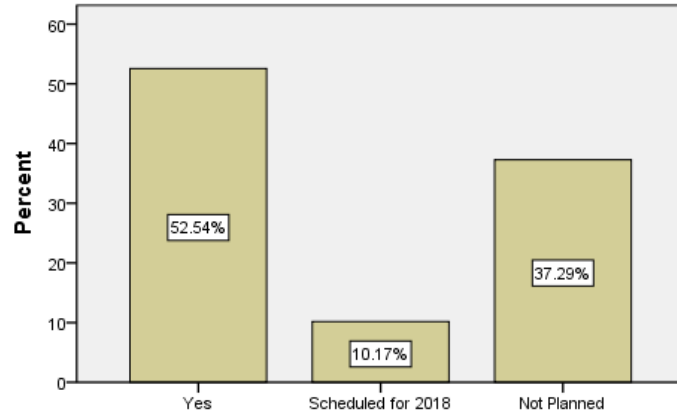


Figure 40 Business Continuity

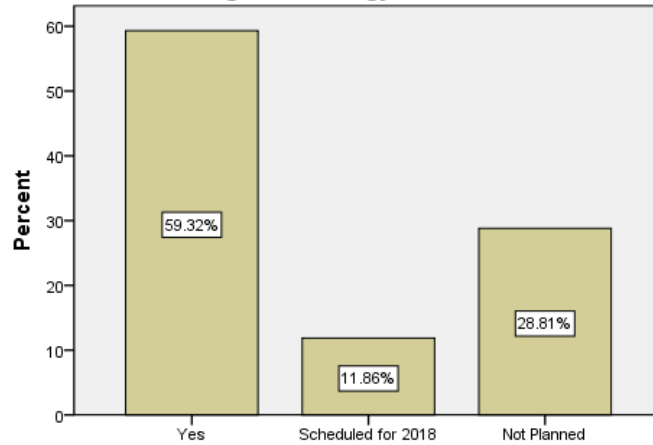
Definition of compatibility (Management, Structure, Inclusion and Insurance)



Definition of compatibility (Management, Structure, Inclusion and Insurance)

Figure 41 Business Comparability

Defining Risk Strategy / Definition



Defining Risk Strategy / Definition

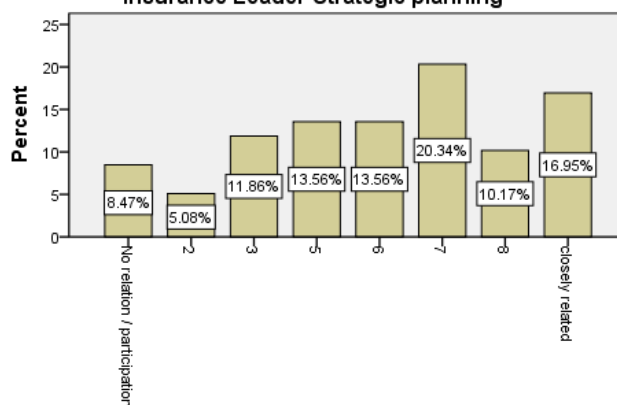
Figure 42 Risk Strategy



Figure 43 How does your organization interact with Risk Leaders, the Board of Directors and / or Senior Management?

The method in which most respondent organizations interact with Risk Leaders, the Board of Directors and / or Senior Management is through the Early Detection Committee of Risk (44%), official presentations to the Board of Directors and Senior Management several times a year (27.12%), and by meeting with the Board and / or Senior Management members as requested (16.95%).

Specify the relationship level of your organization's Risk / Insurance Leader-Strategic planning



Specify the relationship level of your organization's ...

Figure 44 Indicate the relationship level of your organization's Risk/Insurance Leader

50.80% of respondents state that risk/insurance leaders are closely related (6 to 9). to strategic planning.

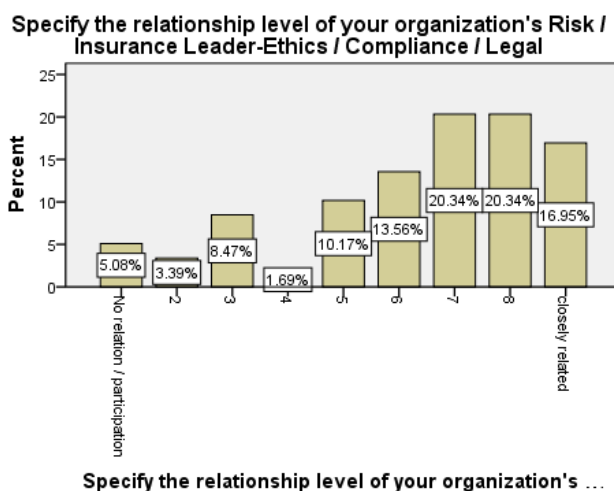


Figure 45 Indicate the relationship level of your organization's Risk/Insurance Leader (2).

71.19% of respondents state that risk/insurance leaders are closely related (6 to 9). with Ethics/Compliance/Legal functions.

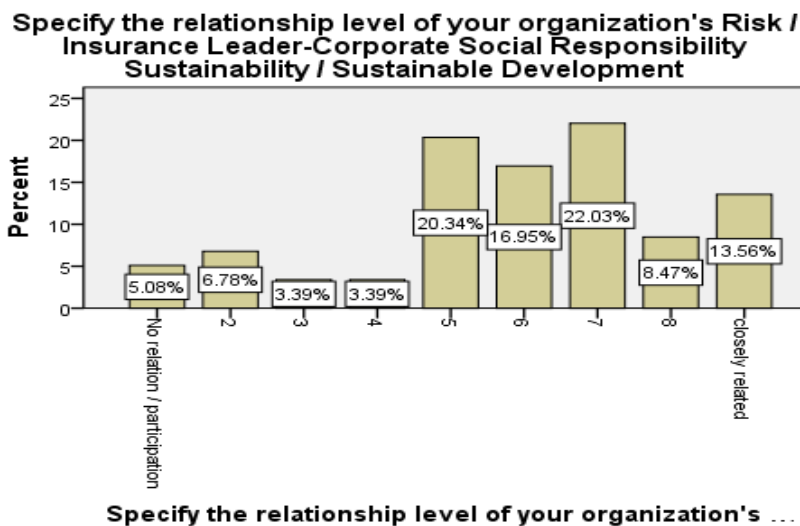
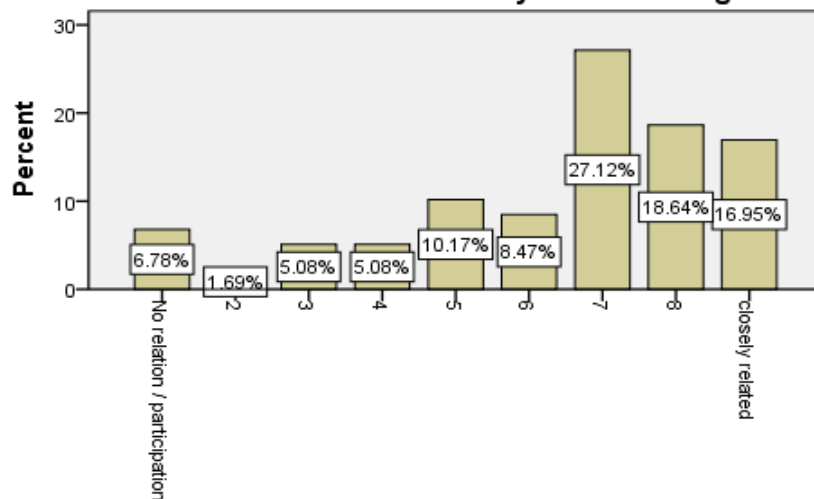


Figure 46 Relation Level

61.01% of respondents state that risk/insurance leaders are closely related (6 to 9). to sustainable development.

Specify the relationship level of your organization's Risk / Insurance Leader-Business Continuity / Crisis Management

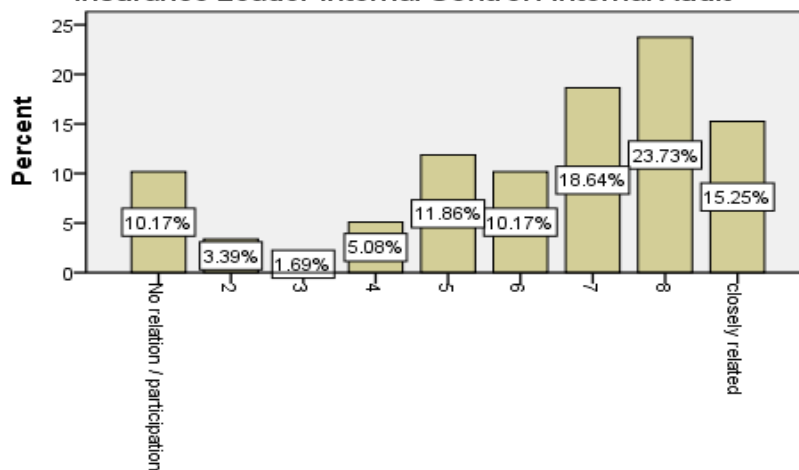


Specify the relationship level of your organization's ...

Figure 47 Relation Level (2).

71.18% of respondents state that risk/insurance leaders are closely related (6 to 9). to business continuity and crisis management functions.

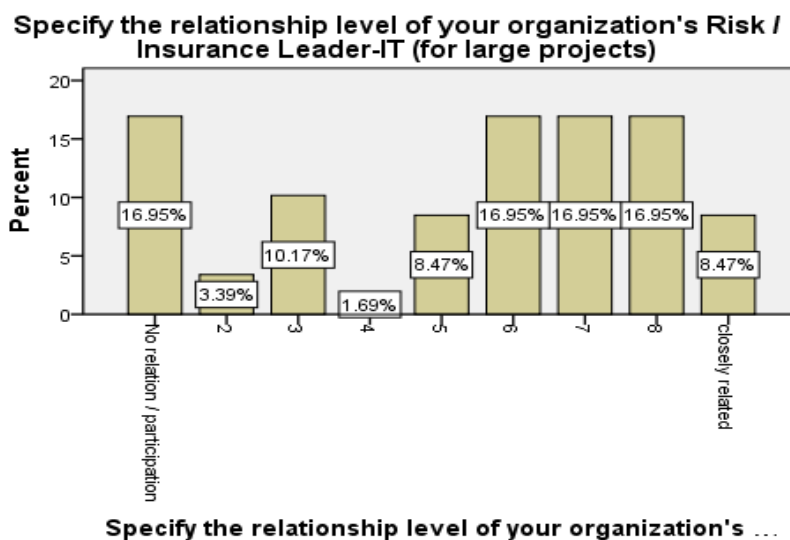
Specify the relationship level of your organization's Risk / Insurance Leader-Internal Control / Internal Audit



Specify the relationship level of your organization's ...

Figure 48 Relation Level (3).

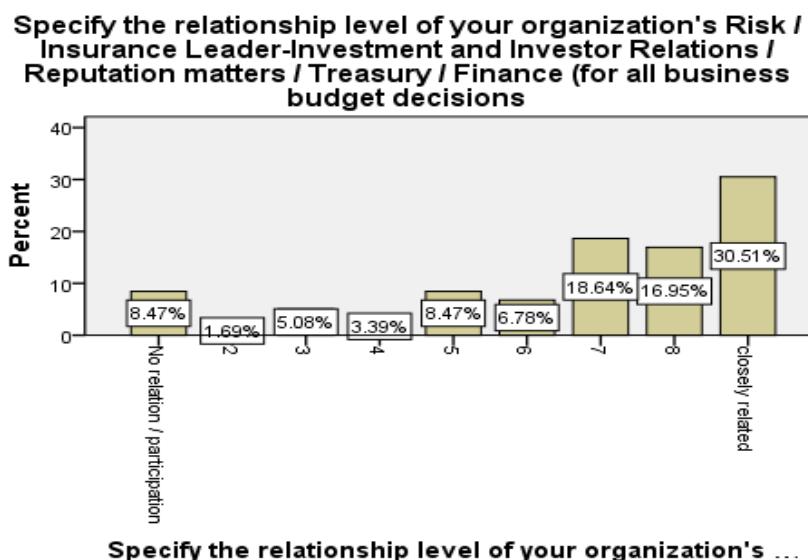
67.79% of respondents state that risk/insurance leaders are closely related (6 to 9). internal control and internal audit functions.



Specify the relationship level of your organization's ...

Figure 49 Relation Level (4).

59.32% of respondents state that risk/insurance leaders are closely related (6 to 9). IT for large projects. 16,95% of them are not interacting at all with this matter, relatively higher versus the other activities.



Specify the relationship level of your organization's ...

Figure 50 Relation Level (5).

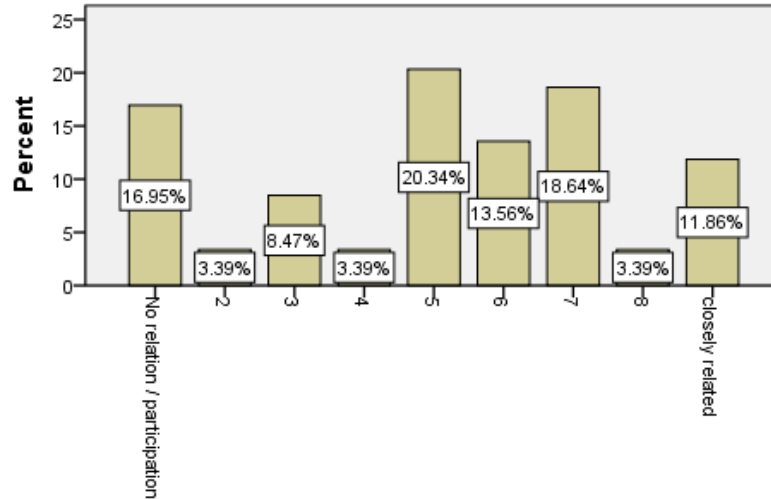
72.88% of respondents state that risk/insurance leaders are closely related (6 to 9). Investor Relations and Investment/Reputation matters/Treasury/Finance functions.



Figure 51 Relation Level (6).

55.93% of respondents state that risk/insurance leaders are closely related (6 to 9). mergers and acquisitions/transfer decision functions.

Specify the relationship level of your organization's Risk / Insurance Leader-Resource usage / Procurement

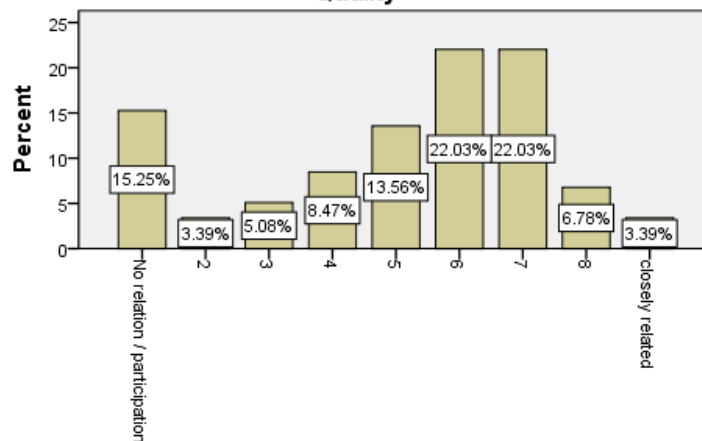


Specify the relationship level of your organization's ...

Figure 52 Relation Level (7).

47.45% of respondents state that risk/insurance leaders are closely related (6 to 9). resource usage/procurement functions.

Specify the relationship level of your organization's Risk / Insurance Leader-Production / Logistics / Distribution / Quality



Specify the relationship level of your organization's ...

Figure 53 Relation Level (8).

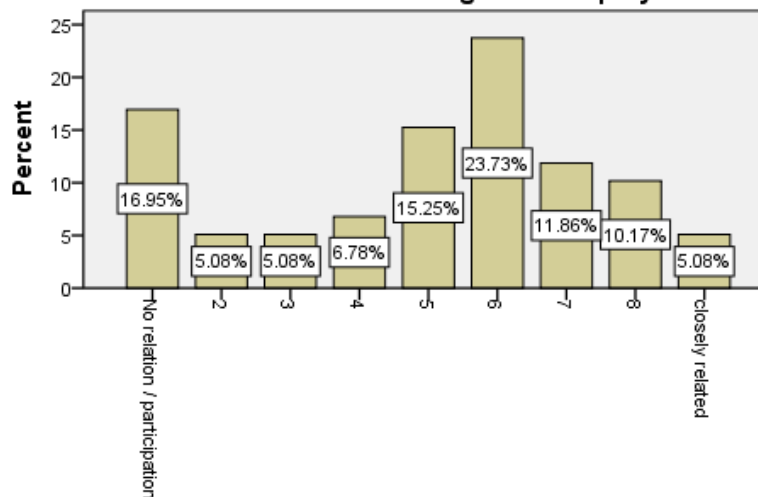
54.23% of respondents state that risk/insurance leaders are closely related (6 to 9). production/logistics/distribution/quality functions.



Figure 54 Relation Level (9).

74.54% of respondents state that risk/insurance leaders are closely related (6 to 9). insurance management.

Specify the relationship level of your organization's Risk / Insurance Leader-IK- Social Rights of Employees



Specify the relationship level of your organization's ...

Figure 55 Relation Level (10).

50.84% of respondents state that risk/insurance leaders are closely related (6 to 9). social rights of employees.

Insurance, Finance, ethics/compliance and business continuity/crisis management functions are very close partners. Meanwhile, the relations with IT, Human Resources and Procurement may be improved if necessary.

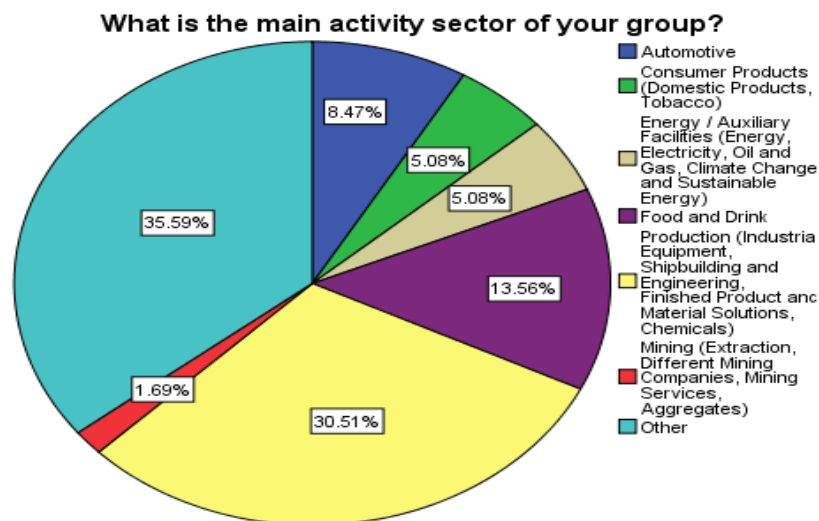


Figure 56 What is the main activity sector of your group?

The top sectors within the respondent firms are the Production (Industrial Equipment, Shipbuilding and Engineering, Finished Product and Material Solutions, Chemicals). sector at 30.51%, Food and Drink at 13.56% and Automotive at 8.47%. Additionally, 35.59% of respondents stated they were from “Other” sectors.

*

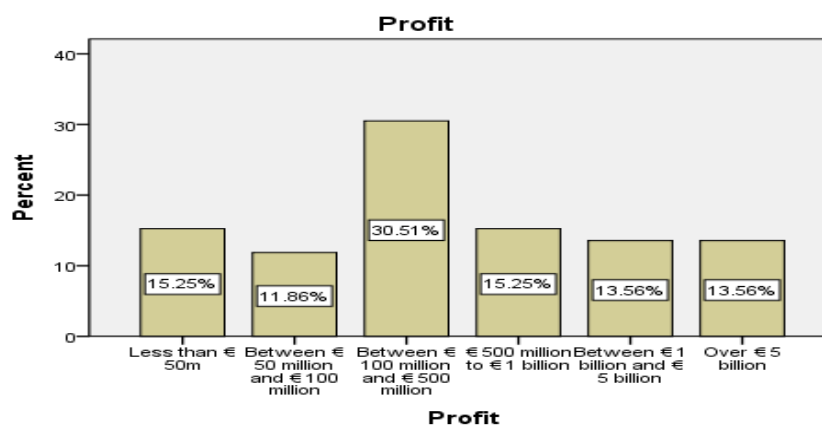


Figure 57 Profit

13,56% of respondents work for companies exceeding 5 billion TL. Only 15,25% of the companies participated in the survey has the net sales less than 50 million TL.



Figure 58 Total number of employees in your organization

35.59% of respondents work for companies with employees between 1001-5000 employees. 8,47% of them has an organization exceeding 20000 employees.

Under the organizational forms we see that 33.90% of respondents state internal audit works separately than the risk, insurance and finance functions, 22.03% state that all functions (risk, insurance, finance and internal audit). work separately. On the other hand, 20.34% of respondents argue that all functions work in one partition.

To what degree does your organization put your risks in priority order by mapping them?

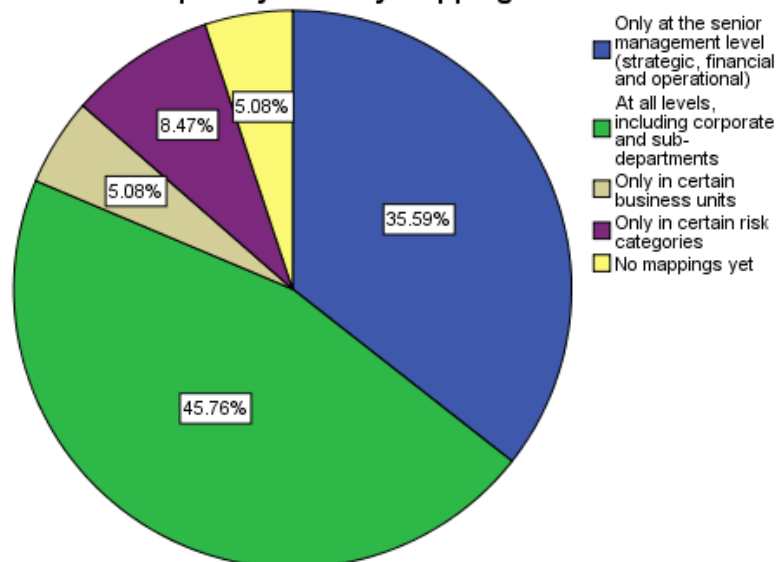


Figure 59 To what degree does your organization put your risks in priority order by mapping them?

An overwhelming 45.76% of respondents state that their firms put risks in priority order by mapping them at all levels including corporate and sub departments, while 35.59% of respondents map risk only at the senior management level (strategic, financial and operational).

Do you have any risk committees other than Riskin Early Detection?

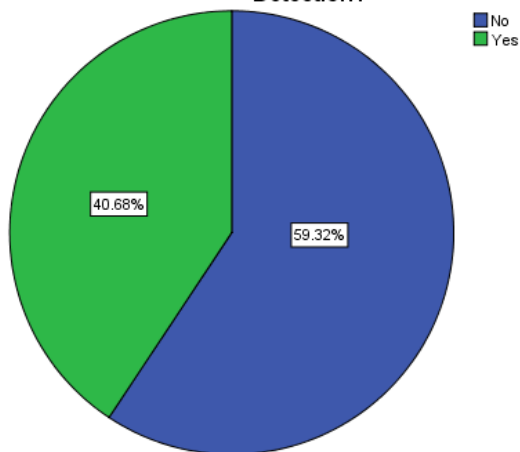


Figure 60 Do you have any risk committees other than Risk Early Detection?

The evidence from this pie chart shows that 40.68% of the 59 respondents have risk committees other than Risk Early Detection, while 59.32% do not.

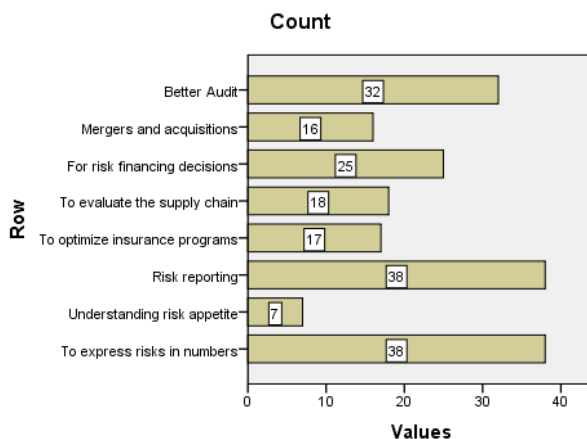


Figure 61 Where are the data from the Information System used?

The data gained from the information system is employed in order to prepare the risk reports (38 respondents), to express risk in numbers (38), and to conduct a better audit (32).

Is there a separate module / tool / software for risk management in your Information System (ERP)?

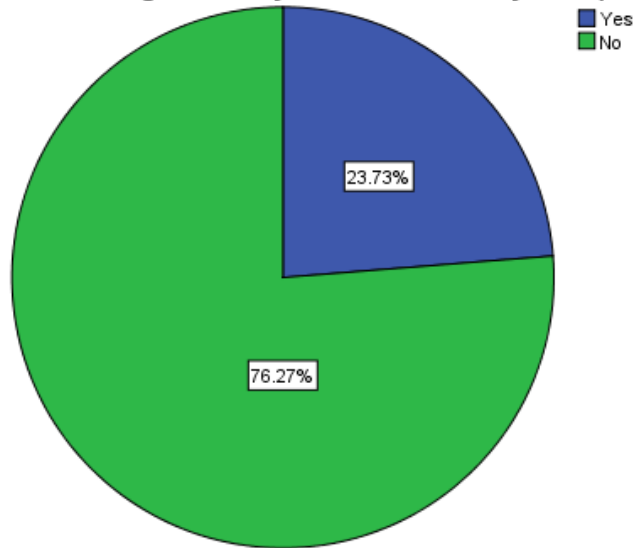


Figure 62 Is there a separate module / tool / software for risk management in your Information System (ERP).?

The chart indicates that only 23.73% of respondents have a separate module / tool / software for risk management within their Information System.

Does your organization use Captive (your own insurance company)?

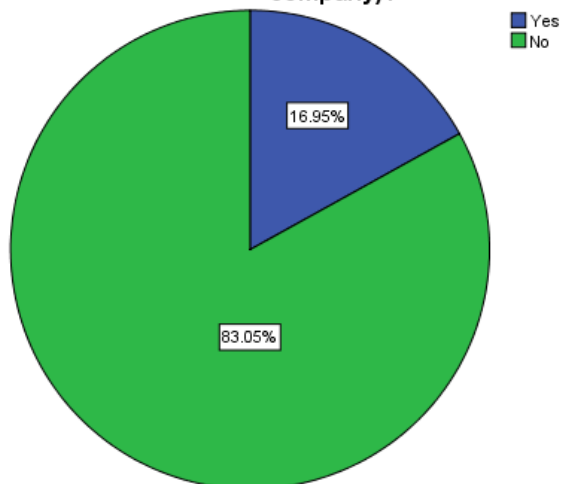
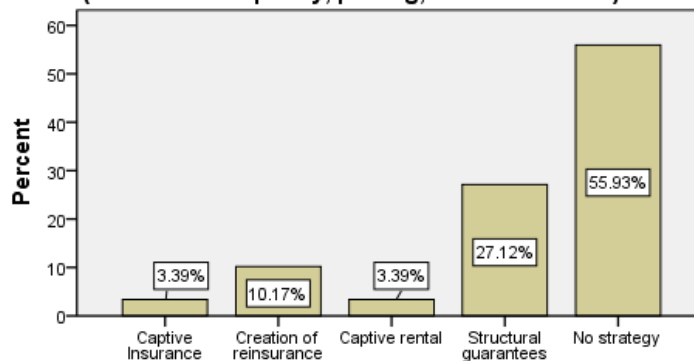


Figure 63 Does your organization use Captive (your own insurance company).?

Only 16.95% of respondents employ use of Captive. There may be a misinterpretation of captive insurance by respondents because there is not officially a captive insurance company in Turkey.

Surely, this confusion may have come to them, because some Group Companies may also insure, however, they are not found internally as captive.

What is your strategy in relation to the risks that are difficult to put on the insurance market over the next 2 years? (Insufficient capacity, pricing, or other factors)



What is your strategy in relation to the risks that are difficult to put on the insurance market over the next 2 years? (Insufficient capacity, pricing, or other factors)

Figure 64 What is your strategy in relation to the risks that are difficult to put on the insurance market over the next 2 years?

An overwhelming percentage of respondents do not have a strategy (55.93%) to put on the insurance market over the next 2 years, while 27.12% are planning to implement structural guarantees (27.12%), and creation of reinsurance (10.17%).

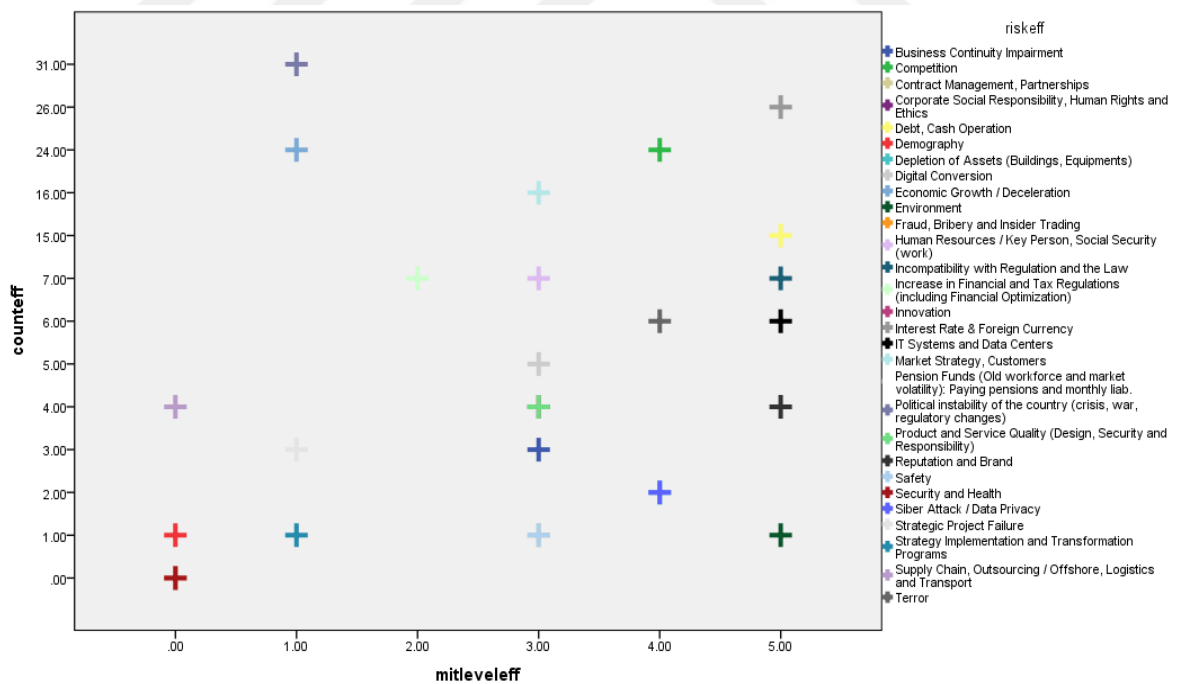
1. What are the five biggest risks that threaten your organization's strategic success? *
2. Indicate the current mitigating levels of the 3 most important risk areas you identified above? *

Effectiveness: The risks that respondents think threaten their organization's strategic success is provided below. Out of 59 of the respondents 31 think that political instability of the country (crisis, war, regulatory changes). will threaten their business. Moreover, respondent think that interest rate & foreign currency (26)., competition (24)., economic growth / deceleration (24). and market strategy, customers (16). can also threaten the business

Risk Effectiveness	Count	Mitigation Level			Mitigation Level	Mitigation Level Code	Mitigation Strategy			Satisfaction Level			Satisfaction Level	Satisfaction Level Code
		Low	Middle	High			Decrease	Transfer	Acceptance	Low	Middle	High		
Political instability of the country (crisis, war, regulatory changes)	31	9	7	6	Low	1	5	2	13	6	4	4	Low	1
Economic Growth / Deceleration	24	9	7	4	Low	1	3	2	12	4	7	2	Middle	3
Competition	24	4	6	6	Middle-High	4	10	1	4	1	6	4	Middle	3
Market Strategy, Customers	16	1	7	5	Middle	3	9	1	2	1	2	2	Middle-High	4
Innovation	4	0	1	0	Middle	3	1	0	0	0	0	0	0	0
Digital Conversion	5	0	2	1	Middle	3	3	0	0	0	1	0	Middle	3
Demography	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Strategy Implementation and Transformation Programs	1	1	0	0	Low	1	0	1	0	0	1	0	Middle	3
Reputation and Brand	4	0	1	2	High	5	2	0	0	0	0	1	High	5
Strategic Project Failure	3	2	0	1	Low	1	2	0	1	1	1	1	Inconclusive	0
Terror	6	1	2	2	Middle-High	4	3	0	2	1	2	0	Middle	3
Interest Rate & Foreign Currency	26	3	5	12	High	5	10	6	1	2	7	3	Middle	3
Debt, Cash Operation	15	4	2	5	High	5	8	0	2	3	2	0	Low	1
Increase in Financial and Tax Regulations (including Financial Optimization)	7	2	2	1	Low-Middle	2	2	1	2	3	1	0	Low	1
Pension Funds (Old workforce and market volatility): Paying pensions and monthly liab.	0	0	0	0	0	0	0	0	0	0	0	0	Inconclusive	0
Depletion of Assets (Buildings, Equipments)	2	0	1	1	Middle-High	4	0	1	0	0	0	1	High	5
Business Continuity Impairment	3	1	2	0	Middle	3	3	0	0	0	0	0	0	0
Product and Service Quality (Design, Security and Responsibility)	4	0	2	1	Middle	3	1	1	1	0	0	0	0	0
Human Resources / Key Person, Social Security (work)	7	1	5	0	Middle	3	3	0	2	1	1	1	Inconclusive	0
IT Systems and Data Centers	6	1	2	3	High	5	5	0	1	0	3	2	Middle	3
Siber Attack / Data Privacy	2	0	1	1	Middle-High	4	1	1	0	0	1	0	Middle	3
Security and Health Safety	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Supply Chain, Outsourcing / Offshore, Logistics and Transport	1	0	1	0	Middle	3	0	0	1	0	0	1	High	5
Contract Management, Partnerships	4	1	1	1	Inconclusive	0	3	0	0	0	0	2	High	5
Corporate Social Responsibility, Human Rights and Ethics	1	0	1	0	Middle	3	1	0	0	0	0	1	High	5
Fraud, Bribery and Insider Trading	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incompatibility with Regulation and the Law Environment	7	0	2	3	High	5	4	0	1	0	2	2	Middle-High	4
	1	0	0	1	High	5	1	0	0	1	0	0	Low	1

The survey also shows that the acceptance strategy is applied to the Political instability of the country (crisis, war, regulatory changes), while transfer is applied to Strategy Implementation and Transformation Programs and decrease is applied to Competition. Overall satisfaction levels are higher for Reputation and Brand, Supply Chain, Outsourcing / Offshore, Logistics, Depletion of Assets (Buildings, Equipments), and Transport and Contract Management, Partnerships. Meanwhile, interest rate, debt cash operations are at the highest level of interest for the respondents. They mitigate it at high levels but the satisfaction is low or medium.

Surprisingly, nobody puts health and safety as among the top risks. Nevertheless, the mitigation for it is maximum level. Many companies put it also at their very first priorities at their statements but they are not considered among the tops by the risk responsables. Maybe, because it's more on the focus of health and safety managers than risk responsables who are monitoring, following and mitigating the risks directly, although this involves to all the dependents in the company.



0=N/A or Inconclusive
1=Low

2=Low-Medium
3=Medium

4=Medium-High
5=High

Figure 65 Crosstabulation (2).

According to the risk map presented above we see that Political instability of the country (crisis, war, regulatory changes). (has respondent count of 31). is one of the highest risk types identified by respondents and has a low-medium mitigation level.

The few ones they put Innovation, Depletion of Assets (Buildings, Equipments), Human Resources / Key Person, Social Security (work), IT Systems and Data Centers, Siber Attack / Data Privacy, Safety risks at low probability, mitigate them at high levels. Meanwhile, Many considers market strategy risk highly probable, mitigates also it equally.

Table 7: Probability

Risk-Probability	Count	Mitigation Level			Mitigation Level	Mitigation Level Code	Mitigation Strategy			Satisfaction Level			Satisfaction Level	Satisfaction Level Code
		Low	Middle	High			Decrease	Transfer	Acceptance	Low	Middle	High		
Political instability of the country (crisis, war, regulatory changes).	27	7	5	5	Low	1	7	2	7	5	4	2	Low	1
Economic Growth / Deceleration	19	7	3	3	Low	1	3	1	7	2	6	1	Middle	3
Competition	24	5	5	5	Inconclusive	0	7	2	6	3	3	5	High	5
Market Strategy, Customers	20	2	5	6	High	5	6	1	5	2	3	2	Middle	3
Innovation	4	0	1	2	High	5	2	0	0	0	0	0	0	0
Digital Conversion	5	1	2	2	Medium-High	4	3	1	1	0	3	1	Middle	3
Demography	3	0	1	0	Medium	3	1	0	0	0	0	1	High	5
Strategy Implementation and Transformation Programs	4	0	1	1	Medium-High	4	1	1	0	0	1	0	Middle	3
Reputation and Brand	4	0	2	1	Medium	3	1	0	1	0	0	0	0	0
Strategic Project Failure	8	3	2	1	Low	1	2	2	2	1	2	1	Middle	3

Terror	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest Rate & Foreign Currency	26	5	6	7	High	5	8	2	6	5	3	3	Low	1
Debt, Cash Operation	11	3	3	3	Inconclusive	0	7	0	0	2	1	0	Low	1
Increase in Financial and Tax Regulations (including Financial Optimization).	8	0	1	3	High	5	1	2	1	2	0	1	Low	1
Pension Funds (Old workforce and market volatility).: Paying pensions and monthly liab.	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Depletion of Assets (Buildings, Equipments).	2	0	0	1	High	5	1	0	0	0	1	0	Middle	3
Business Continuity Impairment	7	2	3	2	Medium	3	4	1	2	0	4	1	Middle	3
Product and Service Quality (Design, Security and Responsibility).	5	1	2	1	Medium	3	4	0	0	0	3	0	Middle	3
Human Resources / Key Person, Social Security (work).	8	2	2	3	High	5	4	0	2	0	1	0	Middle	3
IT Systems and Data Centers	4	1	1	2	High	5	2	1	1	0	1	2	High	5
Siber Attack / Data Privacy	3	0	0	2	High	5	2	0	0	1	0	0	Low	1
Security and Health	1	0	1	0	Medium	3	0	0	0	0	0	0	0	0
Safety	1	0	0	1	High	5	1	0	0	0	1	0	Middle	3

Supply Chain, Outsourcing / Offshore, Logistics and Transport	3	0	2	1	Medium	3	0	0	2	0	1	1	Middle-High	4
Contract Management, Partnerships	3	0	2	1	Medium	3	1	1	1	0	1	1	Middle-High	4
Corporate Social Responsibility, Human Rights and Ethics	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fraud, Bribery and Insider Trading	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Incompatibility with Regulation and the Law	5	0	1	1	Medium-High	4	2	0	0	0	0	2	High	5
Environment	0	0	0	0	0	0	0	0	0	0	0	0	0	0

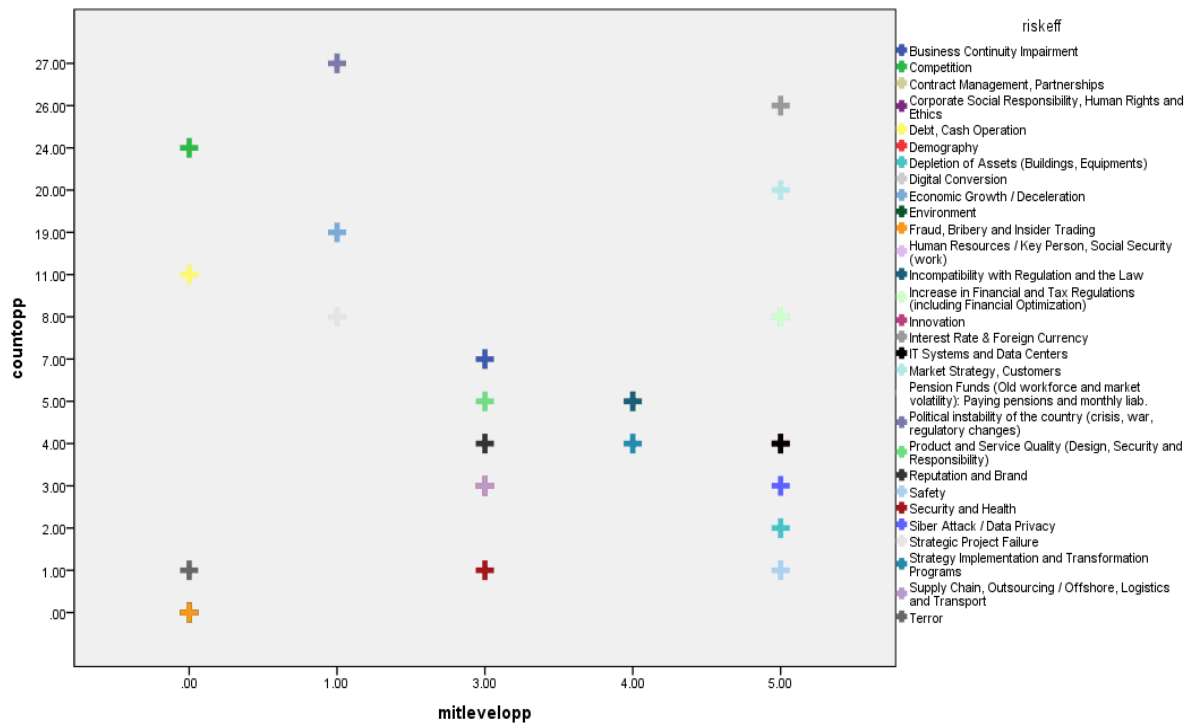


Figure 66 Crosstabulation (3).

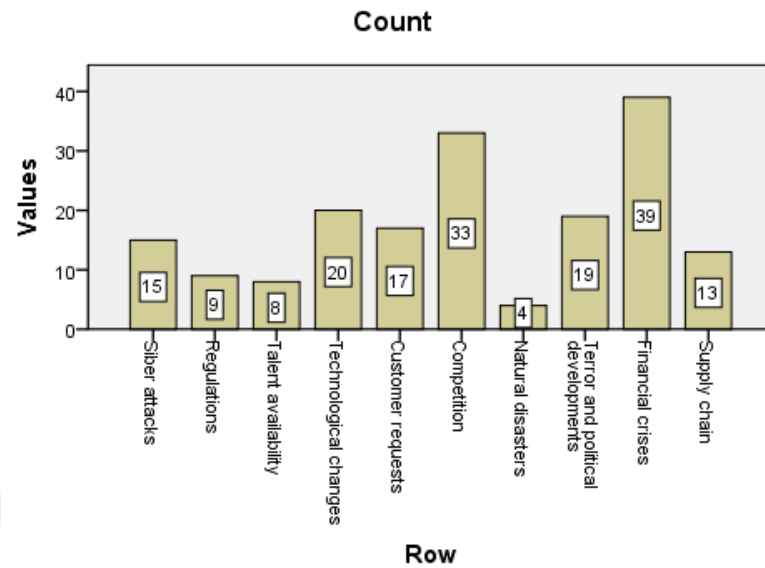


Figure 67 What are the risks you expect to emerge for your organization in the upcoming period?

The firms argue that they expect to face a financial crisis (39), competition (33), technological changes (20), and terror and political developments (19). We may also conclude that cyber attack risks are upcoming (15), and the respondents may consider it among the top risks in the future.

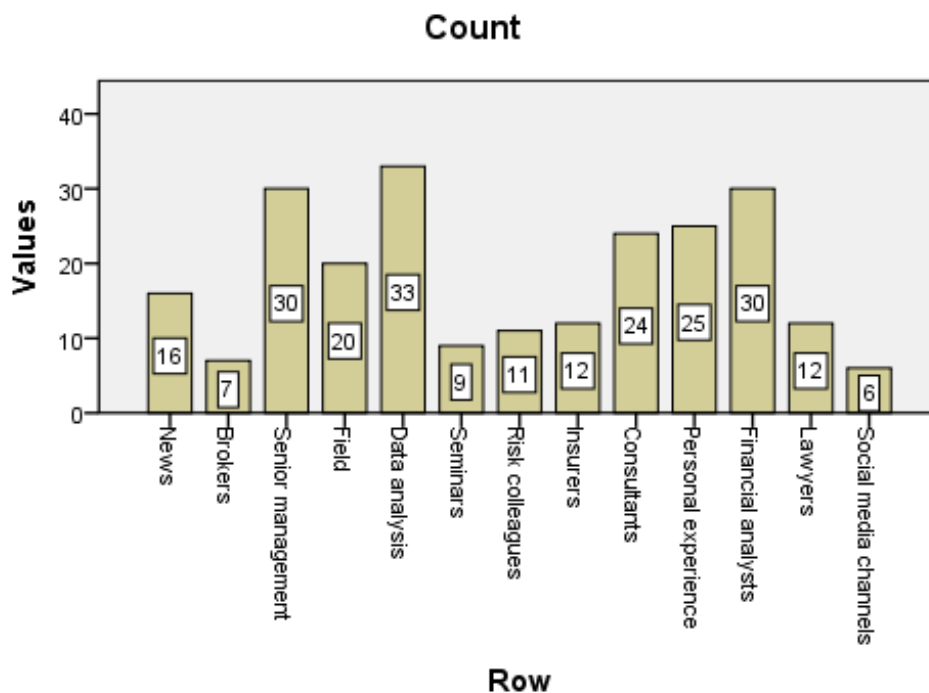


Figure 68 What tools do you use to measure the impact of potential risks?

Firms employ use of a wide variety of tools in order to measure the impact of potential risks; 33 respondents data analysis, 30 use senior management and financial analysis, 25 use personal experience and 24 use consultants.

According to the pie charts generated below firms plan on increasing their measures to combat cyber attacks, technological developments, address customer requests, address competition and the financial crisis. On the other hand, firms will have less tendency to invest in adhering to regulations, talent, natural disasters, terror and political changes and their supply chain.

The relation of risk managers need to be strengthened as a part of enterprise risk management in order to data processing as well. This relationship seemed highly elevated for our respondents.



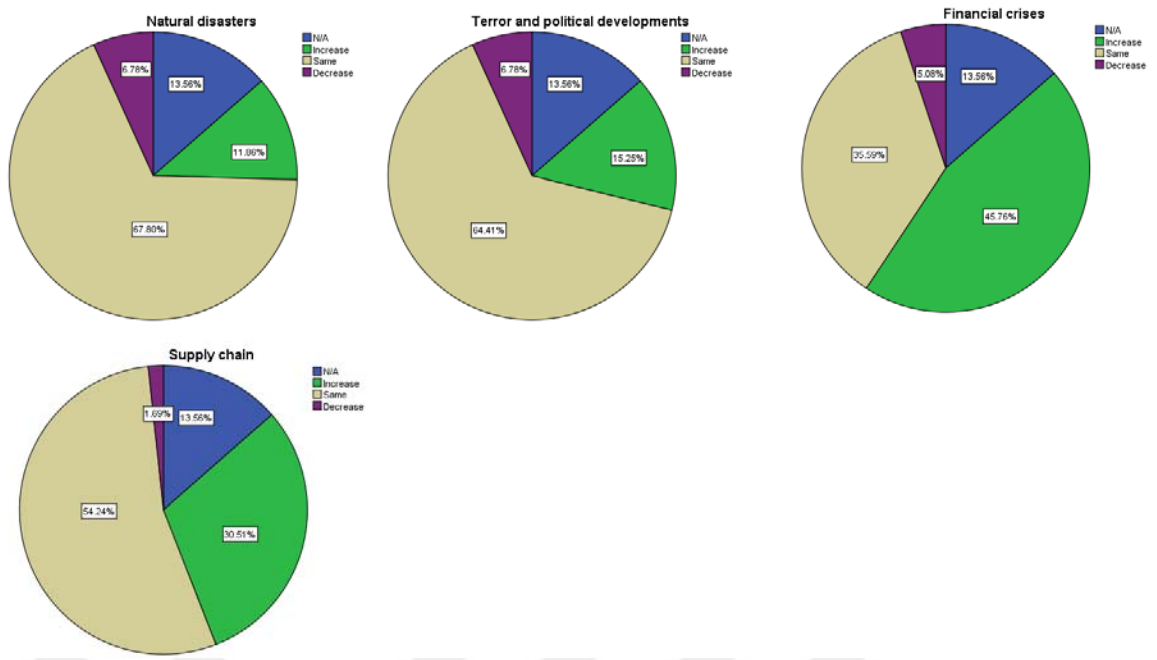


Figure 69 Do you have a formal risk appetite report for Risk Appetite and Risk Tolerance?

Do you have a formal risk appetite report for Risk Appetite and Risk Tolerance?

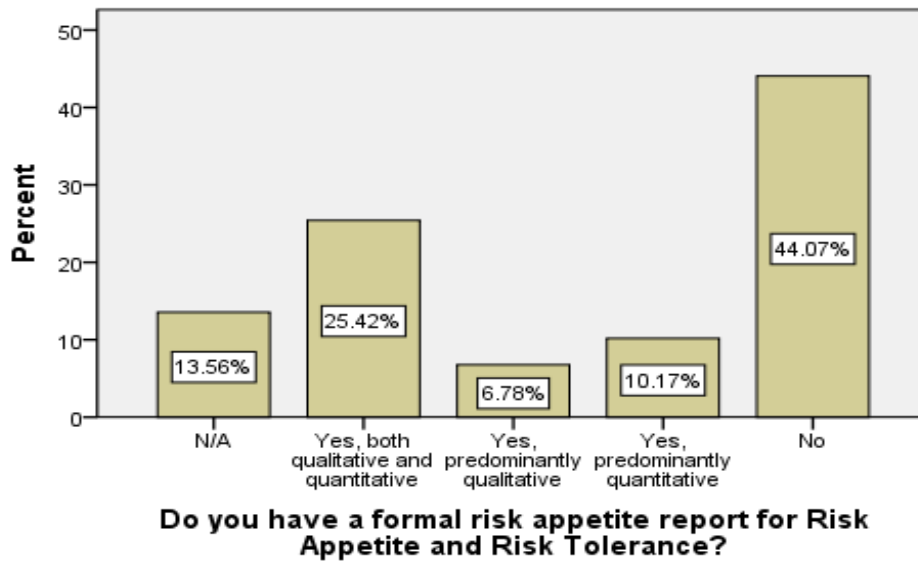


Figure 70 Do you have a formal risk appetite report for Risk Appetite and Risk Tolerance? (2).

More than 44% of respondents do not have a formal risk appetite report for Risk Appetite and Risk Tolerance.

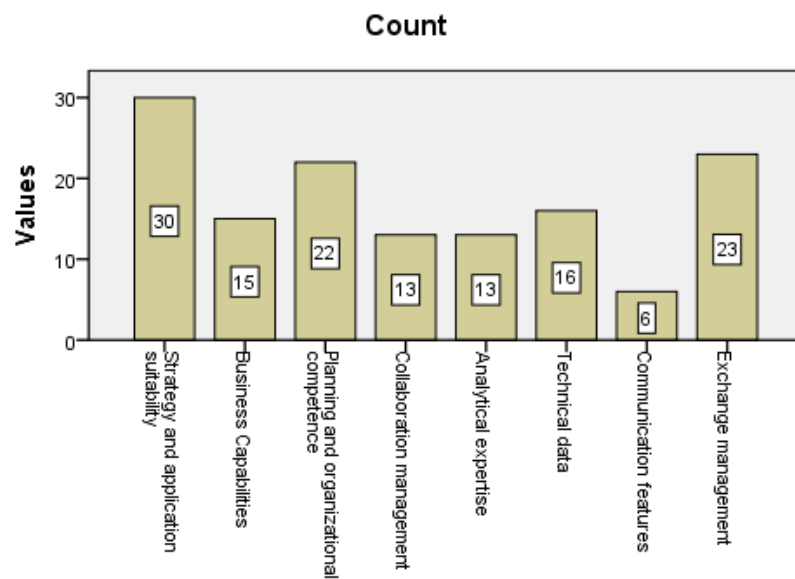


Figure 71 What will be important about risk management for your organization over the next 3-5 years?

Firms state that strategy and execution aptitude (30), communication and presentation skills (23), and planning and organization competence (22), will be important about risk management for the organization over the next 3-5 years.

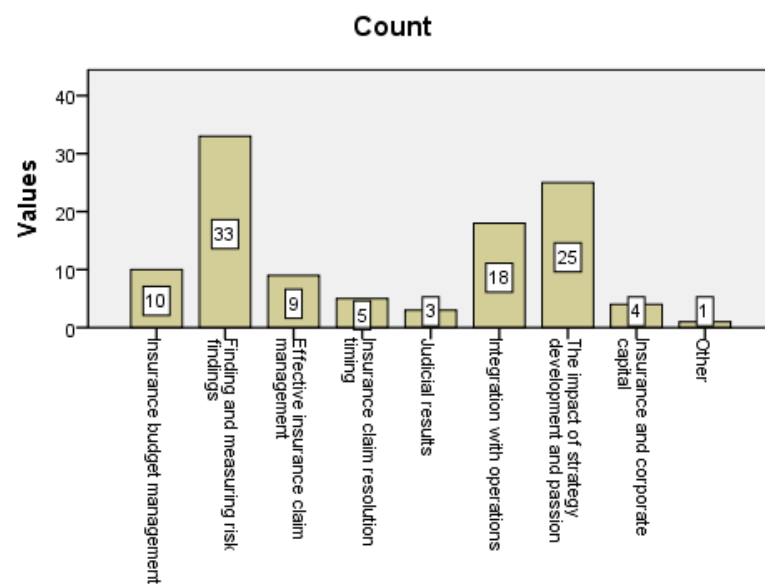


Figure 72 How do you measure your risk management performance?

Respondents state that they measure their risk management performance by analyzing risk findings (33), analyzing the impact of strategy development (25), analyzing the integration of operations (18), and with insurance budget management (10).

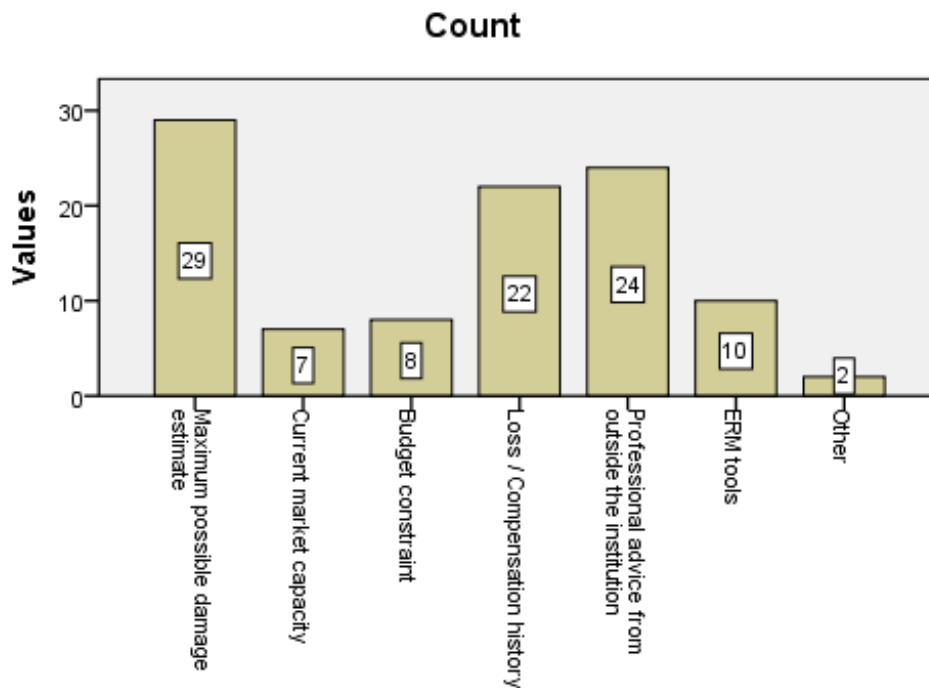


Figure 73 How do you choose your limits purchased per insurance branch?

29 respondents stated that the maximum possible damage estimate is how they choose their limits purchased per insurance branch. While 22 stated that they look at the loss, compensation history and 24 stated that they take professional advice from outside of the institution.

The pie charts below indicate that global policy documents are issued before the start date (37.29%), and within 1 month after the start date (18.84%). Local policy follows the same distribution.

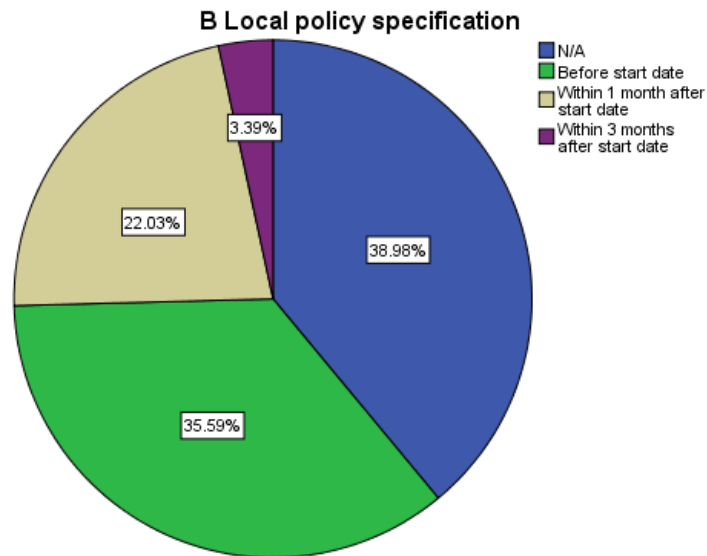


Figure 74 What are the three main developments regarding the handling of loss control service and compensation claims? *

The three main developments regarding the handling of loss control service and compensation claims are appropriate and realistic provisions and counter provision (17)., coordination among the teams involved in the claim (15). and pre-selection of lawyers / experts (15).

For the service provider, these are creation of the policy (24)., establishment of relationships between insured, insurer and brokers (18). and compensation creation of the claim handling procedure (14).

From the respondents, the process improvement is also important but mostly, compensation claims handling and pre-selection of lawyers or experts are considered to be improved.

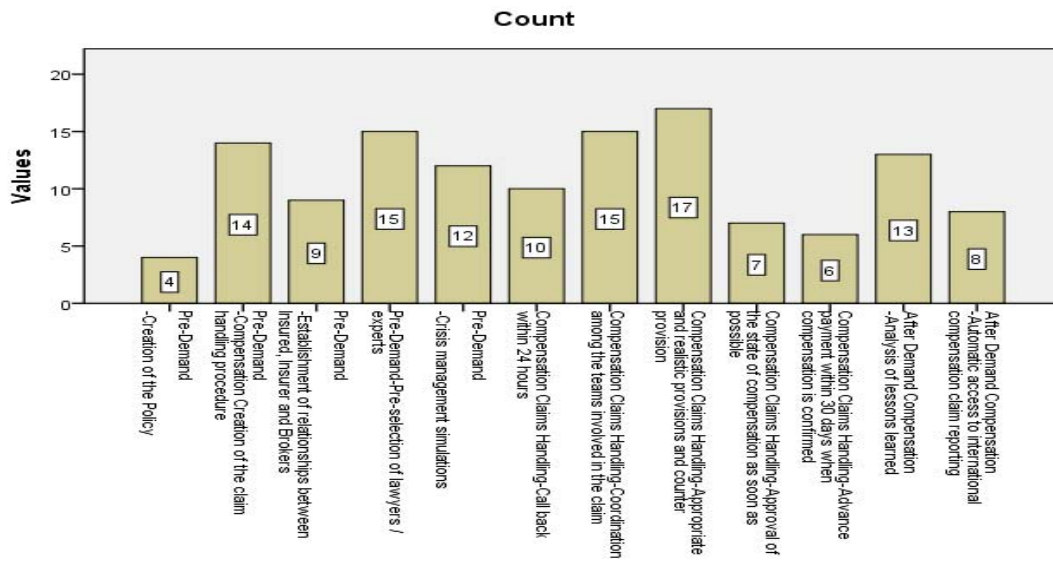


Figure 75 Compensation Claims

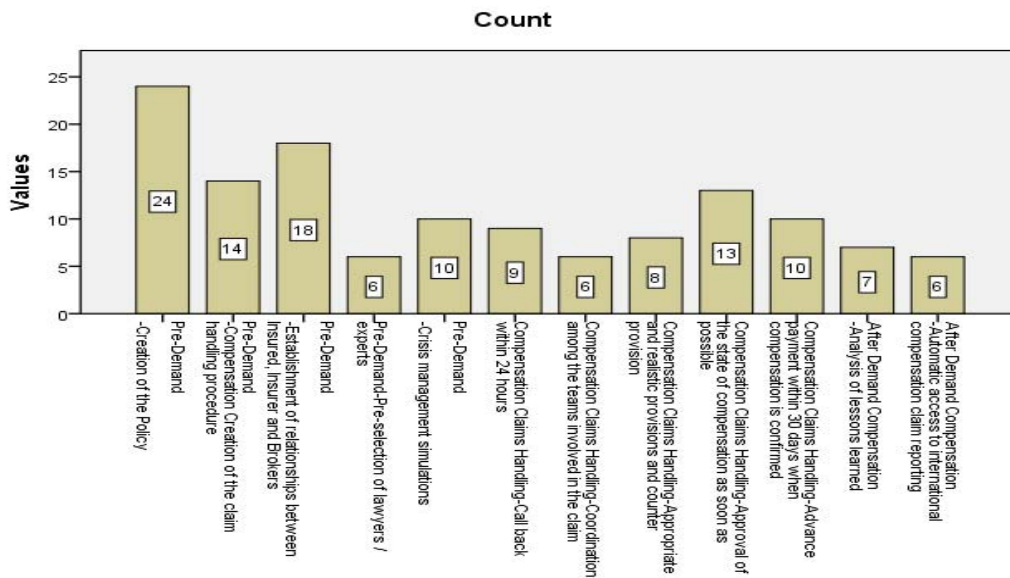


Figure 76 What are the developments regarding insurance policies as well as loss control services?

The developments regarding loss control services are D&O and Cyber functions with the organizations (13). and service providers (8)., both.

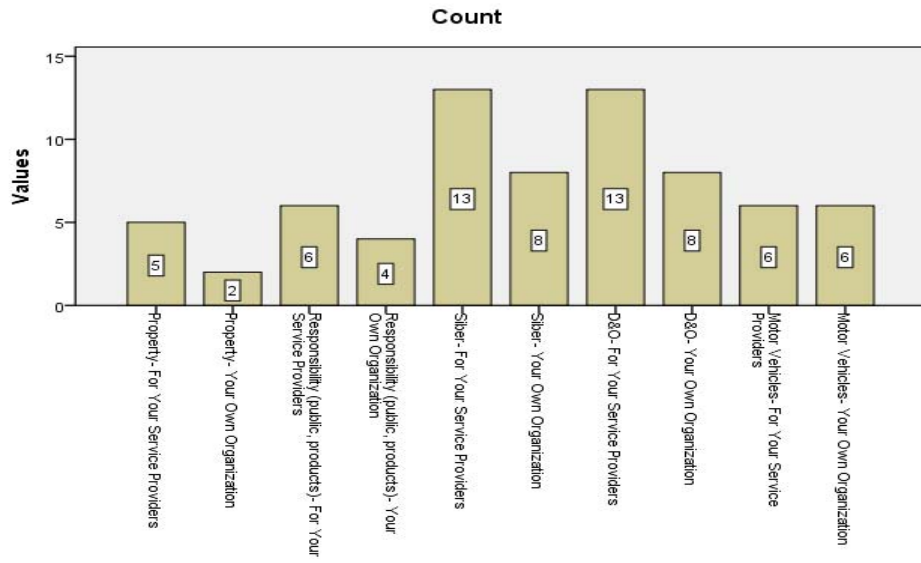


Figure 77 Service Provider

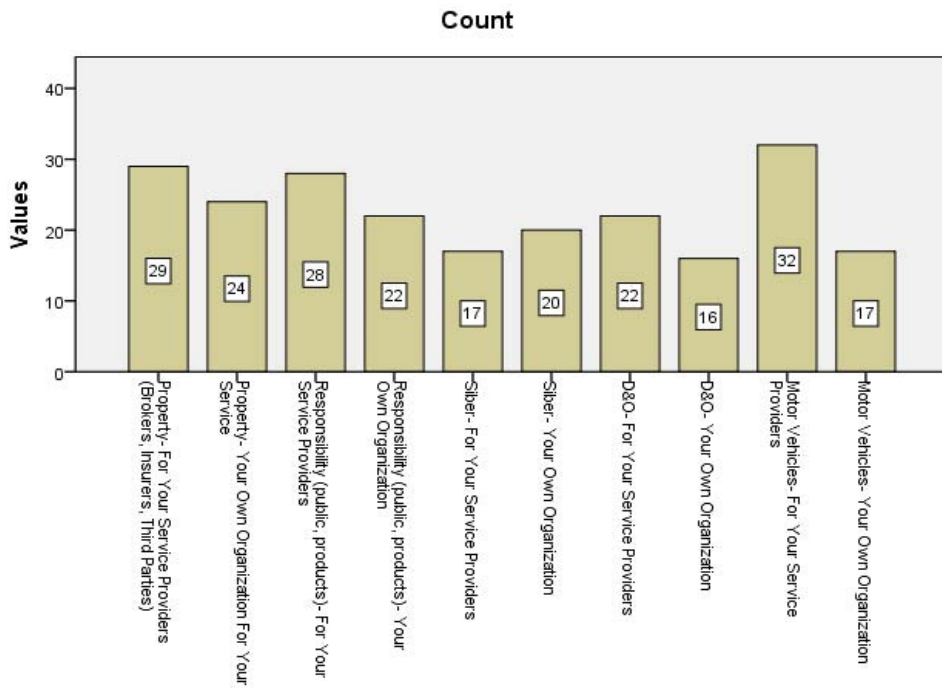


Figure 78 Use of the relevant data

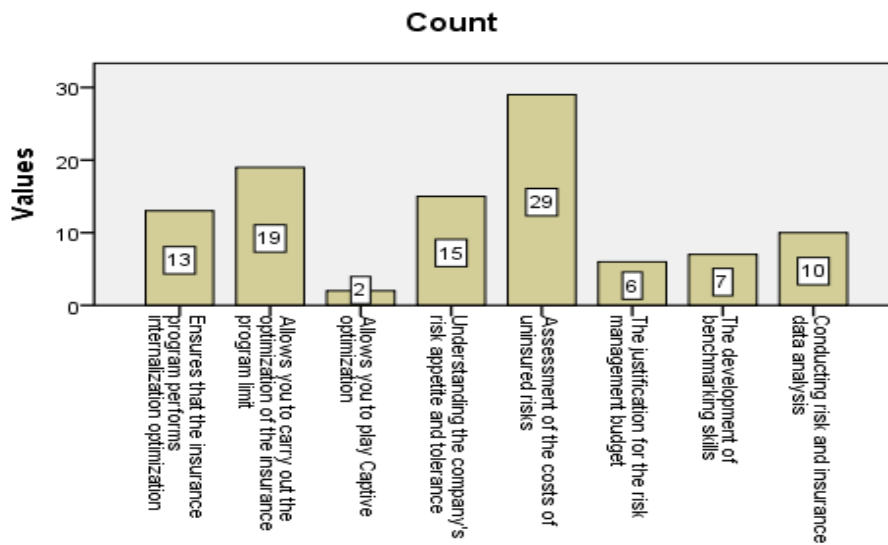


Figure 79 Use of the relevant data (2).

Respondents state that the most obvious use of the relevant data is conducting an assessment of the costs of uninsured risks (29), allowance to carry out optimization of insurance program limits (19), and understanding the company's risk appetite and tolerances (15).

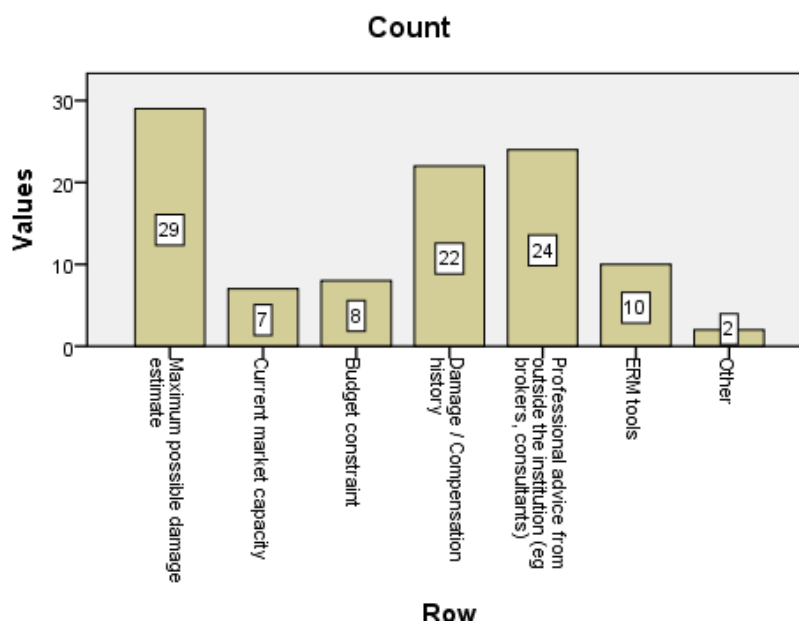


Figure 80 How do you choose your purchased limits per insurance branch?

29 of respondents select their purchased limits per insurance branch by focusing on the maximum possible damage estimate (29), professional advice from outside the institution (consultant advice) (24), damage/compensation history (claims histories) (22).

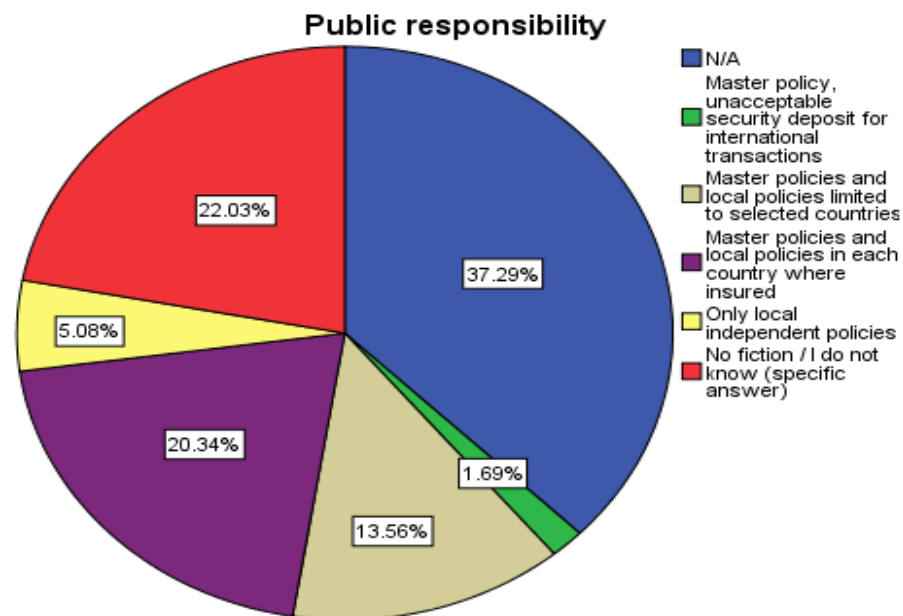


Figure 81 What is the most common and most effective international insurance program for the following risks?

For public responsibility risks the 59 respondents state that an effective insurance program are master policies and local policies in each country where insured at 20.34%, only local independent policies at 5.08%, master policies and local policies limited to selected countries at 13.56% and master policy, unacceptable security deposit for international transactions at 1.69%.

Thus, when the information is taken together we can state that the hypothesis is, to a degree, rejected as there is no significant difference between Turkey and the international arena. Even though the risk levels are different and the strategic activities are inherently separate from the international version, we see that the Turkish approaches are more operational vs. strategic.

IV CONCLUSION

We may see the origins of the concept risk in Indian-Arab systems from the 6th century. The probability sciences evolution made the base for the calculation of the chance of the occurring of the events especially after the printing press was used in Europe. Thanks to the evolutions in the statistical methods, the insurance sector developed and became the origine for risk management. The concept of risk management, which preceded the heading of insurance management, emerged only in the 1960s. By the end of the 1990s, as the data began to be shared via the Internet, cybercrime was introduced. During 2000's, following to the poor performance of risk management, the Sarbannes-Oxley regulation was introduced, to include the governance rules to the companies. (Dionne, 2018). The first established risk standard was launched in Australia in 1995. Later on, similar innovations were made in many countries such as Canada, Japan, USA. In 2004, COSO, based on corporate risk management, established the ISO 31000 standard in 2009.

Corporate disclosure, compliance oversight, controls monitoring, company training, and—the practice of public accounting—all have been impacted by Sarbanes-Oxley. In this perspect, management should assess the effectiveness of the company's internal controls over financial reporting and include its findings in the company's annual report to shareholders (PWC).

Risk management has been improving significantly in recent years, especially with the emergence of new risks due to the increasingly complex business environment or the increasing diversity of investors and shareholders. From this evolution, entities should adapt very quickly to these changes. It is also possible to minimize the risks of "agency" that may arise between shareholders and management, due to effective management of corporate governance. Standards, frameworks and guidelines are modified periodically following to the new research or innovative practices. Recently ISO has updated its risk management standard 31000 and COSO has published new principles, 'ERM – Integrating Strategy and Performance', using the helix shape instead of its cube, which recognizes the importance of technology and entity performance. It is enhanced the focus on the value, how entities create, preserve, and realize value (COSO,2018).

In the latest WEF, the VUCA (volatile, uncertainty, complexity, ambiguity) environment has been underlined. WEF states that the current competitive landscape can be defined by one word: 'disruption'. WEF states that the ideas of incremental progress, continuous improvement, and process optimizations do not work anymore. WEF acknowledges that these practices are necessary, but are insufficient. WEF supports the analysis that stakeholders are more engaged today, seeking greater transparency and accountability for managing the impact of risk, while also critically evaluating leadership ability to embrace opportunities. Even success can bring with it additional downside risk, such as the risk of not being able to fulfill unexpectedly high demand or maintain expected business momentum. Organisations and board members need to be more adaptive to change. They need to think strategically about how to manage the increasing volatility, uncertainty, complexity and ambiguity of the world (IRM,2018).

To follow the progress of the companies in Turkey, taking into practice what they thought would be helpful to themselves for international competition. As a state, some regulations can be made to make this happen, and even made compulsory by legislation. Companies open to the stock market in the US and even other foreign companies working with these companies are subject to the SOX audit, which also includes the risk management process. Besides ISO 31000, risk management standard, In ISO 9001:2015, risk management is being added with focus on risk-based thinking. Risk is defined as the effect of uncertainty on an expected result, where:

1. An effect is a deviation from the expected – positive or negative.
2. Risk is about what could happen and what the effect of this happening might be.
3. Risk also considers how likely it is to take place.

The main goal of this quality management system is for an organization to achieve conformity and customer satisfaction. In ISO 9001:2015 a risk-based thinking is used to achieve this goal. Similarly, in Turkey as well as finance and insurance companies are obliged to comply with the legislation on the adapted risk management abroad.

For the real sector, there is no statutory obligation imposed by law except for the establishment of a committee for the early detection of risks for companies open to the stock exchange, the preparation of regular reports by this committee and the regulation of an independent trial thereof. Again, since there is no regulation in this application, how the risk management is done is left to the company. It is actually not easy to create regulations because of the less common standards of the real sector, as in the financial sector.

Meanwhile, the state on financial risks is also able to regulate legislation in some cases. For example, the recent start of reporting the foreign exchange positions of the Central Bank over independent auditing and imposing limitations is an example.

The survey for this work was prepared exclusively for the non financial companies from the Istanbul stock exchange. We may consider they are more advanced at the corporate governance, also from the regulations than the other companies generally in Turkey. Meanwhile, the financial and insurance companies which are obliged to apply risk management were excluded in the study. The work has given us some results at three main headlines: risk managers profile, risk management insights and insurance management in Turkey.

This study aims to analyze the following research question, “Is the level of current risk management practices for non-financial companies in the international platform?” This argument is put forward as differences in the current legislation and corporate practices could potentially result in distinguishing results under the Turkish position. The following information sheds light on the differences and similarities between these two groups. Overall, we reject our hypothesis to a degree that there is a difference between Turkey and the international arena. Even though the risk levels are different and the strategic activities are inherently separate from the international version, we see that the Turkish approaches are more operational vs. strategic.

First of all, it's resulted that 24% of the risk managers are female, which is less than abroad. The fact that the proportion of females is lower than abroad is also related to the rate in the country as a whole. Additionally, FERMA survey shows that risk responsables younger than 35, are more in Europe (28,0% vs 13,6%).

Risk management organization in Turkey works on operational more than strategic jobs, particularly jobs that are covered together with insurance tasks. Nevertheless, there is also a good percentage that already begins to work on the strategical tasks as development and application of risk culture in the organization and the design and addition of risk controls, preventions. Next, they plan mostly more on business continuity management, which is also considered as a strategical task.

Meanwhile, firms state that strategy and execution aptitude, communication and presentation skills and planning and organization competence will be important about risk management for the organization over the next 3-5 years. In addition, most of the financial risks have been performed by the influence of financial risk hedging organizations, project managers evaluate their own risks at their planning and executions, and health and safety staff manages directly its risks. In fact, this would not contrast with the presence of enterprise risk management, since these professions require the expertise, but still they may be consolidated with the other risks of the company.

The risk managers in Turkey are paid less than the world, but parallel with general payroll of the country. As evolved, the risk managers are generally found within finance organization, which is not very different from the risk organizations abroad. Meanwhile, the report line is mostly direct to CFO, even in some cases to CEO or the Board, which gives more access to the top level of the company.

There are not many companies that have risk related committees other than the risk early detection committee. In fact, almost half of the companies in Turkey do the risk interaction through only this regulated way. Although some recent surveys have shown a risk committee presence about 50% to 60% of the companies even in the world, it is likely that besides they contribute the enterprise risk management system by opening the silo type management style, they can be useful also in determining the emerging risks. The evidence from the survey shows that 40.68% of the 59 respondents have risk committees other than Risk Early Detection, while 59.32% do not. Following to other searches by RIMS, cross-functional risk committee presence percentages fluctuate between 50% to 60% , and they express that they would focus on it more carefully since it is considered important the presence of the risk committees to detect emerging risks

(Marsh-RIMS 2016,2017,2018). Following to our survey, the data gained from the information system is employed in order to prepare the risk reports (38 respondents), to express risk in numbers (38), and to conduct a better audit (32). Following to another search, to express risk in numbers is also the most used purpose among the others, where risk reporting stays also as one of the main like the result of our survey (Marsh/RIMS 2015). Meanwhile, 66% of FERMA use claims data to conduct insurance program retention optimization. The percentage for our current analysis is 64%. Only 16.95% of respondents employ use of Captive. There may be a misinterpretation of captive insurance by respondents because there is not officially a captive insurance company in Turkey.

Surely, this confusion may have come to them, because some Group Companies may also insure, however, they are not found internally as captive. In Europe, the number of companies using captives is 34%. Company size is one of the main drivers to use captive. In FERMA report, it's also stated that there is a decrease in the number of captives especially because of the increasing operating costs and retaining the OECD recommendations on captives in 2014.

The business departments with the most and least risk management interaction are very similar with FERMA. Insurance, Finance, ethics/compliance and business continuity/crisis management functions are very close partners. Meanwhile, the relations with IT, Human Resources and Procurement may be improved if necessary. By the trend of the increase in cyber risks, the relationship with IT would likely to be more in the future.

Recent standards underline the need for risk management to become operational in order to implement risk-based practices. The majority of Turkish companies do not have a formal risk appetite report. Among the principles of the last standard of COSO that has been announced in 2017, it's also an important headline at the strategy and objective setting, which should also be embraced by the Board. In the ISO standard, the risk appetite is defined as risk criteria. The use of information systems in the measurement of risk management is not widespread in Turkey. The most common usage of the system is mainly for risk reporting as FERMA survey result and then also risk quantification. The most important risk primarily seen in Turkey for the companies is

the macro-economic conditions and political uncertainty, which was at lowering trend in the world.

The acceptance strategy is followed to mitigate and the companies are not satisfied obviously for this. Moreover, it's resulted that interest rate and foreign currency, competition, economic growth / deceleration and market strategy, customers can also threaten the business. The companies mitigate for interest and foreign currency at high level but they are not too much satisfied by the performance. Business continuity and cyber attack risks where the likelihood is thought high are among the top risks in FERMA while the respondents didn't consider them at the priority. They also mitigate them at the medium level, for the cyber the satisfaction level is low. These are recently developed also for FERMA, and we may expect some different mitigation strategies or tools in the future. Business disruption and economic conditions are also considered among the top risks following to the surveys of RIMS.(RIMS/Marsh,2013). From FERMA, despite the evolving economic conditions and the increased concern about cyber-attacks and data privacy, "digital transformation and "strategy execution and transformation programs" are not among the top ten risks to business. Following to RIMS, 62% of the companies see already cyber risk among top 5 risks (MARSH/RIMS, 2018). Naturally, BIST companies need firstly to recognize them more closely in order to take eventual actions. In the upcoming period, they expect more financial crisis and competition risks. They also consider to do investments more to combat cyber attacks, technological developments, address customer requests, address competition and the financial crisis. On the other hand, firms will have less tendency to invest in adhering to regulations, talent retention, natural disasters, terror and political changes and their supply chain. Meanwhile, we may remember that according to the latest WEF report in 2018, the most important risk is seen environmental risk and following to Global CEO report conducted by KPMG in 2016 is talent retention for the executives.

More than 44% of respondents do not have a formal risk appetite report for Risk Appetite and Risk Tolerance. In fact, this is fundamental for beginning the risk management process properly. The RIMS survey resulted as 52% no, after the distribution of NA, which would not be too different from ours (RIMS/Marsh 2013).

Risk specialists mostly use analyses and also rely on senior management judgements to measure the impact of the potential risks. Although in terms of lower utilization rate in Turkey, insurance approaches used to reduce the risk does not seem different from the world. One of the most desirable developments is technical preliminaries to prevent damage. Insurance companies are also preparing reports to take measures to reduce the likelihood and severity of risk at the scene with the most competent experts in the world to provide services to the firm. Thus, there is also the motivation for the related company as the possibility of lowering the premium is also created. Consequently, from the current financial and economic environment, the most important expected change would be strengthening loss prevention activity also in Turkey as it was resulted according to FERMA. Insurance rate in Turkey is well below the world average in terms of gross direct insurance premiums. Gross direct insurance premiums, defined as gross insurance premiums for direct insurance for a reporting country, divided by the population, represent the average insurance spending per capita in the country. This indicator is shown in USD per capita. According to latest OECD insurance data, this amount is 161 USD for Turkey, 11000 USD for Ireland for example in 2016.

One of the most important reasons for this is that we can think of risk management as internalizing and taking back measures. Insurance are one of the measures, and how much preparation can be made about the surprises that may arise outside of it can contribute to the company's value. For public responsibility risks the respondents state that an effective insurance program are master policies and local policies in each country where insured at 20.34%, only local independent policies at 5.08%, master policies and local policies limited to selected countries at 13.56% and master policy, unacceptable security deposit for international transactions at 1.69%. According to FERMA, compliance with local regulations remains a key consideration for international coverage. Respondents state that they measure their risk management performance by analyzing risk findings (33)., analyzing the impact of strategy development (25)., analyzing the integration of operations (18). and with insurance budget management (10). According to the survey of RIMS, the most important measurement criterias are Insurance budget management, Timely risk identification, assessment and effective claims management.(RIMS/Marsh 2015). This surprisingly shows more strategic focus than operational at our survey versus the other one.

An increase in the prevention activity (by 35.59% of respondents). is stated to allow for consideration of the current financial and economic environment. Furthermore %3.39 of them even considers a decrease. According to FERMA, it's also the case and with higher percentage of the participants (54%). While, long term contract or extension negotiations is considered to increase as 22.03%, decrease as 10.17%. the rest responded it as the same or no idea.

Implementation of captive facilities, compensation claim reconciliation, selection of more durable insurers, purchases of credit insurers are stated to remain the same mostly. Meanwhile, 30% of FERMA participants would accelerate the claims settlement process, 43% of them would intend to negotiate long term or roll-over agreements with the insurers.

Companies in Turkey mostly choose the limits purchased per insurance branch by maximum possible damage estimate and then professional advice from outside consultants as resulted from FERMA survey. Meanwhile, some use ERM as well; we don't know the trend in Turkey but we may also expect an increase as stated at FERMA report. The policy documents were issued before the policy start date at 37% which is more than FERMA participants, and which is at 18%.

The three main developments regarding the handling of loss control service and compensation claims in Turkey are appropriate and realistic provisions and counter provision, coordination among the teams involved in the claim and pre-selection of lawyers / experts for companies themselves. For the service provider, these are creation of the policy, establishment of relationships between insured, insurer and brokers and compensation creation of the claim handling procedure.

Meanwhile, according to FERMA, the areas of improvement are seen as rapid confirmation of coverage, policy wording tests and coordination between teams involved for service providers. They also state the importance of the communication.

For companies themselves, key areas of improvement are different. Analysis of lessons learned is significant for risk managers with 54% believing that they need to improve this process within their organisations. This is followed by crisis management

simulations at the pre-loss stage and the setting up of claims handling procedures and the co-ordination between teams involved.

The developments regarding loss control services are D&O and Cyber functions with the organizations and service providers, both. Following to FERMA, risk managers believe that cyber, liability and property are the main areas for improvement in relation to loss control services, alongside insurance policies.

There is not any captive insurance company in Turkey; meanwhile, there is also a tendency of the decrease in it in Europe for FERMA, following to the operational cost increase, OECD concerns about profit transfer and tax monitoring focuses.

The two main areas of development for the IT tool for the enterprise is technical information/recommendation and best practices and daily update of activities and documents. The two main areas of development for the off-site IT solution is 7/24 transportation and damage claims and management. Tailor-made and user-friendly reporting capabilities as well as claims management tools remain the top two priorities for improvement in terms of IT platform/portal for risk and insurance management, either via an in house or external solution according to FERMA report.

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APPENDIX 1: INQUIRY CONDUCTED

PART 1: RISK MANAGEMENT EXPERTISE AND STUDIES

This section investigates:

- Understanding the role of Risk and Insurance Management and strengthening its position
- To support the development of Risk and Insurance Management function

A) Profile of Risk Managers

Q1. What is your gender?

- Female
- Male

Q2. How old are you?

.....

Q3. What is the total monthly income of your Risk Manager? (The results will be kept confidential).

- < 5000 TL
- 5000-10000 TL
- 10000-20000 TL
- 20000-30000 TL
- >30000 TL

Q4 . What is your role in the company?

- Chairman of the Board
- CEO/ General Manager
- Secretary of the Board
- CFO/ Finance Manager
- Treasury Chief/ Treasury Manager
- COO
- CRO
- Risk Director/ Manager
- Insurance Director/ Manager
- Captive Director/ Manager
- Internal Audit Manager
- Legal Advisor
- Business Continuity Director/ Manager
- Operational Risk Director/ Manager
- Health and Safety Director/ Manager
- Security Director/ Manager
- Compliance Director/ Manager
- Other

Q5. To whom Risk/ Insurance Managers are reporting to in your organization?

Please answer only one for each section

	<u>Risk Management</u>	<u>Insurance</u>
1 CEO	1	2
2 Board of Directors/ Board of Supervisors	1	2
3 Audit Committee	1	2
4 Risk Committee	1	2
5 General Manager	1	2
6 Secretary of the Board	1	2
7 Legal Advisor	1	2
8 COO	1	2
9 Internal Audit Manager	1	2
10 Treasury Chief	1	2
11 CRO	1	2
12 CFO	1	2
13 Other	1	2

Q6. Which of the following tasks in your organization are the responsibilities of the Risk Management and Insurance Leader?

	YES	NO Planned for 2018	NO Not planned
1. Development of risk maps: risk identification, analysis, evaluation, prioritization and reporting	1	2	3
2. Integration of risk management as part of business strategy	1	2	3
3. Support in other functional areas in terms of contract negotiations, project management, acquisitions and investments	1	2	3
4. Insurance Management and Damage Management/ Prevention of Insurable Damage	1	2	3
5. Risk controls/ risk prevention design and practice	1	2	3
6. Analysis of capital projects and presentation of business plans	1	2	3
7. Design and implementation of risk financing strategy and partnership solutions	1	2	3
8. Development and implementation of risk culture within the organization			
9. Business Continuity Management/ Emergency Management/ Crisis Management/ Development and inclusion of event response programs and solutions	1	2	3
10. Definition of Compliance (Management, Structure, Inclusion and Insurance).	1	2	3
11. Defining Risk Strategy	1	2	3

Q7. How does your organization's Risk Leader interact with the Board of Directors and / or Senior Management?

Risk Leader presents officially to the Board of Directors and Senior Management several times a year

Risk Leader makes official presentations to the Board of Directors and Senior Management once a year

Meeting with Board and / or Senior Management members as requested

No formal reporting mechanism for Risk Management

I have no idea / I don't know

Q8. Determine the degree of relationship of your organization's Risk/ Insurance Leader

1 no relationship / participation

9 closely related

1. Strategic planning
2. Ethics/ Compliance/ Legal
3. Corporate Social Responsibility
4. Sustainability/Sustainable Development
5. Business Continuity/ Crisis Management.....
6. Internal Control/ Internal Audit.....
7. IT (for large projects).
8. Investment and Investor Relations/
9. Reputation issues/ Treasury/ Finance(for all business budget decisions).
10. Mergers & Acquisitions/ Transfer decisions.....
11. Sourcing/ supply.....
12. Production/ Logistics/ Distribution/ Quality.....
13. Insurance Management.....
14. HR-Social Rights of Employees.....

B) Characteristics of surveyed companies**Q9. What is the core business sector of your group? (May be BIST Indices).**

- Automotive
- Consumer products (household product, tobacco).
- Energy / Auxiliary Facilities (Energy, Electricity, Oil and Gas, Climate Change and Sustainable Energy).
- Food and Beverage
- Pharmaceutical and Life Sciences (CRO's, Biopharma, Medical Devices, Biotechnology, Medical Equipment and Supplies).
- Manufacturing (Industrial Equipment, Shipbuilding and Engineering, Finished Product and Material Solutions, Chemicals).
- Mining (Extraction, Different Mining Companies, Mining Services, Aggregates).
- Other

Q10. What is the turnover of your organization?

- Less than 50 million euros
- 50 million to 100 million euros
- 100 million to 500 million euros
- 500 million to 1 billion euros
- 1 billion to 5 billion euros
- More than 5 billion euros

Q11. What is the total number of employees of your organization?

- Less than 250
- 250 to 1000
- 1001 to 5000
- 5001 to 10000
- 10001 to 20000

- More than 20000

12. Is your organization on the stock exchange?

- Yes
 No

C) Risk Management Organization

Q13. Which of the following forms of organization best describes yours? (I: Insurance, R: Risk, FA: Financial Affairs, IA: Internal Auditing).

1		I/ R/ FA/ IA			(All functions work in one section)	
2	I		R	FA	IA	(All functions work in four separate sections)
3		I/ R		FA	IA	(Risk and Insurance Management work together)
4	I			R/ FA	IA	(Risk Management and Internal Control work together)
5		I/R/FA			IA	(Internal Audit works separately)
6	I			R/FA/IA		(Insurance Management works separately)

Q14. To what extent does your organization prioritize risks by mapping them?

- Only at the senior management level (strategic, financial and operational).
 All levels, including corporate and subdivisions
 Only in certain business units
 Only in certain risk categories
 No mapping done yet

Q15. Do you have a risk committee other than the Early Risk Detection?

- Yes
 No

Q16. In what areas is the data provided from the Information System used?

- To express risks in numbers
 Understanding risk appetite
 Risk reporting
 Optimize insurance programs
 Evaluate the supply chain
 For risk financing decisions
 Mergers and Acquisitions
 For better audit

Q17. Is there a separate module / tool / software related to risk management in your Information System (ERP).?

- Yes

- No

Q18. What is the biggest obstacle to ERP structuring?

- The Board of Directors is not supporting
- Lack of qualified staff to adapt the program
- Internal Audit and Control needs
- Not supporting organizational structure and the corporate culture
- Uncertainties in taxing of alternative risk finance strategies
- Resistance to change management
- Other: please specify

D) Using captive from a firm's point of view

Q19. Does your organization use a captive (own insurance company).?

- Yes
- No

Q20. What is your strategy in relation to the risks that are difficult to put into the insurance market over the next two years?

- Captive Insurance
- Creating reinsurance
- Renting captive
- Protected Cell Company
- Structural warranties
- No strategy

Part 2: Your Risk Management Approach

This section aims to identify the main priorities for Risk and Insurance Leaders in Turkey.

21. What is the top 10 risks that threaten your organization's strategic success?

A. In terms of impact

Strategic and External Risks

- Politics, the country's instability (crisis, war, regulatory changes).
- Economic Growth/ Slowdown
- Competition
- Market Strategy, Customers
- Innovation
- Digital Transformation
- Demography
- Strategy Implementation and Transformation Programs
- Reputation and Brand
- Strategic Project Failure
- Terror

Financial Risks

- Interest Rate & Currency
- Debt, Cash Operations
- Increase in Financial and Tax Regulations (Including Financial Optimization).
- Pension funds (ageing workforce and market fluctuation): To be able to pay the pension pensions and to fulfill the obligations of the pension

Operational Risks

- Loss of Assets (Buildings, Equipments).
- Business Continuity Deterioration
- Product and Service Quality (Design, Safety and Responsibility).
- Human Resource/ Key People, Social Security (Work).
- IT Systems and Data Centers
- Cyber Attack/ Data Privacy
- Health and Security
- Safety
- Supply Chain, Outsourcing/ Offshore, Logistics and Transport
- Contract Management, Partnerships

Compliance and Ethical Values

- Corporate Social Responsibility, Human Rights and Ethics
- Fraud, Bribery and Insider Dealing
- Regulation and Non-compliance with the Law
- Environment

B. In terms of probability

Strategic and External Risks

- Politics, the country's instability (crisis, war, regulatory changes).
- Economic Growth/ Slowdown
- Competition
- Market Strategy, Customers
- Innovation
- Digital Transformation
- Demography
- Strategy Implementation and Transformation Programs
- Reputation and Brand
- Strategic Project Failure
- Terror

Financial Risks

- Interest Rate & Currency
- Debt, Cash Operations
- Increase in Financial and Tax Regulations (Including Financial Optimization).
- Pension funds (ageing workforce and market fluctuation).: To be able to pay the pension pensions and to fulfill the obligations of the pension

Operational Risks

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- Health and Security
- Safety
- Supply Chain, Outsourcing/ Offshore, Logistics and Transport
- Contract Management, Partnerships

Compliance and Ethical Values

- Corporate Social Responsibility, Human Rights and Ethics
- Fraud, Bribery and Insider Dealing
- Regulation and Non-compliance with the Law
- Environment

Q22. Specify the current mitigator levels of the three most important risk areas that you have identified above?

	Mitigation Level (1)	Mitigating Strategy (2)			Level of Satisfaction (3)
		1) Reducing	2) Transfer	3) Honoring	
Highest Risk 1	low / medium / high				low / medium / high
Highest Risk 2	low / medium / high				low / medium / high
Highest Risk 3	low / medium / high				low / medium / high

Mitigation Level: Clear result of existing mitigation plan and risk management

Mitigating Strategy: The main mitigation action between Reduction, Transfer or Acceptance

Satisfaction Level: Are you satisfied with the risk mitigation and mitigation actions?

How are the top management responses?

23. What are the risks you expect to occur for your organization in the coming period?

- Cyber Attacks
- Regulations
- Talent availability
- Technological change
- Customer demands
- Competition
- Natural disasters
- Terror and political developments
- Financial Crises
- Supply Chain

Q24. Which tools do you use to measure the impact of emerging risks?

- News
- Brokers
- Top management
- Field
- Data analysis
- Seminars
- Risk colleagues
- Insurers
- Consultants
- Personal experience
- Financial analysts
- Lawyers
- Social media channels

Q25. How do you plan to manage your risk management investments in the following areas in order to manage the following risks in the following period?

Talent availability	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Technological changes	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Customer demands	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Competition	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Natural disasters	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Terror and political developments	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Financial crises	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>
Supply chain	Increase <input type="checkbox"/>	will remain the same <input type="checkbox"/>	Decrease <input type="checkbox"/>

Q26. Do you have a formal risk appetite report for Risk Appetite and Risk Tolerance?

- Yes, both qualitative and quantitative
- Yes, mainly qualitative
- Yes, mainly quantitative
- No

Q27. Which of the following will be important for risk management for your organization in the next 3-5 years?

- Strategy and application compliance
- Business intelligence
- Planning and organization competence
- Collaboration management
- Analytical expertise
- Technical data
- Communication features
- Change management

Q28. How do you measure your risk management performance?

- Insurance budget management
- Finding and measuring risk assessments
- Effective insurance claim management
- Insurance request resolution timing
- Judgement results
- Integration with operation
- Strategy development and implementation impact
- Insurance and corporate capital
- Other, please specify

Part 3: Insurance Management

This section explores the expectations of the Risk Managers and the prediction of the insurance market.

Q29. Which of the following changes to your insurance program allows you to identify that this is the result of the current financial and economic environment? Please describe each item as increased/decreased/remained the same

	Increased	Decreased	Same
Long-term contract or extension negotiations			
Use or implementation of captive facilities			
Acceleration of reconciliation request			
Selection of financially more resistant insurers			
Purchase of credit insurance			
Strengthening damage prevention			

Q30. How do you choose the limits purchased per insurance branch?

Please select up to 3 options

- Maximum possible damage estimate
- Existing market capacity
- Budget Limitation
- Damage/Compensation history
- Professional advice from outside the organization (eg brokers, consultants).
- ERM tools (in-house benchmarking data, risk mapping, risk records, risk measurement and risk modeling, risk appetite, compensation analysis, risk reporting / risk dashboard, monitoring of risk mitigation actions).
- Other

Q31. On average, indicate when your policy documents were issued for the policy start date at the latest renewal period.

A Principal (Global). Policy

- Before the start date
- Within one month from the start date
- Within three months from the start date
- Three months after the start date

B Local Policy Arrangement

- Before the start date
- Within one month from the start date
- Within three months from the start date
- Three months after the start date

Q32. What are the three main developments regarding loss control service and compensation claims?

Loss Control Services= Risk industry tools include health & safety training programs for employees, cyber risk mitigation initiatives, and helpline for directors.

Please view at least three themes in the column

	Zone of Development	For Your Service Providers (Brokers, Insurers, Third Parties)	Within Your Own Organization
	Preliminary Request		
1	Developing policy	1	2
2	Developing a compensation request handling procedure	1	2
3	Developing relations between insured, insurer and brokers	1	2
4	Preselection of lawyers / experts	1	2
5	Crisis management simulations Handling Compensation Claims	1	2
6	Returning calls within 24 hours	1	2
7	Coordination between teams involved in compensation (internal, broker, ins	1	2
8	Proper and realistic provisions and creating provision	1	2
9	Approval of compensation status as quickly as possible	1	2
10	Prepayment within 30 days when the compensation is approved	1	2
11	Analysis of lessons learned	1	2
12	Automatic access to international compensation claim reporting		

Q33. What is the development of loss control services as well as insurance policies?

Loss programs for employees, cyber risk mitigation initiatives, and helpline for directors. control services: includes risk industry tools, health & safety training

Development Area

For Your Service Providers
(Brokers, Insurers, Third

Within your own
organization

Risk management / loss control services as well as recommended insurance policies

	Only main policy, which is not accepted for international transactions	Main policy and local policies limited to the selected countries (selection criterion type: compliance level type; turnover by compliance level, number of employees, etc.)	Main policy and local policies in each country where the insured is located	Local independent policies only	No idea/ I don't know
1 Public responsibility	1	2	3	4	5
2 Credit	1	2	3	4	5
3 Director/Manager Responsibility	1	2	3	4	5
4 Environmental Responsibility	1	2	3	4	5
5 Errors & Neglects, Professional Responsibility	1	2	3	4	5
6 Property damage/Business Interaction	1	2	3	4	5
7 Product Liability	1	2	3	4	5
8 Motor Vehicle Responsibility	1	2	3	4	5
9 Cargo	1	2	3	4	5
10 Social Rights of Personnel	1	2	3	4	5

Q34. Select the most obvious 3 between the following items in the use of relevant data:

Please select up to 3 options (multiple selection, up to 3 selections).

- Enables the internal retention optimization of the insurance program
- Enables you to optimize the insurance program limit
- Enables you to perform captive optimization
- Understanding the risk appetite and tolerance of the company
- Assessing the costs of uninsured risks
- Rationale for risk management budget
- Developing benchmarking skills
- Not carrying out risk and insurance data analysis

Q35. How do you choose your purchased limits per insurance branch?

Please select up to 3 options

- Maximum possible damage estimate
- Existing market capacity
- Budget constraint
- Damage/ Compensation history
- Professional advice from outside the organization (eg brokers, consultants).
- ERM tools (in-house benchmarking data, risk mapping, risk records, risk measurement and risk modeling, risk appetite, compensation analysis, risk reporting/ risk dashboard, monitoring of risk mitigation actions).
- Other, please specify

Q36. In your opinion, what is the most common and most effective international insurance program for the following risks?

		Only main policy, which is not accepted for international transactions	Main policy and local policies limited to the selected countries (selection criterion type: compliance level type: turnover by compliance level, number of employees, etc.)	Main policy and local policies in each country where the insured is located	Local independent policies only	No idea/ I don't know
1	Public responsibility	1	2	3	4	5
2	Credit	1	2	3	4	5
3	Director/Manager	1	2	3	4	5
4	Environmental Responsibility	1	2	3	4	5
5	Errors & Neglects, Professional Responsibility	1	2	3	4	5
6	Property damage/ Business Interaction	1	2	3	4	5
7	Product	1	2	3	4	5
8	Motor Vehicle Responsibility	1	2	3	4	5
9	Cargo	1	2	3	4	5
10	Social Rights of Personnel	1	2	3	4	5

Q37. What are the 2 basic development areas you would expect from a risk and insurance management IT platform/portal?

Please select up to 2 options (Multiple selection, up to 2 selections per column).

	Development Area	Inhouse IT Tool	External IT solution (offered by Broker or Insurer)
1	7/24 Access	1	2
2	Daily updates of activities and documents	1	2
3	Damages/compensation claims management tools	1	2
4	Interactive (help box text: a communication program platform for your risk management team, brokers, insurers and third parties)	1	2
5	Specially prepared and user-friendly reporting possibilities	1	2
6	Technical informations/ recommendations/ best practices	1	2
7	Management programs/ planning	1	2



CV

Riza Bozoklar was born in 1969 in İzmir. He is a graduate of İzmir Saint Joseph College, İzmir Sciences High School and Bosphorus University Industrial Engineering Department; he earned his MBA at Bilgi University. Mr. Bozoklar completed Paris Essec University Delphi Management Programme and is currently pursuing his PhD in Financial Economics at Doğuş University. His 26 years of job experience has been in industrial field; he has spent 5.5 years working in Italy and France. His career began at the Italcementi Group, where he has served as CFO in the Group Companies of Fiat and Ata Holding, Delphi Automotive and finally Çimko A.Ş., a joint venture of Sanko Holding and Barbetti. He has been serving as CFO of Petkim since October 2013. Riza Bozoklar is married and has two children. He speaks Italian, French, and English fluently; he also holds CPA degree.