

Open University Cyprus

Hellenic *Open University*

***Master's join degree/post graduate Programme
Enterprises Risk Management (ERM)***

MASTER THESIS



**Factors of Operational Risk Management in Public / Private
Organizations and Enterprises that Contribute to the
Organizational Continuity after Changes / Reforms**

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**Supervisor
Dr. Dionysios Gerontogiannis**

June 2018

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«Enterprises Risk Management (ERM)»
Faculty of Economics and Management

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Summary

In this thesis, elements of risk management process and risk management models in organizations and enterprises are initially presented. Then, it is analyzed the research (qualitative and quantitative) which have been done in order to find out which factors of operational risk management contribute to the organizational continuity of an organization which have faced a crisis and have “survived”, which is the role of the organization’s structure and which is the role of leadership. The analysis of data showed us the general characteristics of Greek organizations / enterprises and their risk management actions. In the last part the factors which contribute to the organizational continuity are defined.

Acknowledgements

I would like to thank for their time the personnel of the organization / enterprises that provided me with the information I needed through the interviews and the answer of the questionnaire. I am also grateful to my supervisor Dr. Dionysios Gerontogiannis for his support, his patience and motivation during the preparation of this thesis. I would also like to express my thanks to my family and friends for their support and understanding all these years.

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Chapter 1

The chronology of risk management

1.1 The sense of risk and kinds of risk

Risk is the exposure to a potential event with negative consequences mainly. The magnitude of the risk is characterized by two components. The first is the likelihood, the probability of an event to occur and the second is the impact of an event.

The organizations / enterprises are threatened by many risks, external or internal. According to the World Economic Forum (Forum 2017) there are five categories of Global Risks. These are: Economic Risks, Environmental Risks, Geopolitical Risks, Societal Risks and Technological Risks. In Table 1 we see some risks in every category.

EXTERNAL RISKS	
RISK TYPE	RISK
ECONOMIC	asset price collapse oil and gas price shock fiscal crisis retrenchment from globalization chronic fiscal imbalances unemployment and underemployment severe energy price shock
ENVIRONMENTAL	failure of climate-change mitigation and adaptation climate change extreme weather events

	major natural disasters
GEOPOLITICAL	weapons of mass destruction interstate conflict with regional consequences failure of national governance state collapse of crisis large scale terrorist attacks geopolitical conflict
SOCIETAL	large-scale involuntary migration rapid and massive spread of infectious diseases management of population ageing severe income disparity food shortage crises pandemics
TECHONOLOGICAL	cyber-attacks critical information infrastructure breakdown massive incident of data fraud / theft breakdown of critical information infrastructure

Table 1: External risks

Some internal risks for the organizations / enterprises are financial solvency, personnel issues, infrastructure problems, management problems (lack of communication, inappropriate structure, lack of strategy plan, inappropriate allocation of duties, unskilled personnel, conflicts, etc).

1.2 The need for managing risk and its history

If organizations / enterprises do not succeed to avoid or eliminate risks they will face crises. Crisis is defined as a situation which occurs due to an unforeseen event. The negative consequences of a crisis affect the operation environment of the organization / enterprise and may harm its continuity. Here comes the need for managing risk through to risk management which is intentional action to reduce the exposure to the event and its negative consequences.

The first application of risk management in an undefined and not organized shape was used in the market of insurance because of the nature of this branch; its aim is to protect

organizations and individuals from the risk of financial losses or health problems. The systemic study of risk management began after the Second World War. During 1950s, when the insurance market was considered to be very expensive and incomplete for protection against pure risk, other forms of risk management were created. During 1970s, the use of derivatives as risk management instrument started and they became widely used in 1980's, because the companies had increased the use of financial risk management. Then it began the creation of international risk regulation and the development and application of internal risk management models. Now, most of organizations follow risk management strategies in order to avoid or eliminate the possible risks. (Covello and Mumpower 1985) (Hoyt and Liebenberg 2011) (Nocco and Stulz 2006)

1.3 Risk management factors

There are external and internal risk management factors. The externals are economic, environmental, geopolitical, societal & technological.

In the internal there are organizational factors: corporate strategy, reputation, culture (agreed definitions of key risk management terms, common language, risk-aware organizational culture, which recognizes the existence of uncertainty in business and projects and determines to address it proactively), corporate ethos, policies, standards, previous experience, market positioning, senior management style, systems and procedures (Simple and scalable process for risk management, efficient procedural framework to support the risk process, proven methods and techniques to implement all elements of the risk process, capable tools to support risk techniques, clear objectives for risk management, at business, strategic and project levels, suitable contractual framework to facilitate the risk process), availability of adequate resources (human, financial, technical, organizational) for implementation of the risk process, availability of adequate resources for implementation of agreed risk responses, the building of working groups.

There are also group factors such as interpersonal issues, hierarchical power, leadership style and commitment, communication approach in order to share understanding of key concepts and principles of risk management, coordination

between the working groups and between their members, alliances, conflicts, supervision and control systems, empowerment, motivation systems.

Also important are human factors such as skills, knowledge, competence, capability, stress levels, motivation, emotional health, cultural background, commitment to the organization / enterprise.

1.4 Risk management process

A simple Risk Management Process follows 5 basic steps, although there are models of risk Management Process which have more analytic steps.

- 1ST STEP: Identify the Risk.

In this step the organizations should uncover, recognize and describe risks that might threaten their continuity and there are a lot of techniques to help them succeed.

- 2nd STEP: Analyze the Risk

In this step the organization analyzes and determines the likelihood and the impact of each risk in order to understand how they will affect its operation, its aims and its continuity.

- 3rd STEP: Evaluate the Risk

In this step the organization determines the risk magnitude, which is the combination of likelihood and impact, in order to evaluate the risk. It decides whether the risk is acceptable or whether it is serious enough and needs to be treated or avoided

- 4th STEP: Treat the Risk

In this step the highest ranked risks are assessed and the organization creates a plan in order to treat or at least reduce these risks.

- 5th STEP: Monitor and Review the Risk

In this step the organization reviews the risk so as to be prepared to identify new risks.

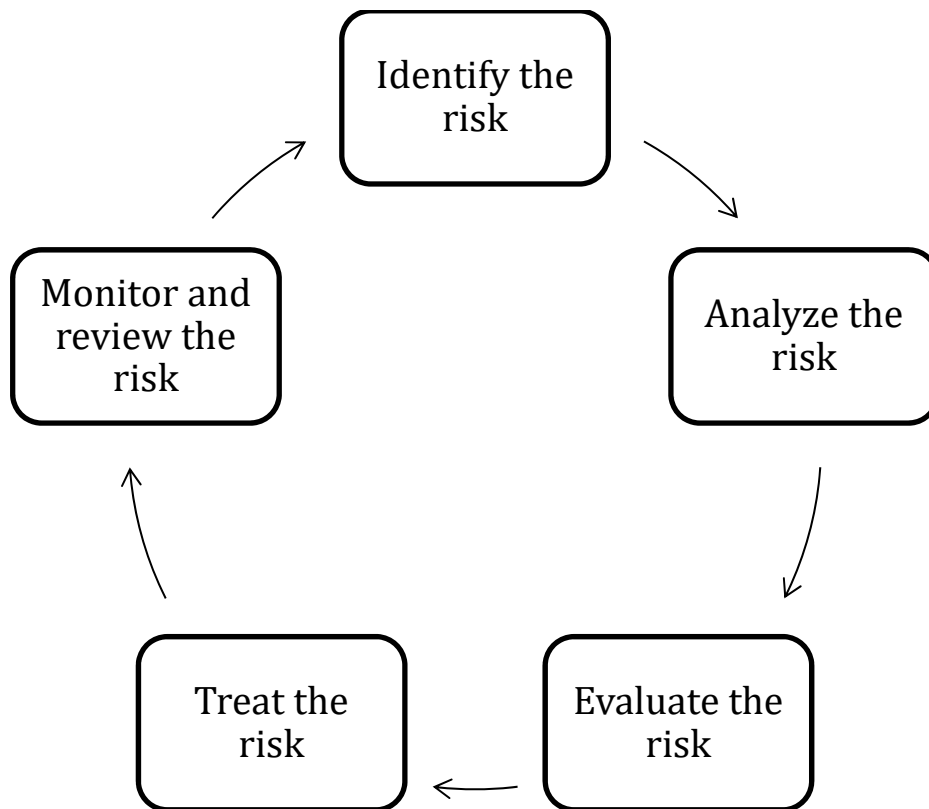


Figure 1: Risk Management Process

According to Holistic Risk Management the basic operational procedures of forecasting, organizational learning and monitoring interact and are interdependent. (Artunes and Hermani 2011)

1.5 Crisis Management

Crisis management is the organized action and the procedures which are implemented when the organization is threatened by an unexpected event in order the continuity of the organization to be ensured. The four basic phases of crisis management are crisis prevention, crisis assessment, crisis response and crisis termination. At the end of the procedure the organization takes the feedback by the monitoring in order to improve the crisis management procedure and to be well prepared for a future crisis. (Goel 2009) (McConnell 2011)

1.6 Business Continuity Plan

Business Continuity Plan is the process in which an organization / enterprise creates systems of prevention and recovery to deal with potential threats and risks. It should

contain all of the critical information to ensure that the organization / enterprise is able to continue operating during an event of a crisis. (Snedaker and Rima 2014)

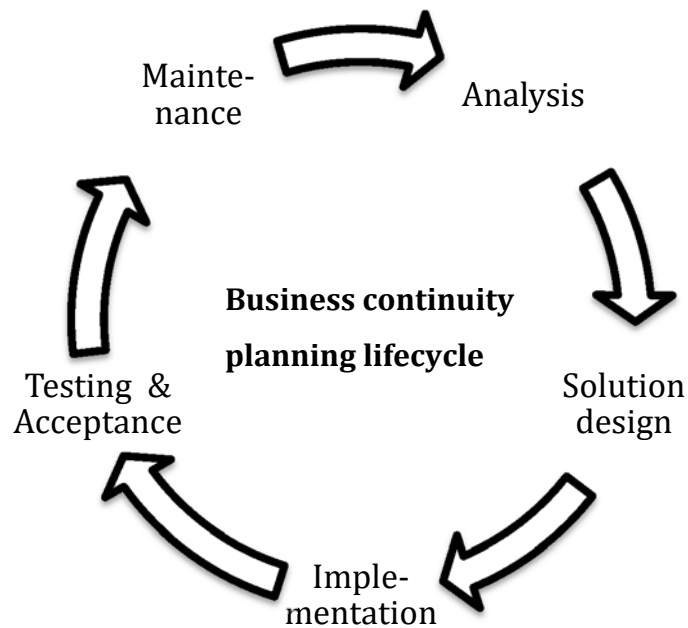


Figure 2: Business continuity planning lifecycle

A Business Continuity Plan (BCP) should contain the following elements:

- Initial data
- Revision management process
- Purpose and scope
- Guidelines for using the plan
- Policy information
- Emergency response and management
- Step-by-step procedures
- Checklists and flow diagrams
- Schedule for reviewing, testing and updating the plan

Chapter 2

Risk Management Models in Organizations & Enterprises

2.1 Model “Schraagen & van de Ven”

In 1997 Schraagen & van de Ven researched how the factor of educated and skilled staff, which are occupied with complicated and crucial events, contributes to the success of their task. They found that the staff members who had faced crucial events were better motivated, used better their skills and understood better the needs of the situation when they acted in a working group. On the other hand, they found that working groups were responsible for problems of coordination and conflicts between the members of a working group or between the working groups.

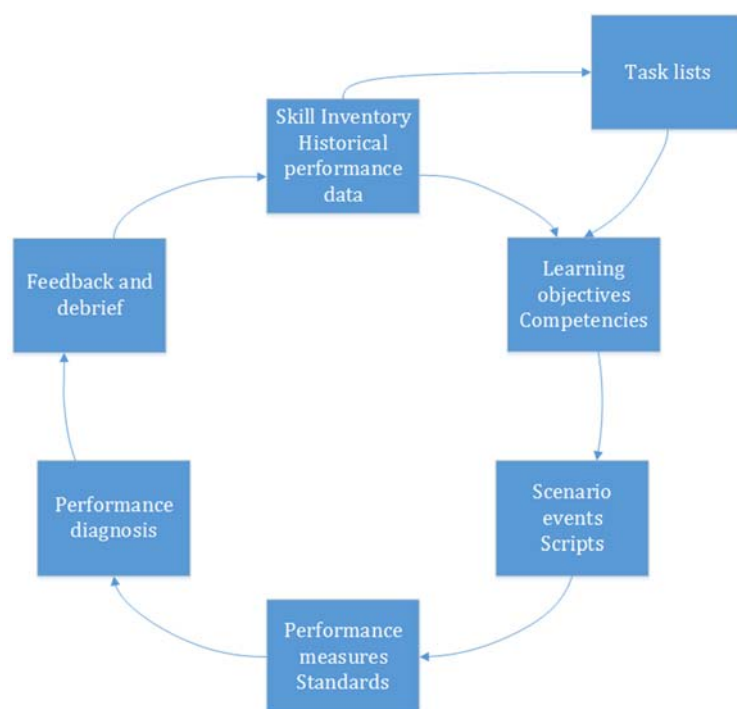


Figure 3: The EBAT framework, (Schraagen and van de Ven 2011)

In order to overcome the negative aspect of working groups, they proposed the “Event-Based Approach to Training” model, which promotes the assembly of temporary working groups during the crisis. The advantages of this approach are that firstly the members of these working groups are appropriately chosen for a specific situation in accordance with their skills, secondly there isn’t a specific person or group of people for all the situations of crisis and the organization / enterprise is not depended on them and finally the members of the temporary group are active members of the common operational procedure of the organization / enterprise and as a result they know better its needs and they feel more committed to its proper continuity. (Schraagen and van de Ven 2011, Gerontogiannis 2014)

2.2 Model “Siomkos & Kurzbard”

In 1994, Siomkos & Kurzbard researched the crisis which derived from the “faulty” products. They based their research in three factors; the reputation / image, the impact that was created from the interaction with the external regulatory bodies and media and the organizational structure. They claimed that the dependence on these three factors may not have allowed the organization / enterprise to be aware of some risks that may lead to crisis. In addition, these factors may obstruct the treatment of the crisis. According to “Siomkos & Kurzbard” model these three factors can give direction in order the company to face the crisis but they will not be enough for the creation of a risk management plan. (Siomkos and Kurzbard 1994, Gerontogiannis 2014)

The factor of reputation is crucial for the organization’s continuity since in a bad moment the organization can lose the trust of its clients and as a result put its continuity in danger. The organization should have the culture and the appropriate organizational structure in order to be prepared to identify risks that threaten its reputation and face in the right moment and quickly a possible crisis. (Coombs, Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory 2007)

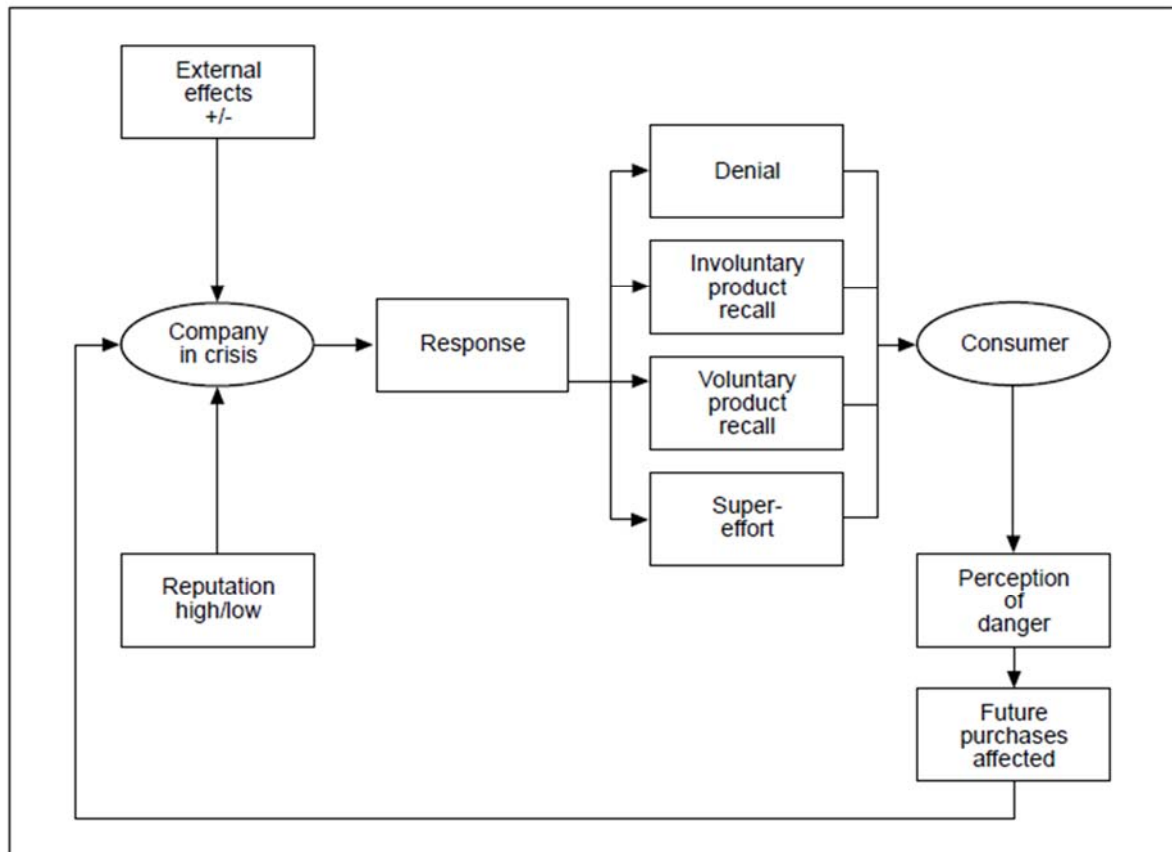


Figure 4: Model Analysis - "Faulty" products / services – "Siomkos & Kurzbard"

2.3 Model "Schwartz"

In 1999, Schwartz researched the factor of reputation of organization/enterprises from the perspective of knowledge, abilities and skills the leadership staff members have. At the moment of the research, the reputation of organizations /enterprises was more vulnerable than ever, because of the globalization. He claimed that reputation is one of the most important operational tools of the organization / enterprise and it takes a lot of time and effort to build it and only a bad moment to lose it. Schwartz supported that in order to maintain their good reputation, the organizations / enterprises should operate in the ethical sphere having their strategy as epicenter. He added that an organization, in order to be benefited from its employees, should take into account their values and their beliefs. In this way they will have an active role in an event of crisis instead of just executing only their daily duties and their aim will be to follow the operational culture and protect the reputation of the organization. (P. Schwartz 2000, Gerontogiannis 2014)

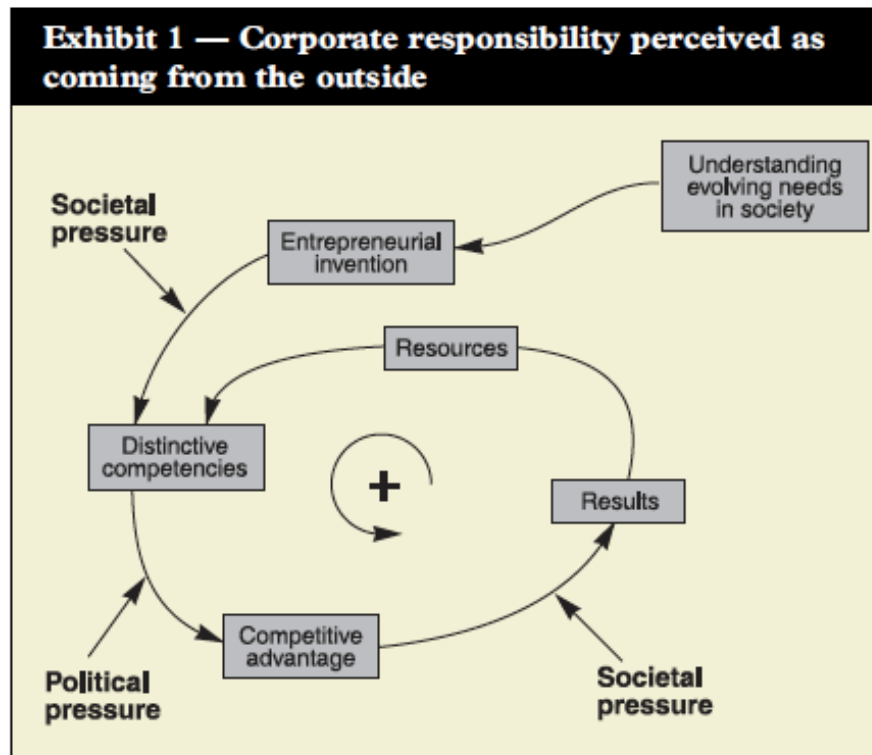


Figure 5: Reputation of Organizations / Enterprises - "Schwartz"

2.4 Model "Kash & Darling"

In 1995, Kash and Darling researched the dynamic environment of organizations / enterprises. They claimed that even though an organization / enterprise may have tried its very best and have done all the appropriate actions, it is inevitable not to face crises because of its environment. These crises may be intense and continuous. Most of the crises are not sudden, and thus the organization / enterprise should notice the "signs" in order to analyze and prioritize them. In addition, they should estimate their impact to the organization's operations and continuity.

Kash and Darling, as a solution, proposed a methodological approach which has three steps. The 1st is the evaluation of data in order to understand the magnitude of the crisis. The 2nd is the analysis and the visualization of crisis with schematics and the 3rd is the application of measures where it is necessary.

This method helps the organizations / enterprises to prevent possible crises, to be prepared to face a crisis and to react on time in order to face it. These elements reduce the negative consequences. (Kash and Darling 1998)

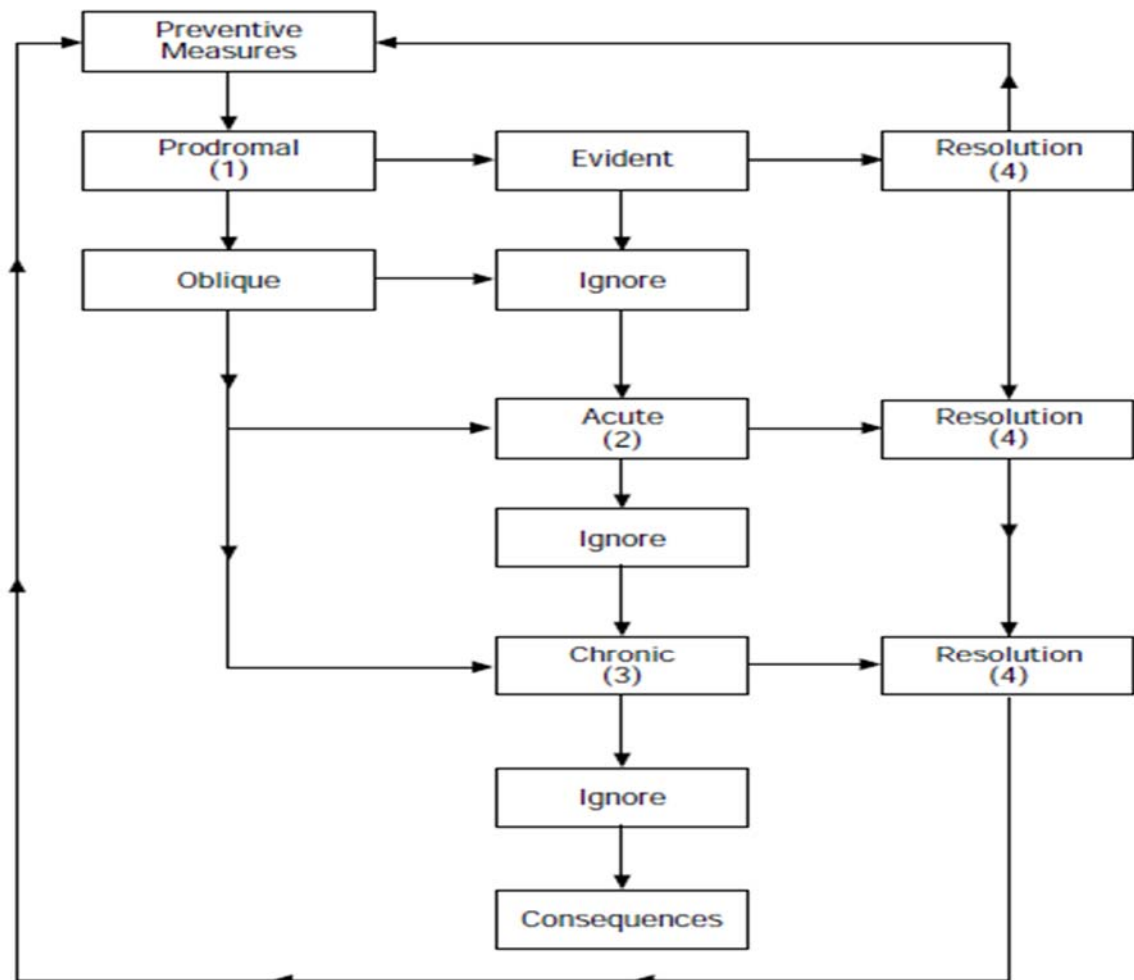


Figure 6: Dynamic Environment of Organizations / Enterprises - "Kash & Darling"

2.5 Model "Sapriel"

In 2003, Sapriel researched the factor of "approach" in the crisis management because it is an inseparable part of emergency planning and accordingly it is part of the business strategy. She adds that crisis management is no longer only an objective of corporate communication. In order an organization / enterprise to come up against all the risks it may face, effective crisis management should be the objective of top management. The high hierarchy should provide the orders and the directions which need to be applied by all the basic operational functions. To ensure a quick reaction, there are suitable processes and tools. The basic conclusion of this model is that the crisis management is a basic element of corporate strategy. (Sapriel 2003)

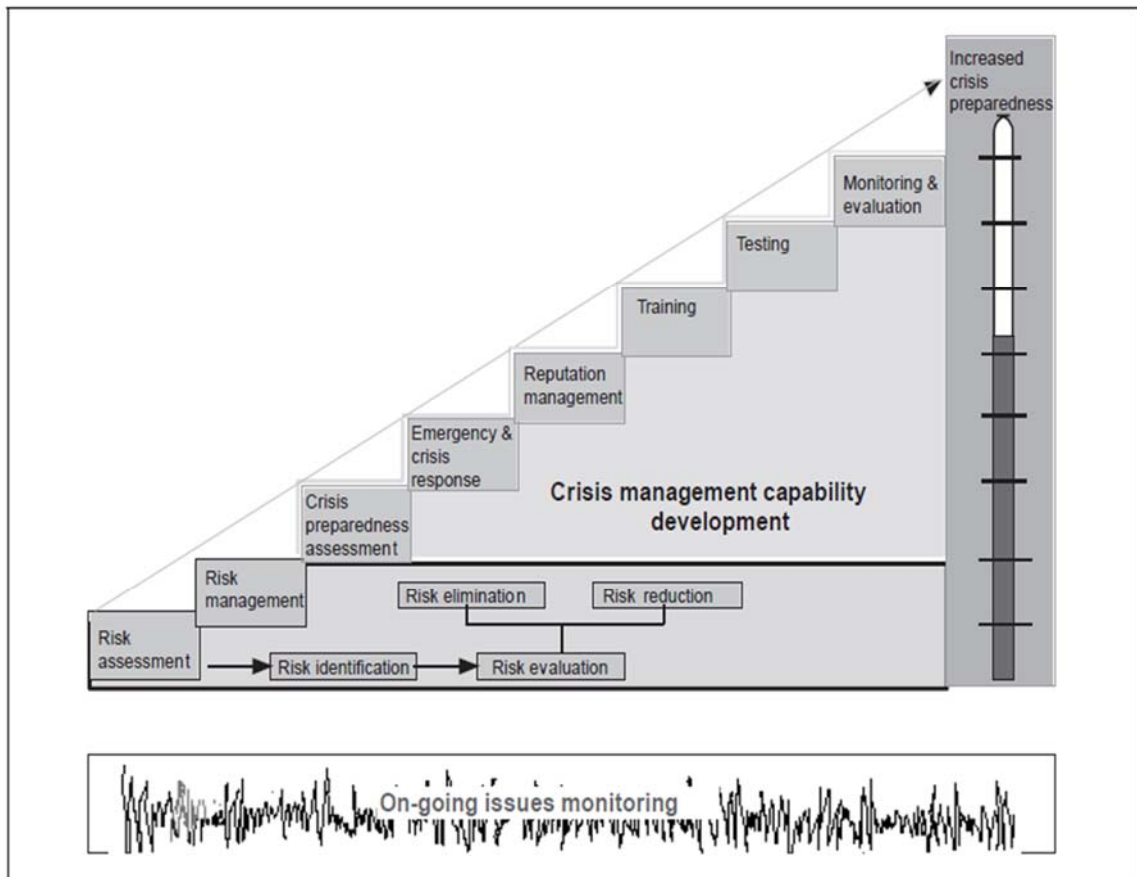


Figure 7: Contingency planning in the "Strategy" of Organizations / Enterprises - Sapriel

2.6 Model "Gerontogiannis, D"

In 2014, Gerontogiannis researched the role of "functional routine" through interaction of "actions", "strategies" and "resources" in the modern organizations / enterprises. He claimed that organizations / enterprises should give a more strategic focus in the management of crisis and conflicts. They should focus on the various dimensions of organizational structure, education (culture) and business strategy and in the way the previous dimensions affect the management mechanism about the crisis / conflict. He proposed the formation of a structured set of processes, which forms an actuation system for organizations / enterprises, in order to face the crisis. He supports that the crisis management framework is not a one-dimensional context. It is a different, dynamically determined dimensional which is derived from a "functional routine" which is influenced by different "actions", "strategies" and "resources". The capabilities / skills of individuals or groups to undertake crisis management, the choices of actions for crisis management and the chosen management strategies, either before or during an event crisis, form this context.

Regarding this framework, he claims that in order to be functional the capacity that presents should be checked in the two levels so that the anticipated results in organizations / enterprises to occur.

The first level is characterized by the existence (or not) of “abilities / skills”, “strategies” and “resources” in addressing crises by organizations / enterprises and it is constituted by the three dimensions below:

1. The dimension of “responsibilities and compliance of an effective operational framework”. This dimension focuses on the abilities / skills of individuals or group of individuals which manage the crisis.
2. The dimension of “existence of strategies” which focuses on the strategic options for the handle of crisis.
3. The dimension of “actions” focuses on the implementation of the strategic options in order to act for the crisis response.

The second level is characterized by the fact that an organization /enterprise, while it is managing of crisis it also redefines “organizational elements”, “the strategies” and “the managing of efficiency and is constituted by two dimensions:

1. The dimension of “the continuation of the effective functioning of the organization / enterprise framework” focuses on realigning elements in order to maintain (or increase) the efficiency and operational process.
2. The dimension of “the re-organization of the agency / enterprise” focuses on increasing the resilience and the social or market reality

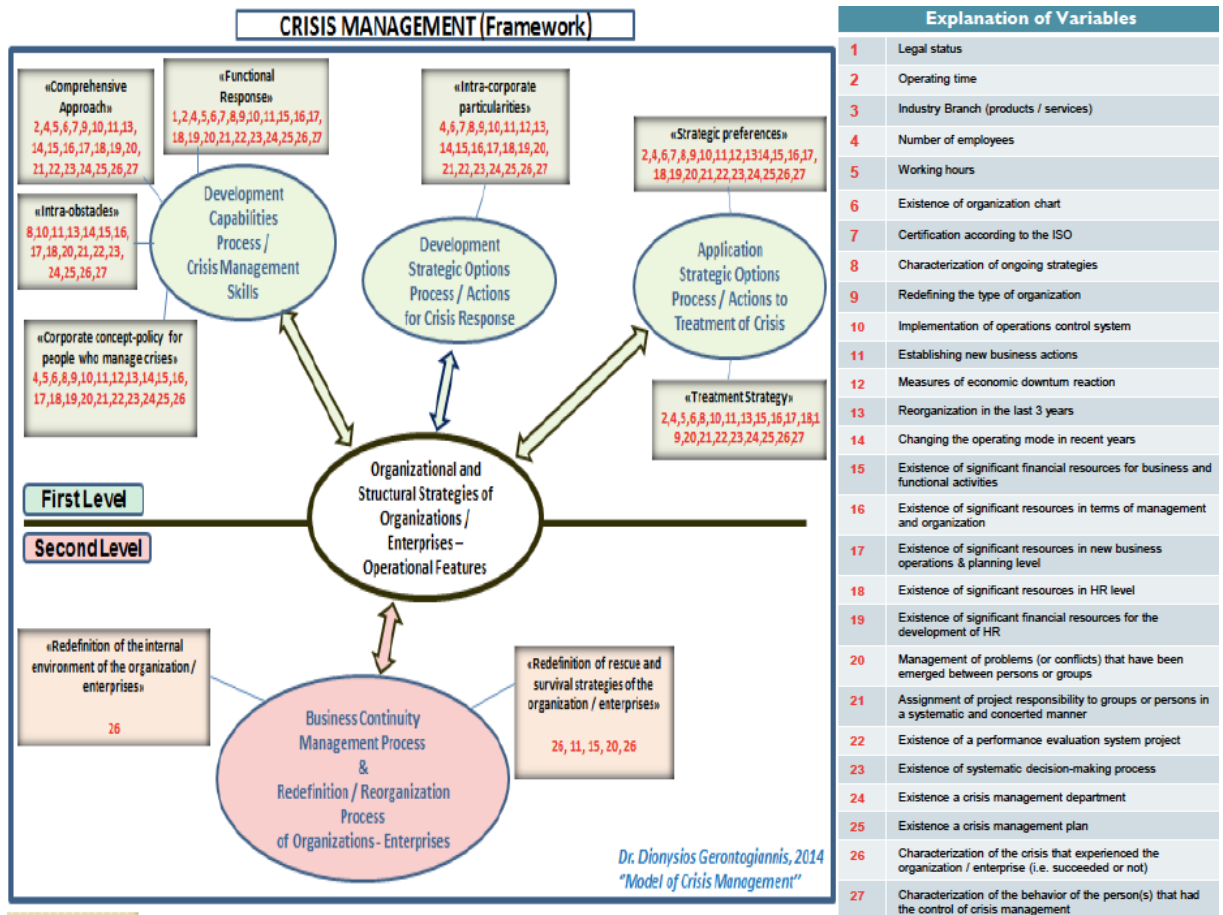


Figure 8: Crisis Management (Framework) - "Gerontogiannis, D"

Chapter 3

Qualitative & Quantitative Research

3.1 Research Methodology

In this research the methodology which Mark Saunders proposes was followed (Saunders, Lewis and Thornhill 2009). For the qualitative research a questionnaire was designed, in order to be used for interviews in a sample of management staff of Greek organizations / enterprises. The aim of these interviews was to understand, in a general framework, what actions do the Greek Organizations / Enterprises take to forecast eventual risks, in what extend they include risk management policy in their general strategic plan, how often they face crises and if the companies have specific departments or working groups for risk management. The second part of the questions concerned the reaction of the organizations / enterprises during a crisis they faced. We researched which steps they followed, if they made working groups, if the existing managing structure was the appropriate to face the crisis or changes needed to be done, which operation factors contribute to the treatment of crisis or seemed to be more important and crucial, which factors of human resources was the most important and crucial during the crisis. The last part of the questions aimed to show us the changes that organizations / enterprises made in order to face the crisis or as a result of the crisis and the intent to face better and efficiently future risks and crises. The 10 interviewees were members of Greek Organizations / Enterprises with different general characteristics (such as legal form, production sector, operation years) in order to have a general view and to form the questionnaire quantitative research in an appropriate way.

For the quantitative research, a questionnaire of 60 multiple choice questions was formatted. The first part of questions was about the general characteristics of the

organization / enterprise and it aimed to help us understand the actions which take Greek organizations / enterprises in order to forecast risk and to face possible crises. The second part showed us the behavior of the organization / enterprise during a crisis and it focused on the operational factors (organizational, strategic & human resources) which contribute to the treatment of the crisis and the continuity of the organization / enterprise. The last part was constituted by questions which researched the consequences of the crisis to the organization / enterprise and the actions they took in order to avoid future risks and crises.

In order to have a reliable sample, 800 Greek organizations / enterprises were chosen and received through e-mail an online questionnaire. The type of online questionnaire was chosen as more approachable and easy to be answered by management staff members who during their daily routine have not free time. I received 214 answers of which 134 individuals had managed a crisis, as we can see in Table 2.

Companies which managed a crisis in the past

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	134	62.6	62.6	62.6
	No	80	37.4	37.4	100.0
	Total	214	10.0	100.0	

Table 2: Companies which have managed crisis in the past

3.2 Research Questions

The research questions are as follows:

- Which factors of operational risk management contribute to the organizational continuity after changes have happened?

From the qualitative research we saw that some factors tend to contribute to the continuity of the organization / enterprise after a crisis. Through the analytic questions of the quantitative research we aim to confirm them and analyze in which way they help the organization / enterprise.

- Which is the role of the organization's structure?

It is known that a proper and functional organizational structure leads the organization /enterprise to success. Through our research we aim to find the

factors of organization's structure which contribute to the continuity of the organization / enterprise after a crisis.

- Which is the role of the leadership?

The interviewees of the qualitative research gave emphasis to the importance of ambitious and committed leadership. So we will research which factors of leadership help the organization/ enterprise to recover from a crisis.

Chapter 4

Research Analysis

4.1 Analysis of General Business Characteristics – Full sample

In this section the general characteristics of the businesses that took part in the research will be displayed and commented on.

	Legal Form			Cumulative Percent
	Frequency	Percent	Valid Percent	
S.A. Company	165	77.1	77.1	77.1
Limited Liability Company	17	7.9	7.9	85.0
Limited Partnership Company	9	4.2	4.2	89.3
Unlimited Partnership Company	6	2.8	2.8	92.1
Public Corporation	2	.9	.9	93.0
Non-Governmental Organization	4	1.9	1.9	94.9
Group of Companies	3	1.4	1.4	96.3
International Organization	8	3.7	3.7	100.0
Total	214	100.0	100.0	

Table 3: Legal form of business for full sample

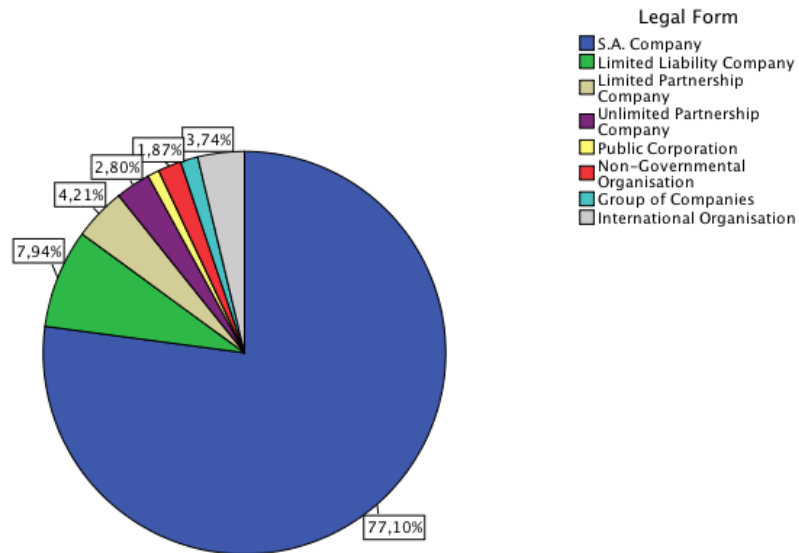


Figure 9: Legal form of business for full sample

While we reached out to wide range of different types of organizations / enterprises, as it shown in Table 3 and Figure 9, S.A companies had the biggest interest (77.10% of the answers) about the research. This probably happened because S.A. Companies tend to be bigger and they follow Risk Management Strategies.

Production Sector

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Product Production	60	28.0	28.0	28.0
	Services	107	50.0	50.0	78.0
	Both	47	22.0	22.0	100.0
	Total	214	100.0	100.0	

Table 4: Production sector for each company for full sample

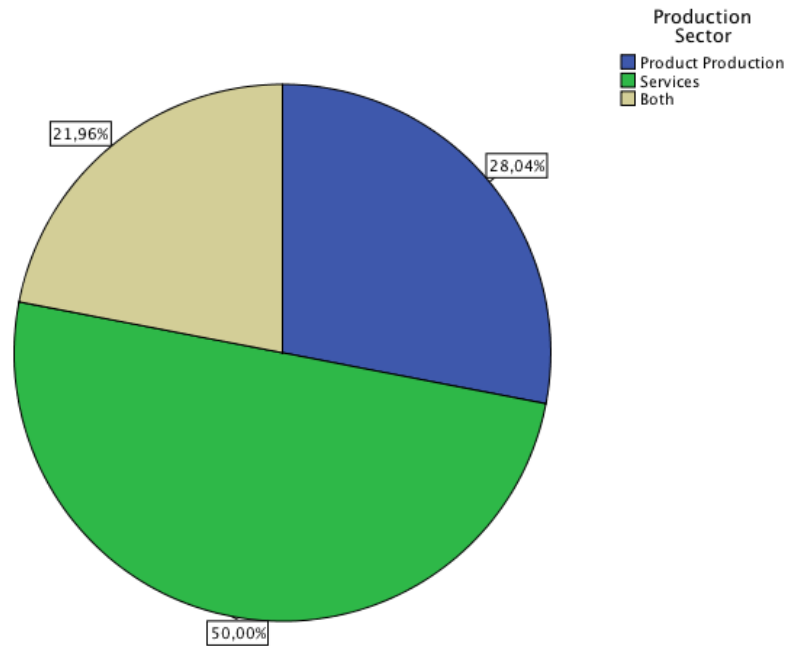


Figure 10: Production sector for each company for full sample

The most answers came from organizations / enterprises from the sector of services (50%) (Table 4 and Figure 10).

Operation Years

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	4	1.9	1.9	1.9
	1-10 years	30	14.0	14.0	15.9
	11-20 years	33	15.4	15.4	31.3
	21-30 years	46	21.5	21.5	52.8
	31-40 years	29	13.6	13.6	66.4
	41-50 years	13	6.1	6.1	72.4
	More than 50 years	59	27.6	27.6	100.0
	Total	214	100.0	100.0	

Table 5: Operation years for each company for full sample

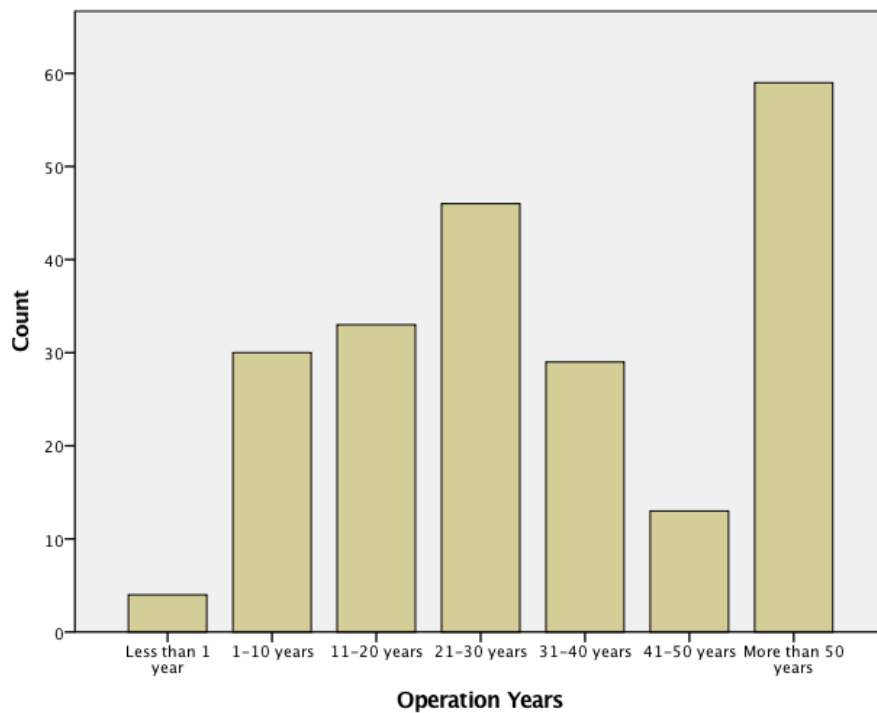


Figure 11: Operation years for each company for full sample

About the research (Table 5 and Figure 11), organizations / enterprises which operate more than 50 years were very interested (27.6%), although it is noticed that relatively new organizations / enterprises (up to 30 years old) are also interested about risk management (52.8%). Finally, a negative aspect is that there aren't enough answers from brand new companies (less than 1-year-old). That may have happened because there weren't enough young companies in the sample because of the financial crisis.

ISO Certified Company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	161	75.2	75.2	75.2
	No	53	24.8	24.8	100.0
	Total	214	100.0	100.0	

Table 6: Number of companies that are ISO certified (full sample)

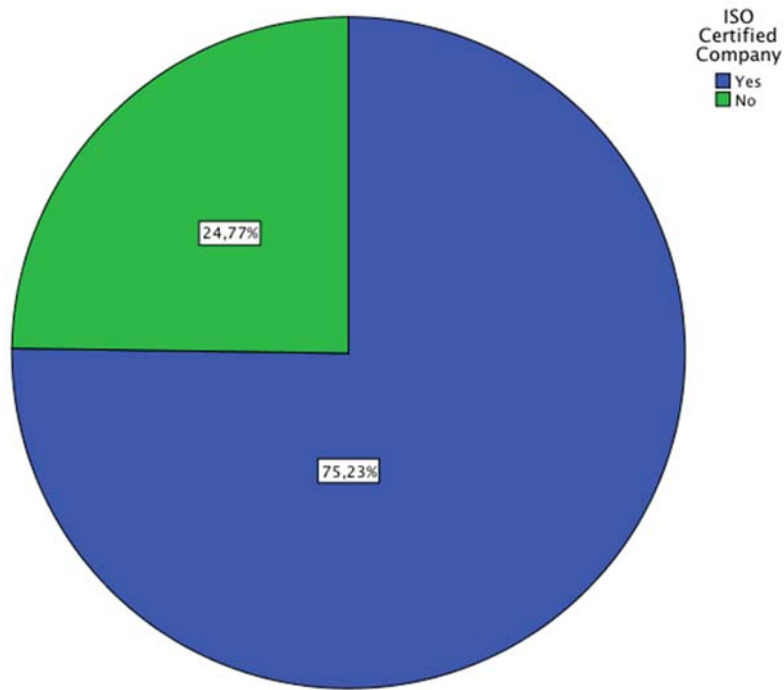


Figure 12: Number of companies that are ISO certified (full sample)

A positive aspect is that the vast majority of organizations (75.23%) are ISO certified. (Table 6 and Figure 12)

Number Of Employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-9	22	10.3	10.3	10.3
	10-49	51	23.8	23.8	34.1
	50-249	64	29.9	29.9	64.0
	250 and more	77	36.0	36.0	100.0
	Total	214	100.0	100.0	

Table 7: Number of employees in each company (full sample)

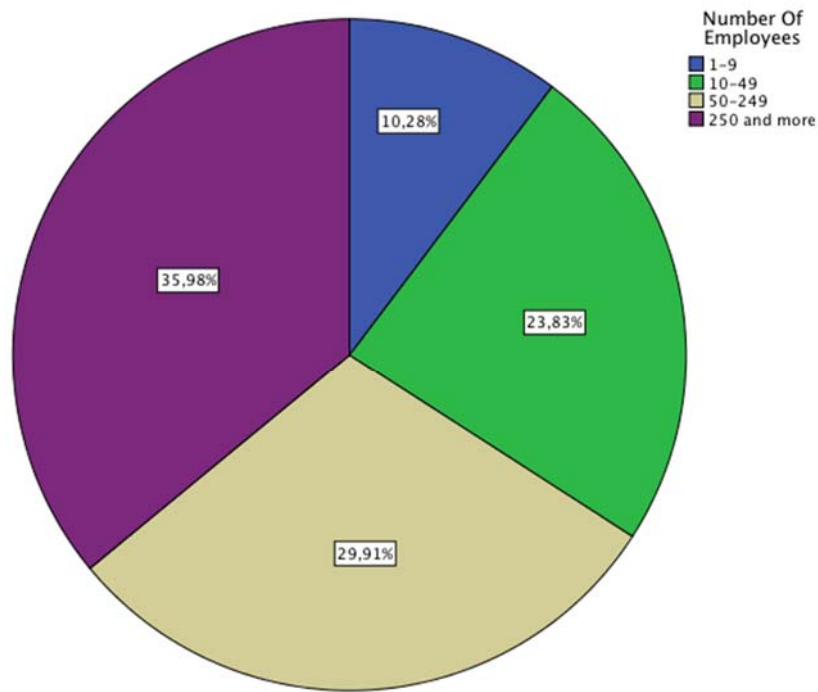


Figure 13: Number of employees in each company (full sample)

The majority of the people (65.89%), that participated to the research (Table 7 and Figure 13), work in big organizations / enterprises (more than 50 employees). The big companies tend to apply Risk Management Strategies and, in addition, they face more crises.

Organization Chart

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	196	91.6	91.6	91.6
	No	18	8.4	8.4	100.0
Total		214	100.0	100.0	

Table 8: Companies that have organization chart

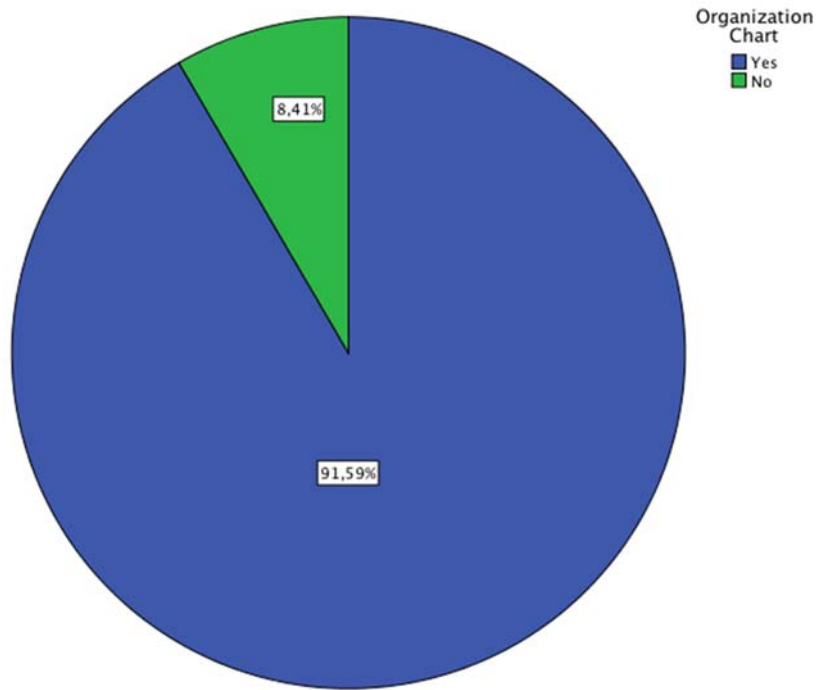


Figure 14: Companies that have organization chart

Almost all companies (91.59%) operate with an organization chart, but there are still companies (8.41%) which do not have one, (Table 8 and Figure 14).

Organization Chart Usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fully used	119	55.6	60.7	60.7
	Partly used	72	33.6	36.7	97.4
	Not used	5	2.3	2.6	100.0
	Total	196	91.6	100.0	
Missing System		18	8.4		
Total		214	100.0		

Table 9: Organization chart usage (for the 196 cases there is one)

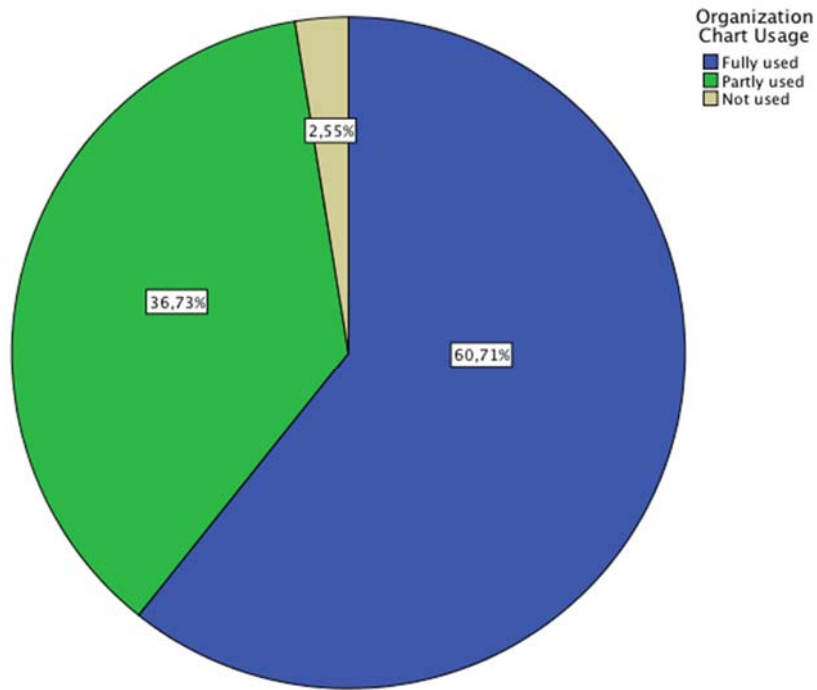


Figure 15: Organization chart usage (for the 196 cases there is one)

Although almost all the companies have an organization chart, only 60.71% of them fully use it (Table 9 and Figure 15). This shows problems in the management procedure and that the companies don't take advantage of all of their recourses.

Clear Allocation Of Duties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	153	71.5	71.5	71.5
	No	61	28.5	28.5	100.0
	Total	214	100.0	100.0	

Table 10: Allocation of duties (full sample)

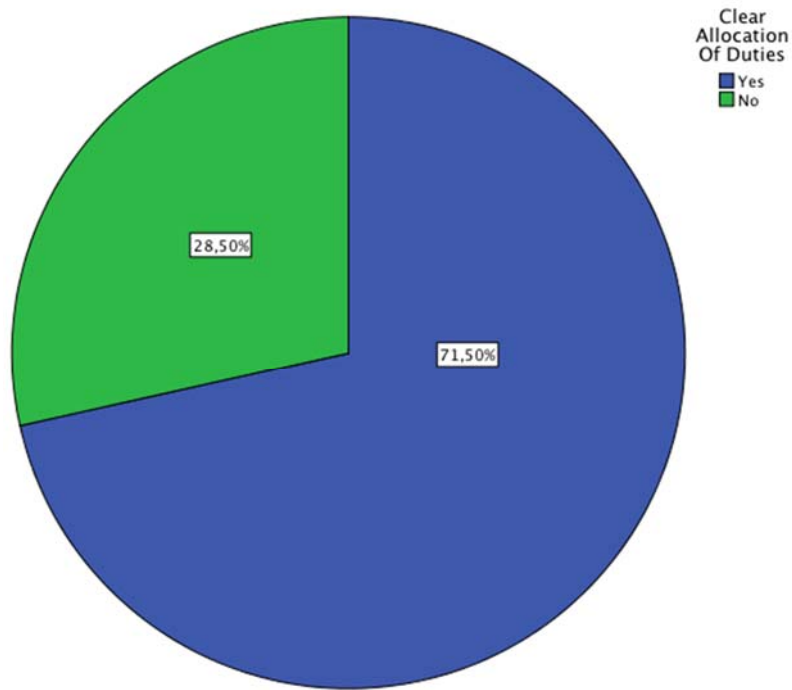


Figure 16:Allocation of duties (full sample)

The most of the staff members (71.50%) who participated in the research consider that the allocation of duties is clear (Table 10 and Figure 16). On the other hand, there is an important amount of employees (28.50%) which is not satisfied by the allocation of duties.

Risk Management Plan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	142	66.4	66.4	66.4
	No	72	33.6	33.6	100.0
	Total	214	100.0	100.0	

Table 11: Companies which have a risk management plan

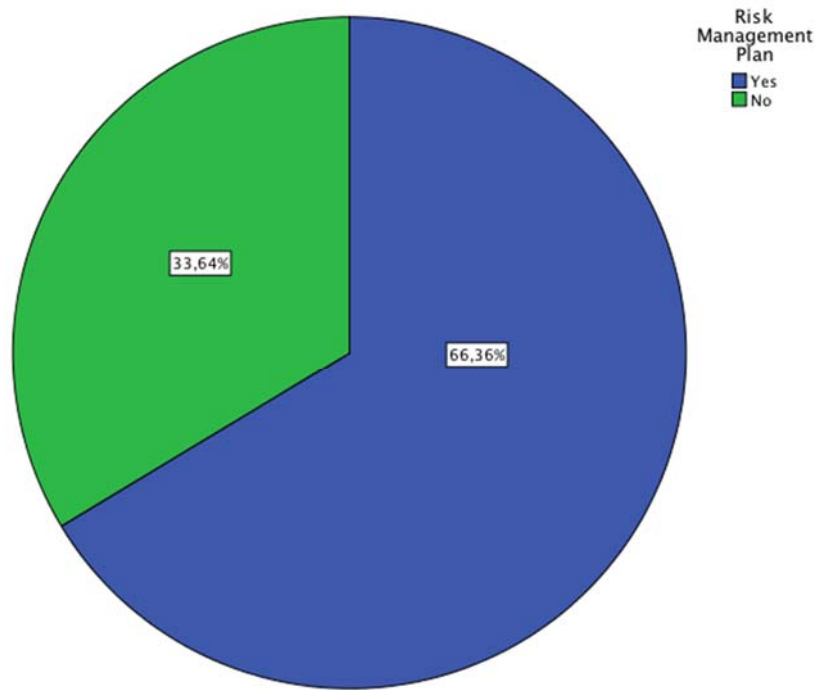


Figure 17: Companies which have a risk management plan

From Table 11 and Figure 17 we see that 33.64% of the organizations / enterprises do not have Risk Management Plan. This fact shows that one-third of them are not prepared to face a crisis.

Risk Management Department

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	70	32.7	32.7	32.7
	No, but working groups are created when there is a risk	79	36.9	36.9	69.6
	No	65	30.4	30.4	100.0
Total		214	100.0	100.0	

Table 12: Risk management department (full sample)

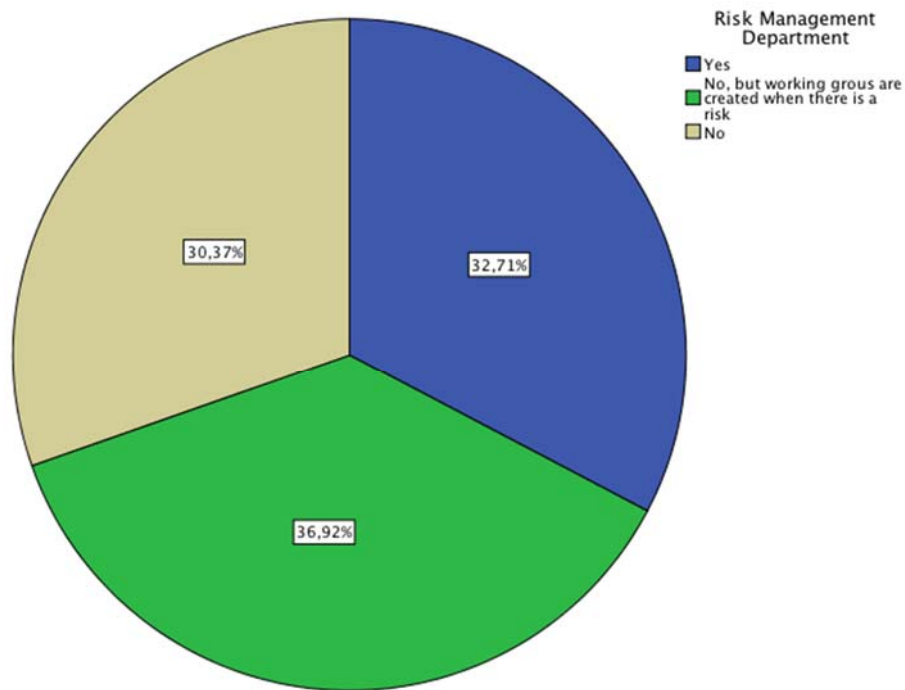


Figure 18: Risk management department (full sample)

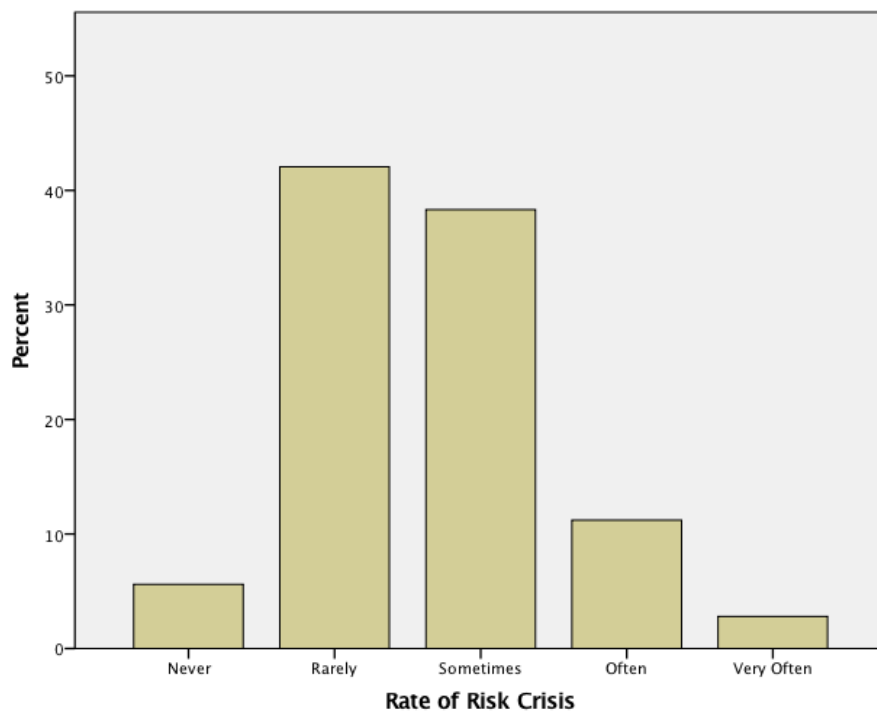


Figure 19: Frequency with which each company faces a crisis (full sample)

According to the research, only the one-third of the organizations / enterprises has a Risk Management Department and only half of those which do not have a Risk Management Department create working groups when there is a risk. So one-third of the organizations / enterprises does not have an organized team when it faces a crisis.

Figure 17 and Figure 18 show that organizations and enterprises are not familiar with Risk Management and the organizational factors that contribute to the continuity of a company after a crisis. Although, in Figure 19 we see that the most of the organizations claim that they do not face often risks.

		Business Activity			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ambitious	62	29.0	29.0	29.0
	Appropriate	83	38.8	38.8	67.8
	Sufficient	42	19.6	19.6	87.4
	Modest	23	10.7	10.7	98.1
	Inadequate / poor	4	1.9	1.9	100.0
	Total	214	100.0	100.0	

Table 13: Business Activity (full sample)

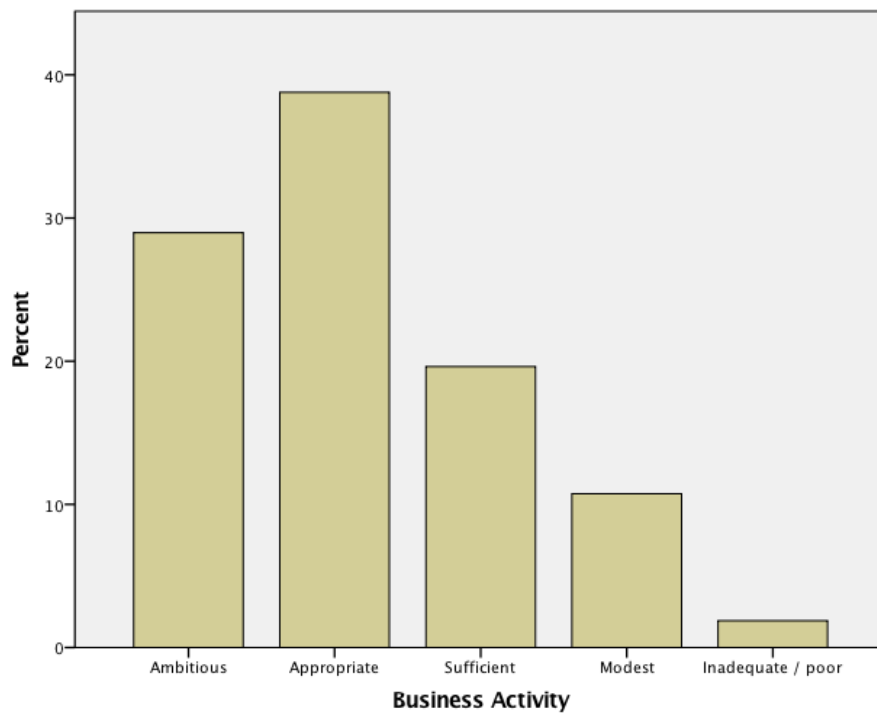


Figure 20: Business activity (full sample)

In Table 13 and Figure 20 we see that a big portion of the sample (29%) believes that the business activity is ambitious according to the economic conditions and the competition. This fact shows that a lot of organizations and enterprises overrate their abilities and do not estimate appropriately the environmental conditions and risks.

Management Control System

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, for every activity	97	45.3	45.3	45.3
	Only for certain activities	105	49.1	49.1	94.4
	No	12	5.6	5.6	100.0
Total		214	100.0	100.0	

Table 14: Management control system (full sample)

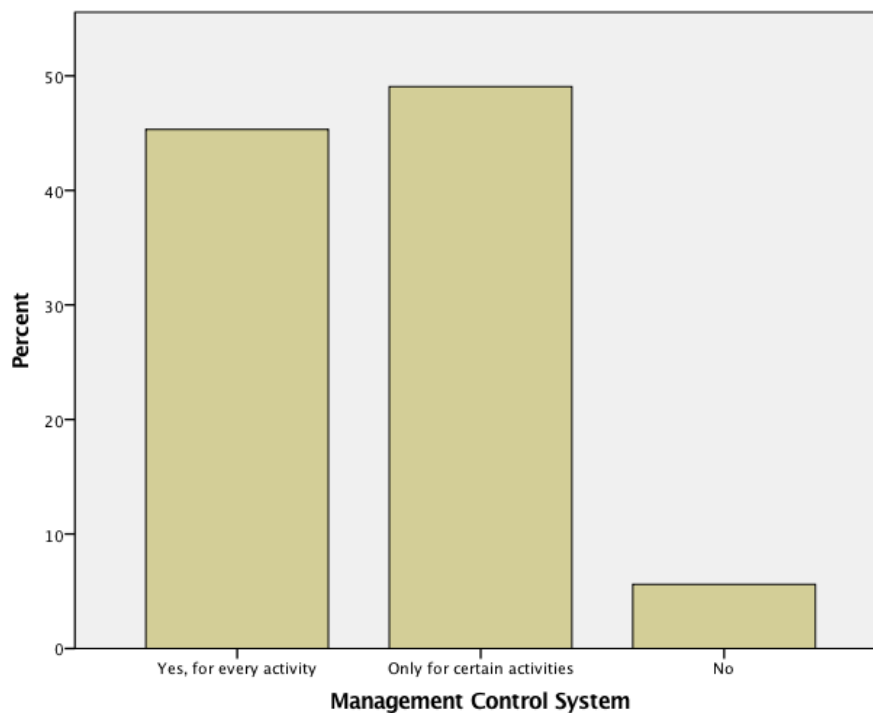


Figure 21: Management Control System (full Sample)

In Table 14 and Figure 21 we see that almost half (49.1%) of the organizations / enterprises choose to have management control systems only for certain activities. This shows that they do not follow a holistic management policy for the control of their systems and they do not have the culture to control every activity and to take feedback in order to change or to modify procedures and policies.

Importance of Management Process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	8	3.7	3.7	3.7
	Important	54	25.2	25.2	29.0
	Very Important	152	71.0	71.0	100.0
	Total	214	100.0	100.0	

Table 15: Importance of management process in regard to the organization's / enterprise's financial recourses (full sample)

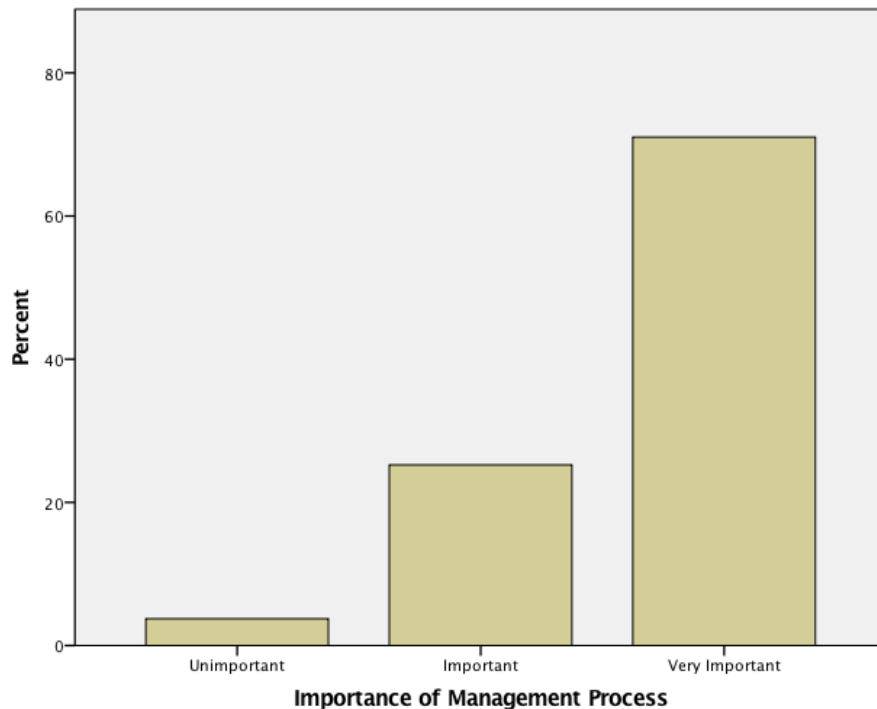


Figure 22: Importance of management process in regard to the organization's / enterprise's financial recourses (full sample)

In Table 15 and in Figure 22 we see that the most organizations / enterprises (71%) believe that management process is very important and they spend financial resources about this. This fact is very positive, as it shows that organizations / enterprises appreciate the role of management process and they try to improve it.

Importance of Human Recourses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	20	9.3	9.3	9.3
	Important	83	38.8	38.8	48.1
	Very Important	111	51.9	51.9	100.0
	Total	214	100.0	100.0	

Table 16: Importance of human recourses in regard to the organization's / enterprise's financial recourses (full sample)

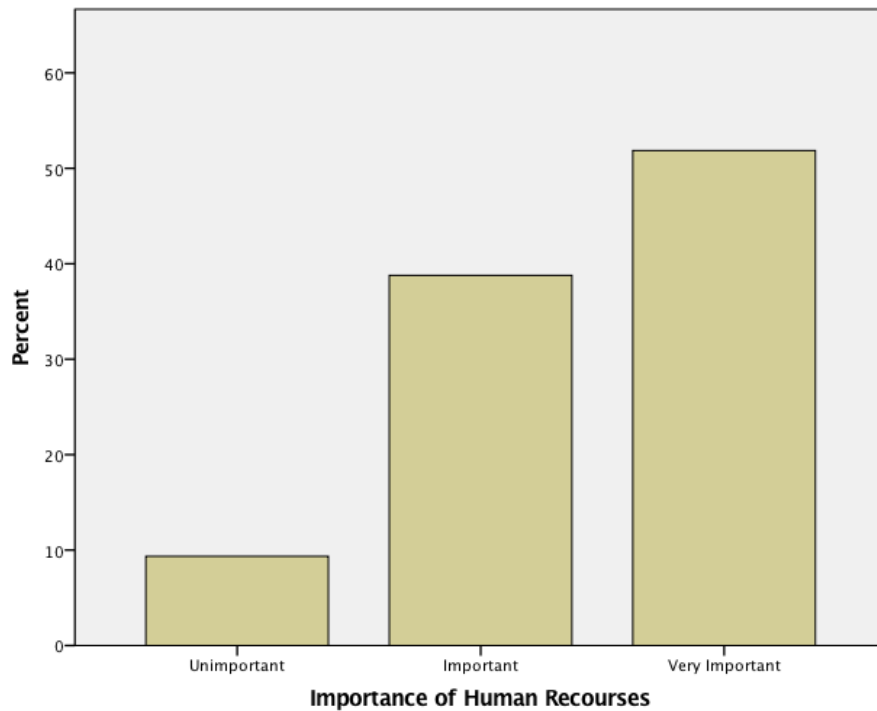


Figure 23: Importance of human recourses in regard to the organization's / enterprise's financial recourses (full sample)

In Table 16 and in Figure 23 we see that most of the organizations / enterprises believe that the factor of human recourses is at least important (38.85) and for the most of them (51.9%) is very important. So they spend financial resources for its development. A negative fact is that some organizations/ enterprises (9.3%) do not understand its necessity.

Motives of Human Recourses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unimportant	46	21.5	21.5	21.5
	Important	95	44.4	44.4	65.9
	Very Important	73	34.1	34.1	100.0
	Total	214	100.0	100.0	

Table 17: Motives of human recourses (full sample)

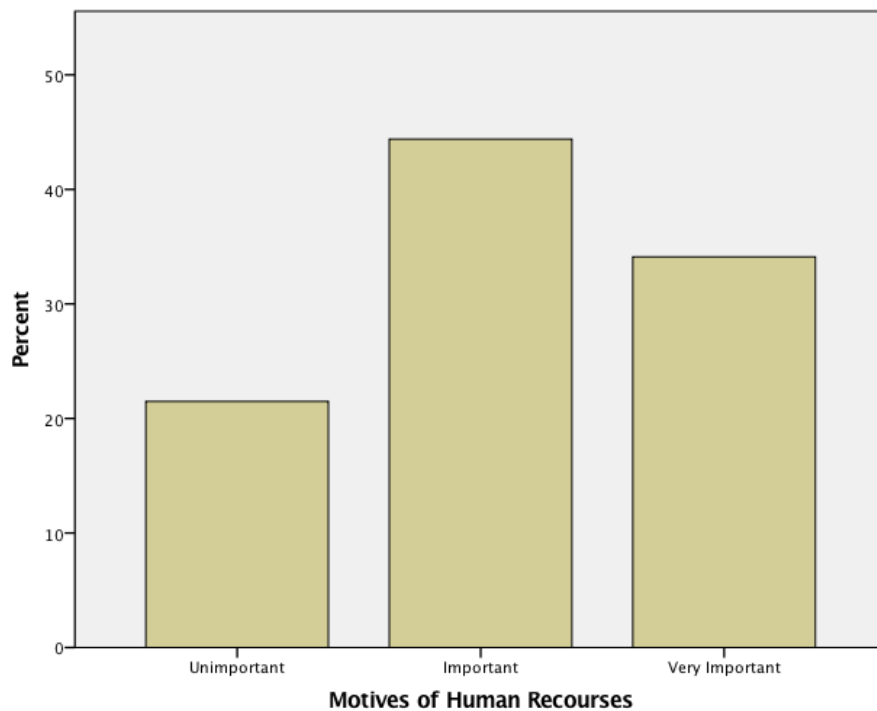


Figure 24: Motives of human recourses (full sample)

In Table 17 and in Figure 24 we see that the most of organizations / enterprises (65.9%) do not consider very important the motivation of human recourses and the 21.5% of them think it is unimportant. So, although they understand the importance of human recourses, they do not do the necessary actions in order to provide motives to their employees.

Problem Solving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Important	20	9.3	9.3	9.3
	Important	76	35.5	35.5	44.9
	Very Important	118	55.1	55.1	100.0
	Total	214	100.0	100.0	

Table 18: Problem solving (full sample)

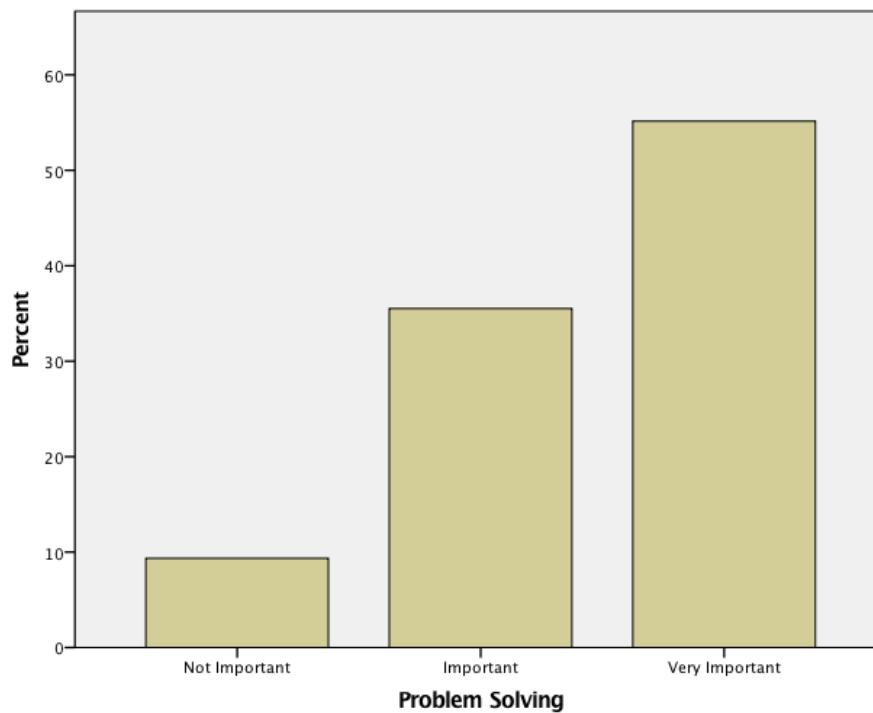


Figure 25: Problem solving (full sample)

Table 18 and Figure 25 show us that the most organizations / enterprises think that problem solving is very important (55.1%). On the other hand, there are some organizations / enterprises (9.3%) that do not care about the solution of their problems something that might probably make difficult their proper operation.

Human Recourses Efficiency Control Systems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	135	63.1	63.1	63.1
	No	79	36.9	36.9	100.0
	Total	214	100.0	100.0	

Table 19: Human recourses efficiency control systems (full sample)

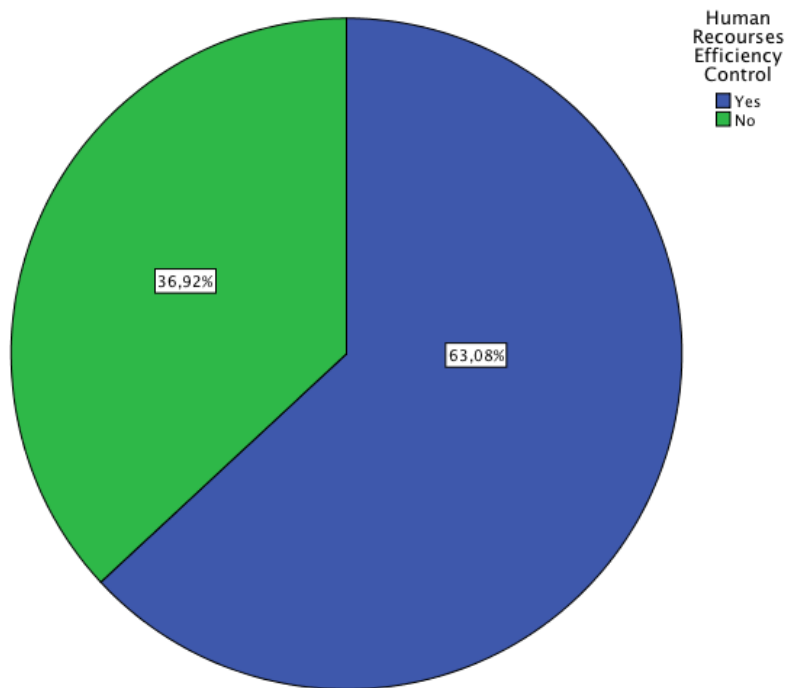


Figure 26: Human recourses efficiency control systems (full sample)

As far as human recourses efficiency control systems is concerned, the most organizations / enterprises (63.08%) apply them, as we see in Table 19 and Figure 26. However, there are a lot of organizations / enterprises (36.92%) that do not apply control systems about human recourses efficiency and in this way they lose the opportunity to improve this important factor.

Development of Working Groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, for every activity and are supported	64	29.9	29.9	29.9
	Only for specific activities and are supported	95	44.4	44.4	74.3
	Only for specific activities but are not supported	39	18.2	18.2	92.5
	No	16	7.5	7.5	100.0
Total		214	100.0	100.0	

Table 20: Development of working groups (full sample)

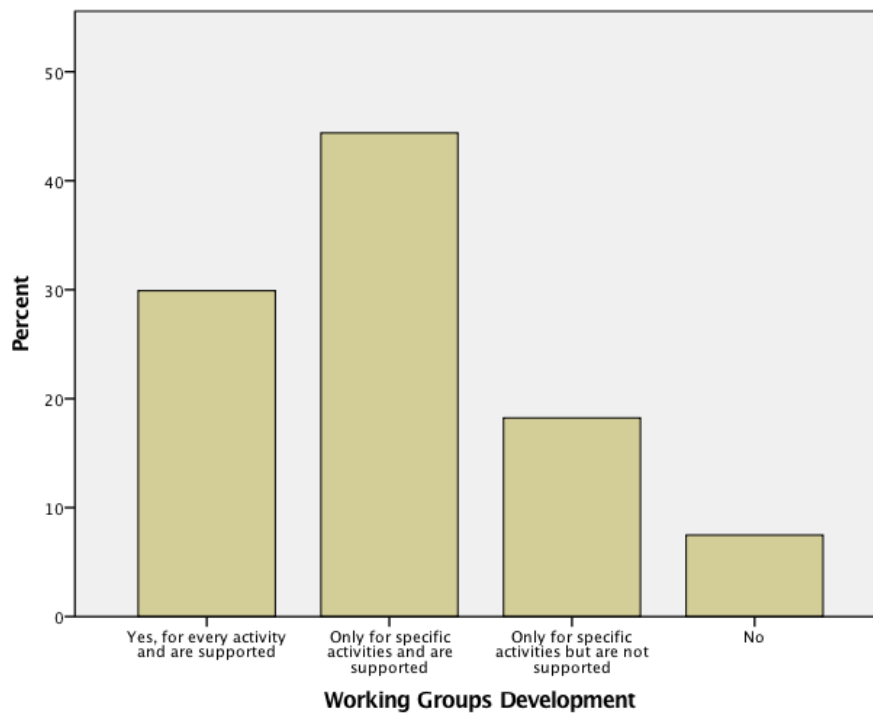


Figure 27: Development of working groups (full sample)

In Table 20 and in Figure 27 we see that organizations / enterprises tend to develop working groups for specific activities and they supported (44.4%). A big percentage (29.9%) has working groups for every activity. These facts are very positive as they show that organizations/ enterprises understand the importance and the advantages of group work.

4.2 Analysis of management and strategic factors

From 214 answers 134 individuals had managed a crisis. The individuals who managed crisis were asked how they would describe the management of the crisis they handled. They had five possible answers (unsuccessful, almost unsuccessful, somewhat unsuccessful, successful enough and successful). None of them found the result unsuccessful and, as we see in Table 21, 107 individuals claimed that the organization / enterprise handled the crisis successfully enough or successfully.

Management of the Crisis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Almost unsuccessful	3	1.4	2.2	2.2
	Somewhat Successful	24	11.2	17.9	20.1
	Successful enough	66	30.8	49.3	69.4
	Successful	41	19.2	30.6	100.0
	Total	134	62.6	100.0	
Missing	System	80	37.4		
Total		214	100.0		

Table 21: Success of the crisis's management (for the 134 cases there was one)

In Table 22, 16 human resources factors are analyzed. In the questionnaire we had 16 questions and the answers were in a Likert scale (not at all, little, somewhat, much & very much). In this table we analyze the answers of the 107 individuals who faced successfully the crisis. The aim is to show which of these factors were evident during the crisis management in relation to a successful result. "Evident" column represents the cumulative percent of the answers "much" and "very much", whereas the "non evident" column that of the answers "little" and "not at all", for each of the questions.

HUMAN RESOURCES FACTORS		
	Evident (%)	Non Evident (%)
Efficient allocation of duties	61.7	10.2
Clear and comprehensible allocation of duties	56.0	14.9
Correct time management	56.1	15.0
Trend to taking power	21.5	56.1
Leading trends	49.6	15.8
Effective communication among the group members	66.4	12.1
Effective communication among the departments	60.7	12.2
Effective coordination among the group members	73.8	11.2
Effective coordination among the departments	62.7	14.0
Beneficial alliances among the group members	63.5	9.4
Competitiveness among the group members	15.9	57.0

Conflict of interests among the group members	9.3	68.2
Sufficient number of group members	41.1	22.5
Incentives for the group members	25.3	37.4
Effective control of group members	49.6	18.7
Rewards to the group members	29.0	38.3

Table 22: Human resources factors

Table 22: shows in what extend each of these factors existed in the organizations / enterprises during the crisis. In these organizations there was (in a high rate) efficient allocation of duties, clear and comprehensible allocation of duties, correct time management, effective communication among the group members, effective communication among the departments, effective coordination among the group members, effective coordination among the departments and beneficial alliances among the group members, whereas factors as trend to taking power, competitiveness among the group members and conflict of interests among the group members in a high rate were non evident. Consequently, the factors of communication, coordination, clear allocation of duties and alliances are very crucial for the continuity of the organizations / enterprises after a crisis.

On the other hand, it is noticed that leading trends, while are important, could have been evident in a higher rate. The relative absence of this factor (leading trends) could be perhaps attributed to the hesitation Greek staff members have to take initiatives and the fact that they are used to follow directives. It is also clear that a sufficient number of group members is important but it could be more evident. This happens because as we show in Figure 17 and Figure 18 the Greek organizations / enterprises are not prepared about a crisis. Another characteristic we see is that in the organizations / enterprises which continue successfully their operation after the crisis there was effective control of group members but incentives for the group members were not given. In addition, the group members were not rewarded after the successful treatment of the crisis so in a future crisis they will not be motivated. This shows that the organizations / enterprises even after a crisis they do not care about the next possible crisis and do not motivate the staff to face the next crisis with the same degree of success.

Current Business Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Appropriate	62	57.9	57.9	57.9
	It needs changes	42	39.3	39.3	97.2
	Not appropriate	3	2.8	2.8	100.0
	Total	107	100.0	100.0	

Table 23: Current business strategy

Business Strategy contribution to the Risk Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	1	.9	.9	.9
	Little	5	4.7	4.7	5.6
	Somewhat	24	22.4	22.4	28.0
	Much	58	54.2	54.2	82.2
	Very much	19	17.8	17.8	100.0
	Total	107	100.0	100.0	

Table 24: Business strategy contribution to the risk management

Revision of Business Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
	Not at all	13	12.1	12.1	12.1
	Little	13	12.1	12.1	24.3
	Somewhat	34	31.8	31.8	56.1
	Much	31	29.0	29.0	85.0
	Very much	16	15.0	15.0	100.0
	Total	107	100.0	100.0	

Table 25: Revision of business strategy

In Table 23, Table 24 and Table 25 we see the factor of Business Strategy for the organizations / enterprises that succeeded to face the crisis and continue their operation. Most of the individuals (57.9%) believe that the current strategy of their organization / enterprise is appropriate in order to succeed the organization's aims. There are enough (39.3%) that they would make changes to the business strategy and only 2.8% believe that it is inappropriate.

During the crisis the majority (54.2%) claimed that the business strategy was a basic factor for the successful treatment of the crisis and after the crisis the most organizations / enterprises made at least some changes to their strategy on order to be more appropriate.

Modification of Organizational Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Frequently	20	18.7	18.7	18.7
	When it's necessary	82	76.6	76.6	95.3
	Never	5	4.7	4.7	100.0
	Total	107	100.0	100.0	

Table 26: Modification of organizational structure

Appropriateness of Organizational Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	4	3.7	3.7	3.7
	Little	6	5.6	5.6	9.3
	Somewhat	29	27.1	27.1	36.4
	Much	47	43.9	43.9	80.4
	Very much	21	19.6	19.6	100.0
	Total	107	100.0	100.0	

Table 27: Appropriateness of organizational structure

In Table 26 we notice that the most organizations / enterprises (76.6%) that succeeded to face the crisis change their organizational structure only when it's necessary and it is a positive element that only a small percentage of them (4.7%) do not make changes to their organizational structure.

In Table 27 we notice that during the crisis the most of the organizations / enterprises (63.5%), that dealt with the crisis successfully, had appropriate organizational structure, a factor that contributed to the successful treatment of crisis.

	Not at all (%)	Little (%)	Somewhat (%)	Much (%)	Very much (%)
Business strategy - risk management	0.9	4.7	22.4	54.2	17.8
Appropriateness of organizational structure	3.7	5.6	27.1	43.9	19.6
Business flexibility	0.9	4.7	20.6	51.4	22.4
Contribution of business culture	1.9	9.3	15	41.1	32.7
Department coordination	0	8.4	18.7	48.6	24.3
Involvement of members of other departments	3.7	10.3	29.9	41.1	15
Effectiveness of allocation of financial resources	1.9	8.4	24.3	39.3	26.2
Effectiveness of allocation of human resources	2.8	6.5	21.5	43	26.2

Table 28: Operational – Organizational – Strategic factors / during the crisis

In Table 28 there is a summary of some contributing factors to the successful treatment of the crisis. The most of these organizations were flexible (73.8%). The vast majority (73.8%) claimed that the business culture contributed to the successful treatment of the crisis. Very important factors were the involvement of members of other departments (56.1%), the effectiveness of allocation of financial resources (65.5%) and the effectiveness of allocation of human resources (69.2%).

	Not at all (%)	Little (%)	Somewhat (%)	Much (%)	Very much (%)
Effect on the Business's Financial Status	15.9	27.1	24.3	22.4	10.3
Effect on the Market Position	28	30.8	21.5	12.1	7.5
Revision of Business Strategy	12.1	12.1	31.8	29	15
Effect on the Organizational Structure	28	25.2	20.6	16.8	9.3
Promotion of Internal Cooperation	2.8	7.5	36.4	37.4	15.9
Promotion of Communication	1.9	10.3	29	36.4	22.4
Internal Transfer of Employees	38.3	19.6	26.2	11.2	4.7
Revision on Risk	20.6	12.1	39.3	24.3	3.7

Management Plan					
New Risk Forecasting Systems	15.9	18.7	31.8	29	4.7
Education of Human Resources	12.1	19.6	23.4	31.8	13.1
Appropriate Business Culture	4.7	11.2	30.8	36.4	16.8

Table 29: Effect of the crisis to operational actions and factors

In table 21 we notice the effect of the crisis to some operational actions and factors of the organizations/ enterprises which treated the crisis. We see that their operations' continuity was not influenced a lot, because they treated the crisis, for example the market position of these organizations / enterprises did not changed importantly as well as the organizational structure. Some factors such as internal cooperation, promotion of communication, business culture and education of human resources strengthened. A noticeable aspect is that most of the organizations / enterprises did not revised at all or did only some changes in their forecasting systems although none of them succeeded to prevent the crisis in the first place.

Chapter 5

Conclusions

The first part of the research concerned the general characteristics of the organizations / enterprises. The aim was to understand their size, their market position, their procedures and actions, their strategic choices, their organizational structure, their culture, and the systems they follow. From the qualitative research some responses about these elements were given. In addition, we were given information about their actions to prevent the risk, which is their current business strategy, in what extend they follow risk management policies in their strategic plan, how they allocate their resources (financial, human etc.), which is their business activity.

The quantitative research gave us specific responses about the previous questions. From a wide range of organizations / enterprises which received the questionnaire, the most organizations / enterprises which answered it were S.A. Companies and they had a medium to large size. These organizations are those which are more familiarized with risk management. They understand its importance and they include it in their business strategy. It is a fact that the most of organizations / enterprises tend to be ISO certified, but there is still a big portion that did not follow the ISO standards. These organizations / enterprises probably do not know and do not appreciate its importance. There is need these organizations / enterprises to be informed. Another aspect is that almost all of the organizations have an organization chart but a big portion of them do not use it. This shows that these organizations / enterprises do not take advantage of their resources and there are not well organized. This fact makes them unprepared to identify risks and to treat them. In a possible crisis they will lose valuable time. Problems seem to also exist in the allocation of duties. This will cause delays in a possible effort to handle a crisis. The personnel will not know how to react, the communication will not be the appropriate and the coordination will be difficult and conflicts between the members of a team or between groups will be possible. Another characteristic of Greek organizations

/ enterprises is that they do not have a risk management department. This proves that the organizations / enterprises are not so well organized and prepared regarding risk management procedures. However, they tend to create working groups for specific activities and they support them appropriately. This shows that they recognize the importance and the advantages of group work. In addition, they understand the role of human resources and they spend financial resources about its development. However, they have not understood yet the role of human resources motivation and they not invest in it. When people are motivated, they give their best effort for the success of the organization / enterprise and they tends to be more committed. Furthermore, there are a lot of organizations / enterprises that do not apply human recourses efficiency control systems and they lose the opportunity to check the changes that may be needed, the education that individuals may need and to discover some mistakes. Another factor that it is underestimated is problem solving. There are a lot of organizations / enterprises that they do not consider it as crucial factor and in this case problems are not solved and they may lead to further more serious problems and crises.

Form the research we conclude that they might be some steps to the right direction but still many organizations / enterprises should be informed about the necessity of risk management. The environment in which they operate is dynamic and they have to face a lot of changes and risks. So they should adopt risk management in their business strategy and to follow its technics.

The research questions aimed to find out which factors of operational risk management contribute to the organizational continuity of an organization which have faced a crisis and have managed to survive, which is the role of the organization's structure and which is the role of leadership.

The results of research prove that a basic factor, which contributes to the continuity of the organization / enterprise, is the chosen management strategies. The organizations which "survived" from a crisis had a business strategy plan which was well organized and it was appropriate and suitable to the organization's aims. This strategy plan was taking into account the risk management plan and during the crisis was the best asset of the organization / enterprise. These organizations / enterprises, which understood the

importance of the strategy factor, after the crisis revised their business strategy in order to be in accordance with the new conditions and needs.

Another important factor for the organizational continuity after the crisis was the organizational structure. The organizations which achieved their continuity had a well-organized structure and the personnel claimed that it was appropriate for a crisis management procedure. This structure facilitated the business flexibility, the effective allocation of financial resources and the effective allocation of human resources. It also promoted a business culture which is committed to problem solving and to business learning. In this way the organization / enterprises is ready to face changes or crises and to be improved by this procedure. The successful organizations / enterprises after the crisis modified their organizational structure and implemented new forecasting systems in order to be ready for future crises and risks.

Another group of factors is the human resources capabilities / skills and their ability to undertake risk management, working as individuals or at groups. It was proved that factors such as effective communication among the group members or departments, correct time management, effective coordination among the group members, beneficial alliances, lack of competitiveness and lack of conflicts contribute to the continuity of an organization/ enterprise. These factors are boosted by other management factors which a leader can apply. The working teams act better when their number is sufficient and when there are incentives for its members.

A last conclusion is that organizations / enterprises which succeed to continue their operation after a crisis take advantage of risk management strategies and of all the operational factors. They also are well prepared to prevent and identify risks, they react on time and they are ready to revise their strategy and their operation systems in order to be prepared for the next challenges. In general, they are open to changes. (Cordes, Richardson and Schwesinger 2010) (Linnenluecke and Griffiths 2010) (Mengolini and Debarberis 2012)

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Appendix A

Questionnaire

A.1 General business characteristics

1. Business's legal form
 - S.A. Company
 - Limited Liability Company
 - Limited Partnership Company
 - Unlimited Partnership Company
 - Public Corporation
 - Non-Governmental Organization
 - Group of companies
 - International Organization

2. Company's production sector
 - Product production
 - Services
 - Both

3. Company's years of operation
 - Less than 1 year
 - 1-10 years
 - 11-20
 - 21-30
 - 31-40
 - 41-50

- More than 50 years
4. Is the company ISO certified?
- Yes
 - No
5. Company's number of employees
- 1-9
 - 10-49
 - 50-249
 - 250 and more
6. Does the company have an organization chart?
- Yes
 - No
7. The organization chart
- Is fully used
 - Is partly used
 - Is not used
8. Is there clear allocation of duties among the employees?
- Yes
 - No
9. How flexible is the company regarding the modification of its organization structure?
- The company modifies frequently its organization structure
 - The company modifies its organization structure only when it's necessary
 - The company does not modify its organization structure
10. How would you describe the company's business activity at the moment?
- Ambitious

- Appropriate to the economic conditions and the competition
- Sufficient
- Modest
- Inadequate/poor

11. How would you describe the current business strategy?

- It is the appropriate to achieve the goals
- Changes are necessary to achieve the goals
- It does not agree with the goals/ It is not the appropriate to achieve the goals

12. Does the business have a management control system?

- Yes, it is well designed and applied to every activity
- Management control systems are applied only to specific activities
- No

13. How important the management process is for the business, in regard to the business's financial resources?

- Unimportant
- Important
- Very important

14. How important the human recourses are for the business, in regard to the business's financial recourses? / What is the importance of human recourses for the business, in regard to the business's financial resources?

- Unimportant
- Important
- Very important

15. How important the human recourses are for the business, in regard to motives such as reward, training and problem solving? / What is the importance of human recourses for the business, in regard to motives such as reward, training and problem solving?

- Unimportant

- Important
- Very important

16. How important problem solving is for the business?

- Not important
- Important
- Very important

17. Are there any human resources efficiency control systems?

- Yes
- No

18. Does the business support the development of working groups?

- Yes, working groups are developed for every activity and are supported
- Working groups are developed for every activity and are appropriately supported
- Working groups are developed for specific activities but are not appropriately supported
- Working groups development is not supported by the business

19. Does the company have a risk management plan?

- Yes
- No

20. Does the business have a risk management department?

- Yes
- No, but working groups are created when there is a risk
- No

21. How often does the business face risks?

- Never
- Rarely
- Sometimes
- Often

- Very often

22. Personally, have you ever had to deal with a crisis in the business? Did you manage a crisis?

- Yes
- No

A.2 Risk management

23. Was there a risk management plan?

- Yes, there was a plan and all the actions took place accordingly
- Yes, but some actions were modified
- No, there was not

24. Did the business strategy help in the risk management?

- Not at all
- Little
- Somewhat
- Much
- Very much

25. Was the organizational structure appropriate to deal with the crisis?

- Not at all
- Little
- Somewhat
- Much
- Very much

26. How flexible the business was to modify strategies and actions during the crisis?

- Not at all
- Little
- Somewhat
- Much
- Very much

27. Did the business culture contribute in the risk management?

- Not at all
- Little
- Somewhat
- Much
- Very much

28. During the crisis, how well were the departments coordinated?

- Not at all
- Little
- Somewhat
- Much
- Very much

29. Did members of departments that were not immediately involved with the crisis help to deal with it?

- Not at all
- Little
- Somewhat
- Much
- Very much

30. In your opinion, was the allocation of financial resources during the crisis effective?

- Not at all
- Little
- Somewhat
- Much
- Very much

31. In your opinion, was the allocation of human resources during the crisis effective?

- Not at all

- Little
- Somewhat
- Much
- Very much

32. In regard to the human resources, how evident were the following (Answers in a 5-point Likert scale, from “Not at all” to “Very much”);

1. Efficient allocation of duties (with respect to each member’s abilities and available time)
2. Clear and comprehensible allocation of duties
3. Correct time management
4. Trend to taking power
5. Leading trends
6. Effective communication among the group members
7. Effective communication among the departments
8. Effective coordination among the group members
9. Effective coordination among the departments
10. Beneficial alliances/collaborations among the group members
11. Competitiveness among the group members
12. Conflict of interests among the group members
13. Sufficient number of group members
14. Incentives for the group members
15. Effective control of the group and its members
16. Rewards to the group members

33. How would you describe the management of the crisis you handled?

- Unsuccessful
- Almost unsuccessful
- Somewhat successful
- Successful enough
- Successful

34. Did the crisis affect the business’s financial status?

- Not at all

- Little
- Somewhat
- Much
- Very much

35. Did the crisis affect the business's market position?

- Not at all
- Little
- Somewhat
- Much
- Very much

36. Did the business revise its strategy after the crisis?

- Not at all
- Little
- Somewhat
- Much
- Very much

37. Did the crisis affect the organizational structure?

- Not at all
- Little
- Somewhat
- Much
- Very much

38. Is the internal cooperation being promoted/improved/favored now?

- Not at all
- Little
- Somewhat
- Much
- Very much

39. Is communication being promoted now?

- Not at all
- Little
- Somewhat
- Much
- Very much

40. Was there an internal transfer of employees due to crisis?

- Not at all
- Little
- Somewhat
- Much
- Very much

41. Was there a new or improved risk management plan?

- Not at all
- Little
- Somewhat
- Much
- Very much

42. Does the business use new risk forecasting systems now?

- Not at all
- Little
- Somewhat
- Much
- Very much

43. Does the business educate the human resources for future risk management?

- Not at all
- Little
- Somewhat

- Much
- Very much

44. Is there now appropriate business culture to face any future crisis?

- Not at all
- Little
- Somewhat
- Much
- Very much