

# We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index  
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?  
Contact [book.department@intechopen.com](mailto:book.department@intechopen.com)

Numbers displayed above are based on latest data collected.  
For more information visit [www.intechopen.com](http://www.intechopen.com)



---

# Risk Management in the Decisional Process

---

Florin Boghean and Carmen Boghean

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/67873>

---

## Abstract

The achievements of individuals have generated an attitude change toward risk, and the passion for gambling and bets has channeled itself toward economic growth, enhancing the life quality and technological progress. The capacity of defining something that will happen in the future and to choose between more than one alternative represents a central principle of today's society. Managing risk helps us to orient in a large spectrum of decisional processes, ranging from investing capital to making a family, from insurance premiums market to whether wear a seatbelt. Long time ago, means of production, business administration, and communication were simple. Failures were often, but they could be solved without calling on a computer technician, accountant or investment adviser. Presently, the means we use are much more complex and failures can be catastrophic, with a devastating impact. We must constantly be aware of the failures' probability and errors.

**Keywords:** corporate governance, responsibility, decisional process, risk management, support systems for decisions, accounting

---

## 1. Introduction: theoretical background of the current research

The modern idea of risk has its origin in the Indo-Arab numerical system that came in West some 700 or 800 years ago. However, a more careful study of risk has begun in Renaissance times, when people have freed themselves from the constraints of the past and have doubted the deep-seated ideas and beliefs. It was then when vast territories were discovered and when the planet's resources were about to be explored. There were times marked by religious disagreements, early stages of capitalism, and a courageous approach toward science and future.

All the instruments we use today in risk management and in analyzing decisions and choices, from the strict concept of game theory to the challenges of chaos theory, they all have their origin in the discoveries between 1654 and 1760, with two exceptions:

- In 1875, Francis Galton, an amateur mathematician (cousin with Charles Darwin), has discovered the linear regression, thus explaining why arrogance predicts collapse and why there cannot be evil without good. When we make a decision based on the idea that things will go back to normal, we apply the notion of linear regression. Regression, he writes, is “the tendency of that ideal mean type to depart from the parent type, 'reverting' towards what may be roughly and perhaps fairly described as the average ancestral type.”
- In 1952, winner of the Nobel Prize for economics, Harry Markowitz (then a young doctoral candidate at Chicago University) mathematically proved why choosing to bet all on one card is a highly risky strategy and why the diversification is one of the most popular instruments which one investors have.

Many times tens discussions appear between those who consider that be best decisions are taken based on numerical calculations, on some templates of past events and those who base their decisions on more subjective degrees of confidence related to the unsure future. This controversy has not yet found its solution. The issue comes down to each person's vision on how the past conditions the future. The future cannot be quantified, because it is an unknown [1]. The individual has always wanted to project the future based on the present or based on the past experiences. Any decision related to risk results in two distinct elements and at the same time, indissolubly linked: the objective reality and the subjective vision about the value of what can be gained or lost, as a consequence of that decision. Objective calculations, as well as the degree of confidence, are essential elements; none of them are adequate without the other. “The value of our expectation always signifies something in the middle between the best we can hope for and the worst we can fear” [2]. “The Risk of losing any sum is the reverse of Expectation; and the true measure of it is, the product of the Sum adventured multiplied by the Probability of the Loss” [3].

In an economy-based market, information represents a force that gives powers of decision to those who have it, even if it does not represent the absolute truth. One of the most respected mentors in business, Warren Buffett said: “It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently”, and it seems that it is true. In the current economy, in a world developed from an information technological point of view, you are a click away of success or failure. If we were to think about what Buffet said, the most important asset of an organization is its reputation and among the elements that influence this reputation we find the quality of products (40%), business grounds (34%), and social responsibility (56%).

Organizations should transform their organizational culture from one based solely on risk control, in one that allows a better acknowledgement of risks. In the chapter “Black swans turn grey. The transformation of risk”, it is reconfirmed the fact that, in the current context defined by high uncertainty, we cannot anticipate future events and the effect they have if

we use only the retrospective analysis of existing data (forecasting) [4]. Based on this, we have highlighted in the present research the way the entities integrate risk management in their business strategy. To this scope, we will prove that for many categories of decisions, risk represents, alongside efficiency, a major evaluation criterion of decisional versions. The descriptive approaches from the theory of decisions have revealed some particularities of the way managers act in uncertain conditions. When facing risks, they do not only assess them, but also apply active actions in order to diminish the potential losses [5].

In uncertain situations, the decisional process is based on rationality, as well as calculations. Rational persons conduct an objective analysis of the information: the errors they might make when forecasting are completely random and cannot be blamed on some subjective factors like the optimism or pessimism of the decision makers. They react to new information based on a set of well-established priorities or preferences. They know exactly what they want and use the new information in such a way that they can satisfy those priorities. We can do the puzzle of, more or less, fragmented information that we have, but we may never have all of the data. We will never know how representative the chosen sample is. This uncertainty is the very one that complicates our decision making, and it enhances our fear to act. When we lack information, we need to resort to inductive reasoning and try and guess the probabilities. Keynes and his followers have concentrated on money and contracts in order to prove that uncertainty is the dominant principle of the real world and not mathematical probabilities. The prevalence of uncertainty in the decisional process is highlighted by our desire to own liquidity and to consolidate our future agreements through enforceable contracts. We are no longer inclined to orient ourselves by the mathematical frequency of past events.

Man has always endeavored to ease his existence, assets, and thus to be able to adapt as well as possible to the needs of day-to-day life. All of the above have been made more consistent and more rigorous, along with the usage of the scientific method in conducting various researches. Thus, an essential role lies upon the research that can be understood as a search within a methodical process, intended to improve our own knowledge, as well as of other people, through the discovery of facts and visions.

From the perspective of game theory, almost every decision that we make is the result of some negotiations through which we try to diminish the uncertainty, responding to the needs of others in order to obtain something we want. Like the game of chess, real life is a strategic game, combined with contracts and handshakes to protect ourselves from cheaters. Choosing the alternative that we consider to be the most profitable means, in many cases, the most risky decision, because it may raise the most powerful defensive reaction from the players that will have the most to lose if we achieve what we want. So, we usually make do with a compromise, trying, in this way, to gain the most from a not so profitable transaction; these kinds of decisions are described in the game theory with terms like “maximin”, or “minimax” [6].

From an increasingly larger number of desk research of relevant literature, it is shown that, while making a decision, people may be tempted to satisfy different vanities or may have a narrow or deformed vision about things. These disruptive factors do not seem to count very much when the stake is winning in gambling or the big lotto price. But, it has been proven

that these weaknesses become even more visible in fields in which consequences may be much serious. We would be exaggerating if we were to call this behavior “irrational”, because irrationality means madness, and the majority of people are not insane. Richard Thaler, an economics professor at Chicago University, has observed that people are neither “down right stupid” nor “highly rational robots”. However, Thaler’s revolutionary studies about the way people make decisions in day-to-day life show great irregularities from the decisional models in which Bernoulli or Markowitz believed [7].

Investors need to sometimes expect also failures as a consequence of the risk that they take. The expectations of rational investors need to be impartial, a rational investor will sometimes exaggerate and some other times will minimize, but he will not show one of these tendencies all the time and not even most of the time. Rational investors are not among the people who always see the half full of the glass or the half empty of the glass.

No one really believes that reality is one and the same with the investor’s sketch description that always negotiates risks and efficiency in a rational way. The uncertainty is frightening. No matter how rational we may try to act, emotions make us often avoid unpleasant surprises. Daniel Kahneman considers that “the imperfection of the rational model does not consist in its logical structure, but the human intelligence that they postulate. Who would conceive a mind capable to act the way this model says?” [8]. If investors have the tendency to defy the rational model, maybe this model does not offer a very real description of the way the capital markets act. In this case, there are new methods of calculus for investment risk.

Capital markets have always been volatile because they only trade some bets for events that will happen in the future, and this time dimension is full of surprises. Buying a pack of stocks that do not have a final maturity date is a pretty risky business. The only way the investors can liquidate their participations is to sell to other investors—absolute every one depends on the expectations and the purchasing power of others. The same principals apply in the case of bonds that will returned to their owners the sum of money invested in cash but at a later time.

This kind of environment is a perfect one for unsound events: uncertainty is frightening. If unsound players from this arena overwhelm the rational ones, by number as well as fortune, the assets’ prices may start from values that are far from the equilibrium level and might maintain themselves for a long period of time. These periods of time are often pretty long and may test the patience even of the most rational investors.

Despite the many bibliographic references, I have studied in the attempt to unravel this mystery, many things have been left unclear. The discontinuities, irregularities, and fluctuations seem to multiply instead of disappearing. In the finance world, newer and newer instruments appear in an overwhelming rhythm, new markets develop much faster than traditional ones and the global interdependency increases the complexity of risk management. The economic uncertainty, especially employment, is greatly published. Environment, health, and personal security are being attacked by enemies never seen before.

In this kind of world, does probability, linear regression, or diversification even matter? Is it even possible to adapt these strong instruments that help us to interpret the nature changes in order to search the source of these misstatements? Will we always be haunted by disorder?



Rarely, the experiences of the past may give us a hint about the moment when disorder will be unleashed. Wars, crises, capital market's ups and downs, and inter-ethnic massacres will come and go, but their appearance always takes us by surprise, so powerful that it is difficult to imagine how the victims of these incidents did not realize what was about to happen to them. The surprise is more present in the finance world. We cannot include in the calculus information about the future, because we do not have them. So, we feed them with data from the past to power decisional mechanisms created by our models, either linear or nonlinear. The similarity to the truth is not the same thing as the truth.

## 2. The objectives and methodology of the research

The research fits into a positivist scientific approach, not being deprived of some critical and interpretative approaches, which aim to clarify various concepts and to highlight possible solutions to the issues identified. To examine scientific issue and to achieve the objectives and goals of the research, we will use the following methods:

- *the analytical method* will be used to perform analysis of the theoretical approach of decisions, risks, and their role in making decisions process;
- *the qualitative and quantitative research method* will be applied though the data collection using a survey, conducted national wide, of public and private decision-makers;
- *the method of induction and deduction*.

Research carried out in this paper has a part of empirical testing of some hypothesis about the impact of the risk management assuming in decision-making processes in the context of effective corporate governance.

## 3. The concept of mathematical derived risk

Risk can be encountered day by day and is associated most of the times with insecurity. Risk is inherent to every process, existing in the essence of all things, and the term "risk" is used in the most varied fields: from the financial to the political, from the medical to the military. A fair amount of the traditional concepts of risk have used mathematical formulas. Economical representations of risk have been based on the estimated value theory. According to this definition, risk is characterized though the distribution of probability of different results. When confronted with the possibility of choosing between two situations with same estimated values, the risk averse decision maker would always choose the situation that offers a safe result over the situation which offers a diversity of results over and under the expected value. A person with a risk appetite would have its preferences exactly the opposite, and a neutral-to-risk person would be indifferent to both situations because the estimated values are the same. Over time, the behavior of each and every one of these tip of decision makers/agents has been studied. Among the risk averse agents, there are certain categories, which prefer a smaller estimated value than a higher

value in the context of assuming a bigger risk. Although, these agents can choose those risk situations when there is a provision of a sufficient raise of the estimated value. The degree of risk aversion of the decision maker determines the requirements that need to be fulfilled in order to choose a risk situation.

Other mathematical correlations of risk have been offered by the business literature, especially the finance one. These definitions have state that risk is the meaning of mathematical variation of possible outcomes [9, 10]. For example, risk has played an important role in finance developing the modern portfolio theory defines risk as being the income variation and provides a method for the return of this variation through investments in assets that are not perfect correlated with one another [11–13]. Thus, the method to manage risks is to diversify the assets portfolio. By choosing a sufficient number of assets and holding a small share of the whole portfolio of the investment in a certain asset, risk is thus alleged to be reduced to a minimum.

Notable of this approach of defining risk is that potential of the positive evolution contributes to the whole value of risk. This is contrary to many traditional notions, irregular to risk, in which only negative surprises are truly considered risks. Considering positive evolutions as being risky, the outcomes are some counterintuitive situations [11]. For example, a person finding a stalk of unclaimed lottery tickets will immediately see the risk level associated with the rising of his net value, despite the lack of a negative result associated with the tickets. In a similar way, Kaplan and Garrick, consider an heir, of whose benefactor has passed away [14]. The assets of the benefactor need to be evaluated, but it is estimated that they will be about 1 or 2 million dollars. The authors mention that, while the heir is confronted with considerable uncertainties, it will be unlikely that it will be about a situation that has a risk. Thus, managers that want to reduce the advantages as well as the disadvantages of risk are advised to avoid similar risk examples, which may be produced in a corporative context, even if the real preferences of a manager are typical asymmetrical when it comes to every kind of risk (Figure 1).

These kinds of approaches of risk management in the managing of financial risk were not always well received or well implemented. The hedge fund *Capital management on the long run*



Figure 1. Result-time correlation in risk management. Source: Own processing.

has included two Nobel laureates, which, after the stockpile of large amount of capital have continued by losing more than 4 billion dollars over several months, as a result of a Russian financial crises in 1998 [15]. The fund has determined the intervention of Federal Reserve to avoid a colossal financial collapse. The excessive and abusive use of some of these practices has been one of the triggers of the global financial crises of 2008, but also of other crises that have left a print on economic history [16, 17]. Actually, some speculative hedge funds have won great amounts of money by exploring these systemic dysfunctionalities. In comments about the financial crises of 2008, Lewis explains that the hypothesis of the uncorrelated prices of houses at a national level has allowed the different combinations of individual mortgages, which permitted the selling of low-quality houses at a higher value and the diversification between more than one mortgage [18].

March and Shapira extend traditional notions about risk that have been used by the academia [19]. Compelling evidence is assured by the conclusions of MacCrimmon and Wehrung, which have noticed that, when executive directors are tasked with ordering a list of portfolio investments, the estimated value theory was only followed by only 11% [20]. March and Shapira's review has observed that the majority of the managers have considered that the risk could not be quantified that risks could be directly compared one with another, and a vice-president of finance says that "no one is interested in obtaining quantifiable measures", another manager asserts "you do not quantify risk, you just need to feel it". It would be useless to state that it is difficult to design models based on "the feel" of the risk, so traditional definitions, quantifiable of risk, remain mostly in the literature [19].

Reviewing the traditional risk notions, Kaplan and Garrick discover that risk includes both uncertainty notions, as well as the ill ones. The later discovery is the distinction between risk and hazard. A hazard refers to a source of damage. Nevertheless, a pre-eminent danger and a potential lethal danger (for example, a nuclear plant), however, may be accompanied by small risk using pro-eminent guaranties. Kaplan and Garrick note that "the danger cannot be associated with zero risk, and the risk will be smaller when the guaranties overcome the danger" [14].

They note an important epistemological fact about risk: risk is inherent perceptual. The perceptual nature of risk transpires from the contribution of uncertainty of risk. Uncertainty (besides the invented games and quantic events) comes from a lack of knowledge from the one who evaluates the situation. Thus, a reference to "the perceived risk" is redundant. Usually, when one refers to a perceived risk, one pursues the comparison to perceived risk by another group of experts—mentioned as "absolute risk". In their evaluations, the group of experts often can rest upon previous experiences and on the damages made by some risks. Still, these expertises are sensitive to more precise evaluations than the ones offered by managers.

#### **4. Intuition versus rational analysis in making decisions**

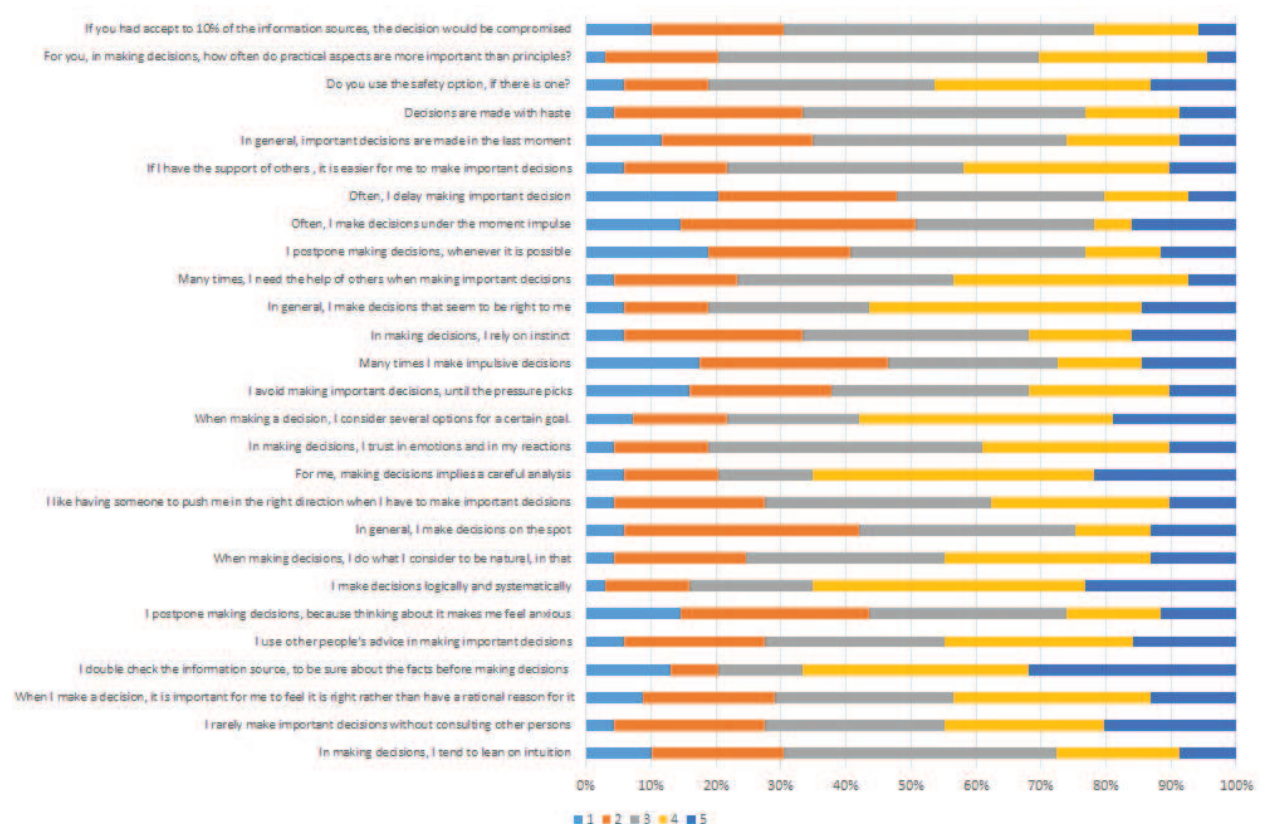
Intuition is an immediate process and as such is not perceived as a conscious process of reflexive thought. Is wrongful identified with processes, which are even from the subconscious. In order to understand the intuition concept, we can try to consider the combination between its opposite meaning reasoning. More and more often, literature refers to the process of decision



making as a combination of the two types of thinking and perception: rational thinking and intuition. Intuition is seen as a rapid and high-capacity process, which needs relatively low work; reasoning, on the other hand, is a time-consuming process, reflective, goal oriented. By applying intuition, managers may manipulate a large amount of information and processes at the same time. Even if they are not aware of the way the process works, this does not mean that it appears only outside the conscious. Researchers link rational thinking and perception to the so-called work memory, which measures through the pieces of transitory information that are saved in time that operates a cognitive task. In contrast with reasoning, it is assumed that using intuition does not need work memory in order for it to be busy; as a result, intuitive knowledge is fast and high capacity and is less linked to consciousness.

Quasi-reasoning offers a compromise between competing opinions of the individual members of the decision making team as highlighted in **Figure 2**.

There are two types of human thinking: rational and irrational. Thinking and behavior are considered to be rational when it is taken into account the accumulated social values (social level rationalizing). On the other hand, rationality is defined as a set of aptitudes (abilities) through which a chain of action can be identified and which allows us to set an objective. Irrational thinking can be understood as being a prolonging of rational thinking, meaning the



**Figure 2.** The respondents share in the sample's structure according to the consent linked to the assessed affirmation. *Note:* 1 = in total disagreement, 2 = disagreement, 3 = neutral (neither agreement, or disagreement), 4 = agreement, 5 = total agreement. *Source:* Own processing.

ability to blend thinking in patterns of the logical structures, with the end purpose of obtaining an objective. Irrational thinking and actions do not mean that logical thinking is applied. This means that thinking is based on principles that deviate from the classical reasoning, the rational.

Intuition, imagination, and managing emotions are based on the experience one has. Experience, in turn, is a combination of explicit and implicit (or tacit) knowledge accumulated by a person. It is defined as a set of competences and abilities, which an individual gains while he/his is learning formal and informal through practice and observation.

Some authors believe intuition is a form of rationality, rather than the opposite. This reflects the person's capacity to identify a derived solution from the unique experience of the decision maker and a blend of explicit and tacit knowledge of a person. First of all, intuition is used in making strategic decisions. Rather than being an irrational process, it is based on the profound understanding of a problem situation. Intuition is a complex phenomenon based on experience and knowledge, which are first deep rooted in subconscious [21].

Knowledge can be divided in two categories: *explicit and tacit*. *Explicit knowledge* is kept in the conscious and is the result of studying. The buildup of explicit knowledge leads to the so-called mediate experience. Explicit knowledge can be formed as books, encyclopedias, databases, and innovations, at a logical-social level as well as technical one. Explicit knowledge cannot be monopolized: it spreads fast in the organizations and continuously evolves with experience accumulated by the members of the organization. *Tacit knowledge*, on the other hand, directly derives from the experience of a certain person and is stored first of all in the subconscious.

In trying to locate irrational thinking, as part of the conscious and subconscious, authors have placed it on the border between the two moods. Especially, irrational thinking is linked exclusively to the qualitative mood (nonlinear, flexible, and very hard to quantify).

Literature on this theme makes a distinction between rational thinking and applying intuition. As for the decision making process, the distinction cannot be made with preciseness, because in a large part, reasoning is based on the decision maker's experience and knowledge and, in the involved mental processes, it refers to emotions, intuition, and imagination.

Therefore, it can be said that the logical-rational structure of any effective process of decision making is enhanced by a blend of experience, imagination, intuition, and emotion (all of them being components of the irrational thinking). It is believed that rational and irrational proportions from this blend depend on the decision maker's personality and the kind of problem and situation at hand. Accordingly, it may be assumed that the manager can use different kind of combinations of rational and irrational thinking when he is dealing with different decisional situations.

Literature offers a few orientations for efficient decision making [22]:

- Making decisions based on group heightens the efficiency of the whole process;
- Decisions should come from the contradictory opinions of the members of the team and not from consensus;

- Efficient decisions need nontraditional approaches to be used, unorthodox questions to be asked and solutions to be accepted because they are not always logical.

When some guidelines are being analyzed, the first observation would be that the efficient decisional process reduces the adding of irrational thinking components (like intuition, emotions, and imagination), in a rational way of knowledge. The rational way of making decisions conjectures stages that, more than others, need the irrational thinking to be enforced. These are identifying a decision issue and choosing a decision from a large number of alternative solutions. In order to correctly continue these stages, all the available information sources should be exploited through imagination and emotions, including intuition.

To sum up, manager who tries to ensure a more efficient decisional process should add the irrational element to the rational thinking, to lean on consciousness and unconsciousness and to look at explicit and tacit knowledge. Now, returning to the limited rationality notions and “double” limited, we will observe that:

- *Limited rationality* is, in the first place, the result of some organization norms, insufficient resources, time pressure, and lack of necessary information;
- “double” *limited rationality* is the result of some thought mechanisms of managers (blend between rational and irrational in their thought).

Making decisions that combine the rational analysis with intuition is, also postulated by J. Woiceshyn, the author of a model ethical decision making in which the interaction between intuition and analysis is facilitated by some moral principles, which are stated, summoned, and applied in order to reach success on the long term [23]. Ethical decisions in business imply many transactions and relationships with shareholders, employees, suppliers, and clients. A model of ethical decision was created based on an empirical study in which the accent was placed on strategic decision making by efficient directors. They applied the so-called double process, which implies reasoning and intuition. The essential elements of the process include “integration through essential” and lead to morals being applied in decision making, as well as the spiral decisional process as shown in **Figure 3**.

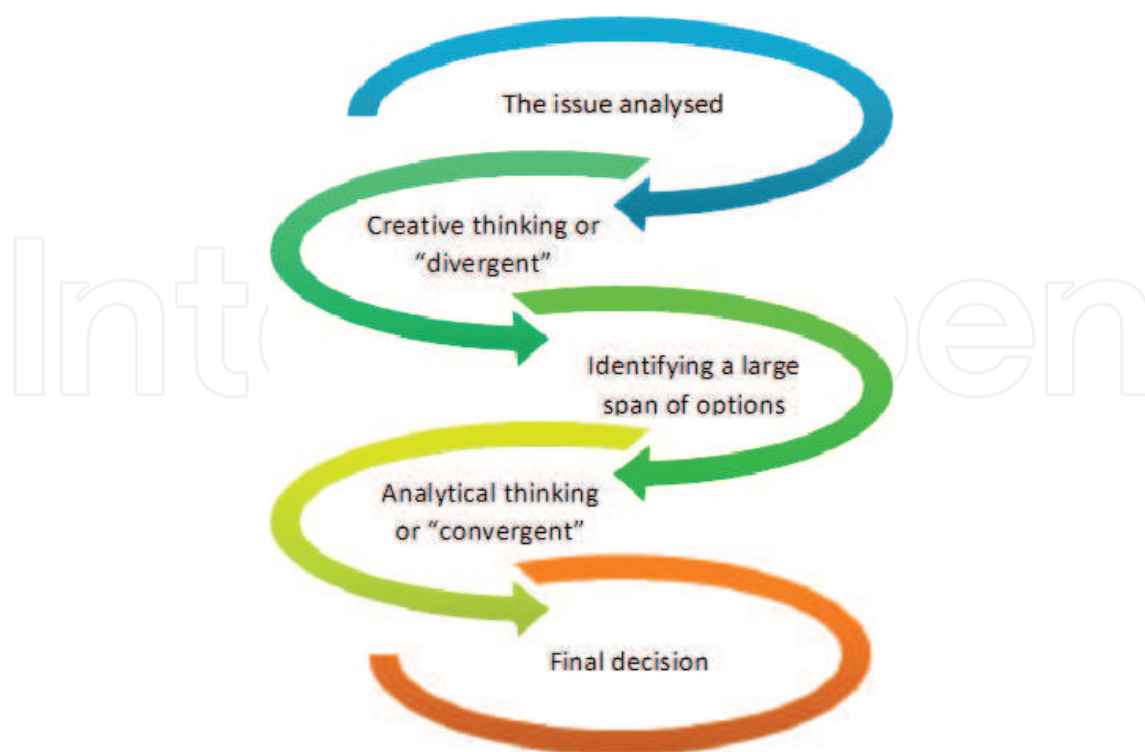
As I mentioned, the decisional process, in which the intuition and rational analysis are combined, is formed by two processes. The first was discussed above and involves the integration of essential elements; the other is called in spiral. The spiral notion takes its name from the fact that the process includes an iterative action model (looping). Three stages can be observed:

- *The first stage*: the decision maker does a quick analysis of the decisional context, and then he focuses his attention on essential elements and facts; as a result, they are selected feasible solutions and the ones that are not considered realistic eliminated. As part of this stage, the information resulted from the observations is integrated in intuition, that are based on knowledge from past experience;
- *The second stage*: available decisional options are evaluated according to the adopted principles so it may lead to an initial decision;
- *The third stage*: the initial decision is compared and tested by analyzing more than one alternative. This is done with the main goal of learning which of the alternatives fulfill

the requirements and principles for improving decisions. The results of this stage are new knowledge, which results from the integration of essential elements and facts.

The spiral process ends with the selection of one or a combination of logical decisions. The three stage process is not a rigid sequence of actions. Empirical research shows that managers are the actual decisional factors which pass from a stage to another, but many times they return to past sequences, with the aim of improving decisions. Even if they concentrate their attention on solutions that are initially identified as possible, managers do not completely give up other decisional alternatives. Decision makers try to explain why they choose to give up and select others in turn.

Intuition is often understood as the effect of the subconscious processing, the one that flows from integration of present observations and confronting them with past experience. Empirical research shows that using intuition is linked to subconscious processing. To action in fully conscience manner need a large amount of knowledge. It is impossible to possess this knowledge all the time in focal conscience, so it can be used freely. As a result, some knowledge is stored in the subconscious. The use of intuition is reduced to the separating of knowledge that has occurred in the subconscious and remembering it in a specific situation. The kind of knowledge we store in the subconscious is altered by the past experience; for this reason, managers with experience use intuition more effectively. This is not only an experience, but the way knowledge is separated in the subconscious and how often is recovered from there has an impact on the way intuition is used and thus the quality and quickness of decisions. If the new knowledge is not separated and linked to past knowledge, probably it could not be used in a proper way in the future. The way conscious mind integrates new



**Figure 3.** Rational and non-rational in the decisional process. *Source:* Own processing.



knowledge, depends on the subconscious a great deal, and there is not a universal method of integrating knowledge we can count on. The knowledge of objects, phenomena, or processes should be completed in groups, classes, or specific categories. Then, it is easier to remember how to use them in practice. Efficient managers incorporate essential elements, meaning that they firstly identify the essence of an object, phenomena, or process which they are trying to analyze. This thing enables the recovery of similar knowledge stored in the subconscious. In the next stage, the knowledge of essential elements is incorporated in larger concepts, and then, the principles are formed on these concepts. Incorporating the recovered information through the identification of the essence of every given phenomena does not only facilitate but also speed up the recovery of information from the subconscious. The principles are created as a result of the integration of a larger part of knowledge; they are based on the essence of phenomena, processes, or objects and casual relationships undiscovered between themselves, which are suited for specific situations. The principles are a kind of generalization that is designed from observations or past experience. They guide the decision makers in their decisional processes. Decision makers need principles because our capacity to store knowledge is limited; at the same time, information needs to be qualitative, if we want them to make a good decision. Principles allow us to condense extended knowledge from statements that are easy to remember and absorb when making a decision. Onward, we will enunciate a few principles that are most often cited in decision making [24]:

1. Rationality—this principle implies systemic observation and logical analysis of facts and information, thus:

- Decisions should be based on facts, rather than emotions;
- Efforts need to be done for a larger objectivity through the search of external expert's opinions and using counseling teams whose members are competent in several fields or specialities;
- Haste must be avoided when making decisions;
- The quality of information needs to be verified.

2. Productivity—this principle has concentrated on building added value:

- The risk should be reduced because it threatens the building of value;
- The enfaces should be placed on competitive advantage (what we can do better than our competitors);
- Resources and competences should be aligned with the strategy.

3. Innovation—this principle recommends to turn to one's own judgment:

- Decisions must be made by consulting third parties, but made on their own;
- There should be trust in the capacity of resolving issues of the decision maker.

4. Objectivity—this principle is about the objective evaluation and handling through other people, among others:



- Honest criticism;
- Equal treatment of subordinates and associates;
- Laying of the people that prove low commitment.

5. Honesty—this principle implies the correct evaluation of reality, not distorting facts or conditions, with the goal of not creating false values.

When they make decisions, managers identify and use not only these principles which refer to strategy but also implement ethical principles in a spiral-like iterative process which combines conscious and subconscious. The results of our research also show that managers use the same decisional process when talking about ethical aspects, the same as when making business decisions on the long run. The main principles of this theory are the following:

- Own interest (every person should see one's self as the most important value and be the beneficiary of his own actions);
- Human life as imperative value (choices and actions should have an impact over the human survival and prosperity);
- Rationality (recognizing rationality as the only save source of knowledge);
- Productivity (process of creating material values);
- Honesty (reality cannot be falsified);
- Justice (the action needs to be objective, the reward should be appropriate);
- Independence (reality orientation);
- Integrity (loyalty toward rational principles);
- Pride (the commitment to achieve moral perfection).

In **Figure 4**, there is a model of ethical decision making. In the center of the model, there are two levels of information processing and the interaction between the two of them (integration through essential elements) [23]. Interaction implies the design of a spiral between the conscious and subconscious level. The first step in the ethical decisional process is to identify a moral issue. Later, a decision maker identifies the moral principles that can be applied, which can be done at a rational processing level. In this stage, the conscious mind of the decision maker is based on the subconscious in order to find the necessary information to solve the issue. If the manager has integrated his knowledge of essential elements, the necessary information would come to his conscious mind.

The next stage is to apply the identified principles (that are suitable in certain situations) to the issue, in thought and in action. Though the using of relevant principles, the issue is solved and the solution its self should, through in the integration of essential elements, lead to new principles to be formed that end the decision making process. The principles J. Woicieszyn identified in his empirical study are, a great deal, in agreement with the characteristics and principles of the rational egoism theory.

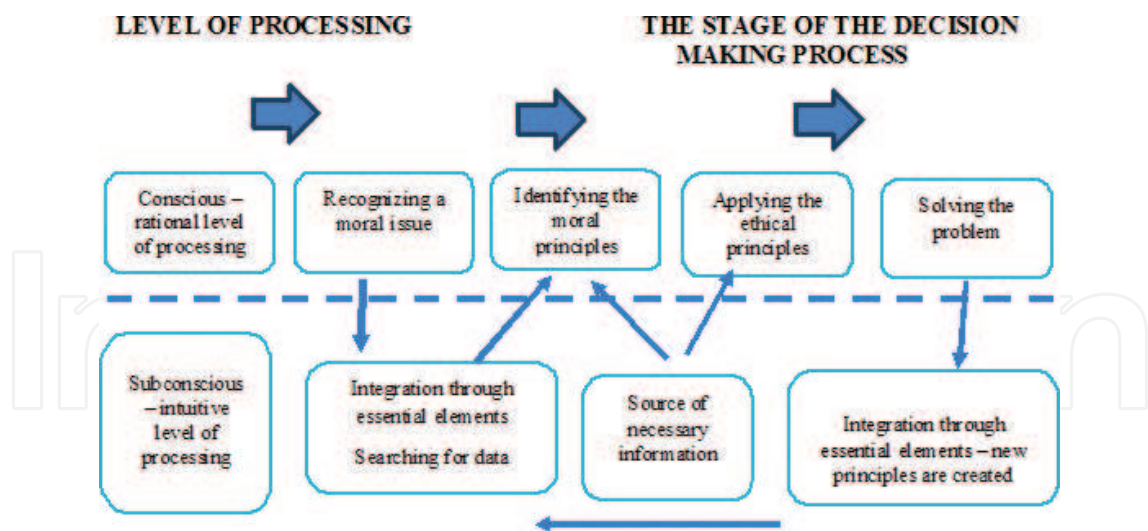


Figure 4. Double model for ethical decision making. Source: Woicieshyn (2011).

Risk management is an important concern for entities. Consistent to this, **Figure 5** presents some ways for handling the risk. We can see that risk management is still in a beginning faze in most entities even if managing risks are underlain to try and diminish the negative effects implied by its manifestation.

The key to success of an entity is its capacity to identify (provision) the source of added value and to explore them accordingly and to identify the factors which positively influence the decision making process presented in **Figure 6**. The value is judged from the prospect of goods, as well as from the prospect of the organization as a whole.

Analyzing **Figure 7**, we can identify some important measures that may improve the decisional process. Thus using interactively the accounting management system is appreciated by

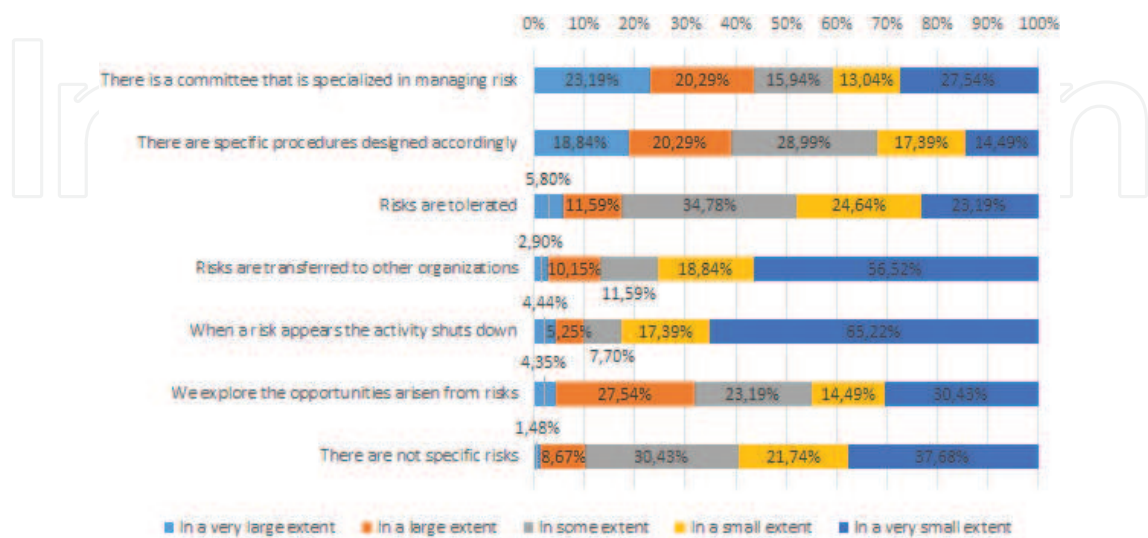
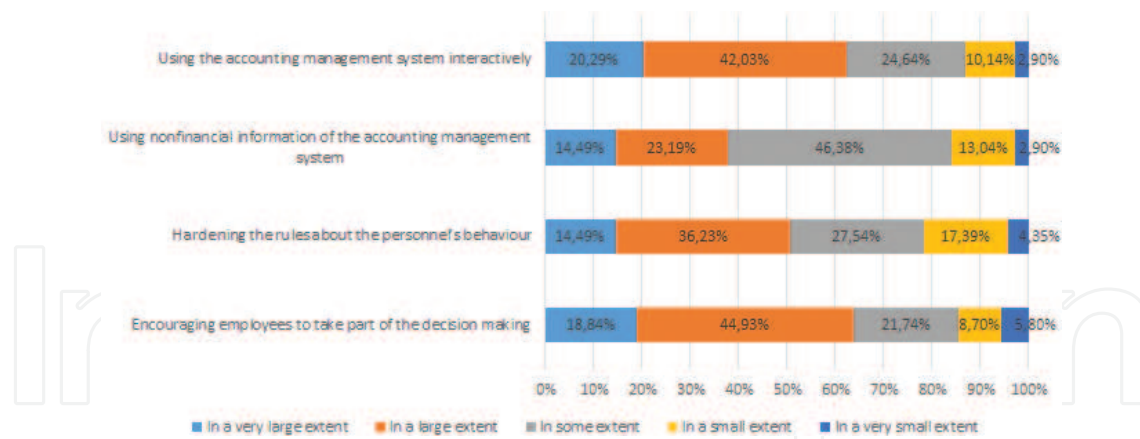


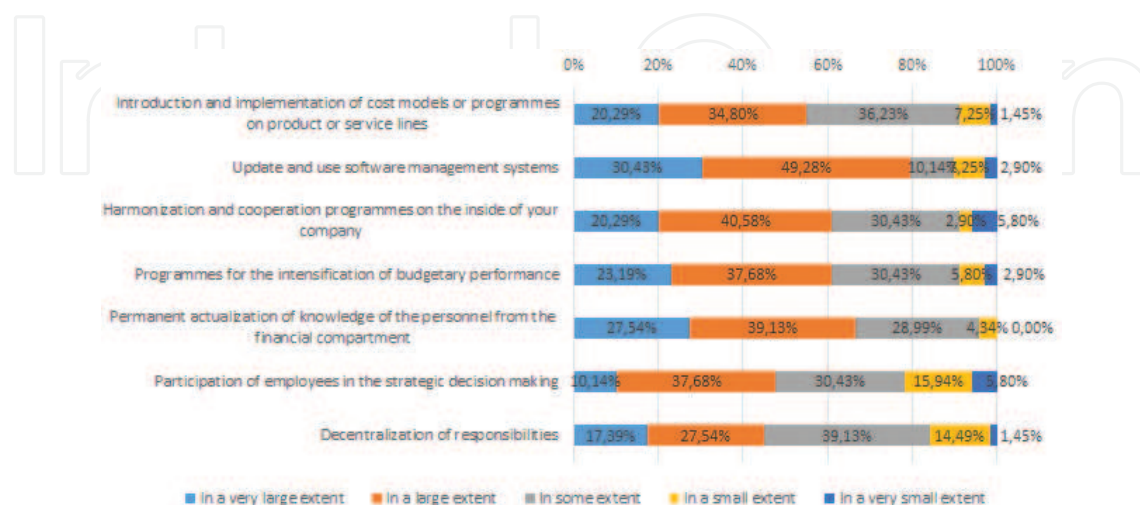
Figure 5. Ways of handling risk. Source: Own processing.



**Figure 6.** Factors that positively influence the decision making process. *Source:* Own processing.

42.03% of the decision makers in great extent; the encouraging of employees to participate in decision making is appreciated in a very great extent by 18.84%; using nonfinancial information and hardening the rules about the personnel's behavior 14.49%.

The only inexhaustible resource, the information has become today an authentic power factor, a good social that influences directly the wealth of a people. The most profound change that Romanian economical entities go through is the one linked to the generating, selecting, elaborating, and spreading the information. Organizations cannot exist outside communication that they generate and intermediate. Most of the respondents have agreed upon opinions which say that accounting has the purpose of supplying information that can represent with accuracy the financial position, the performances and the changes in the financial position (39.13%), in a shape and form that is most useful to those who use accounting information in order to fundament their decisions. Accounting information plays a decisive role in the testing of the decision factors with essential elements of security of a judicious economical mechanism that may favorite, on the medium and long run, the profitable integration of economic entities in the competitive market environment.



**Figure 7.** Measures that may improve the decisional process. *Source:* Own processing.

## 5. Conclusions and proposals

The results target especially the behavior issue of management decision making in the context of implementation of corporate governance principles. Similar past studies include observation and empirical studies of the management decision making behavior, experiments based on observing in order to highlight some particularities of management decision making behavior. Other researchers have also analyzed factors used by managers in making their decisions when projects are terminated [25]. Many times decision makers can use rational models that do not fit analytical recommendations. Normative papers in these fields insist upon the way decisions should be made, pointing out that often situational and personal factors may intercede with the managers when applying without changing the standard methods. This is a less researched area of risk management although with the developing of risk management techniques, scientists admit that existing techniques are insufficient. As a result, the results of this research paper may be used when speaking about some of these specific techniques.

We have chosen to use a qualitative, a direct, a selective, and base on questioners research in order to find out the opinion of decision maker on corporate governance—risk management—decisions, in the organizations they are part of. In this chapter, managers answered the questioner. The questioner was composed of a series of questions, 24 items, questions with free and closed responses, with the goal of identifying the large range of particularities of the studied field. The purpose of using this research instrument was to tackle different aspects of the decisional models and decisional process, like the rational model, incremental, hands-on, information sources that are used by different actors in making decisions, actors that take part of the decision making, what are the characteristics of a decision and the style of leaders when they make a decision.

The results of the study offer stakeholders a model that tries to encourage the risk managing practices in their investment. First of all, they should try and rethink the easiness with which issues can be solved after they have occurred, because, they resort to risk management when they perceive the solving of the issue with a minimal effort. A way to do this could be to look at real effort cost of issue solving from typical scenarios with which the entity is confronting with.

Moreover, top managers should try to implement the risk management policies in their companies. These policies should be oriented toward current practice of risk management. Therefore, policies should be more concentrated on the process rather than results. Managers should not be allowed to resort to hazard but should be rewarded for the rigorous performance in risk management, no matter if the effort of risk managing is eventually necessary.

When auditing the practices of risk management in an organization, top managers should show a great deal of attention to ambiguous situations, because they are the ones managers are usually tempted to give up in risk management. All of this makes the monitoring of the risk management process an important one.

The research also offers perspectives for the individual players, when they are sensitive and are tempted to avoid risk management. Another implication of this study is that the benefits,



of the risk management proactive practices, are tangible. Although the benefits of practices are not always easy to identify, there is a significant improvement of risk management efficiency and of entity performance. This means that the organizations can justify the time and effort assignment for the encouraging and performing of risk management practices.

Organizations should transform their organizational culture from one that is based only on risk control in one that allows a better understanding of risks. In his research, Nassim N. Taleb confirms again that, in the current context defined by high uncertainty, we cannot anticipate future events and their effect if we only use hindsight analysis of past data (forecasting) [26]. Having this in mind, we highlighted in this research paper the way entities integrate risk management strategies in their business. For more decision categories risk is, alongside efficiency, a major evaluation criterion for the decisional variables. The descriptive approaches from the decision theory have shown some particularities of the way managers act in uncertainty situation. Confronted with risk, they do not limited themselves to assess them, but also apply active measure of decreasing potential loses [4].

A final managerial implication refers to management performance. The research suggests specific techniques that a stakeholder can use. This may include supplying data with the help of which he may make risk management decisions and can communicate issues that may appear and the way they need to be approached. For example, this may include a list of common issues with which other investors may have confronted. This would offer an historical set of data that can be used in risk management. Though the assisting in identifying of known risks, this reduces the unforeseen role of risk in the discouragement of risk management. Moreover, by classifying risk by their gravity and frequency, stakeholders can be guided when it comes to situation they need to be careful about.

McGrath writes about the limitations of different methods of research: field studies, field experiments, experimental simulations, laboratory experiments, thinking tasks, sample surveys, formal theory, computer simulations, etc. They vary according to level of implication of the participant (and therefore, the risk that the researcher may change the behavior of subject that needs to be studied) and his concern for the universal behavior versus specific behavior. Among these methods of research, the sample survey is the most often used instrument in the research of universal behavior, rather than in special behavior research (which is in general is better done through technics like field studies). The survey is also discreet enough for the participant, compared to extremely invasive research methods, like the laboratory experiments [27].

The limitations of the current study are related to the existence of difficulties in the choosing of the indicators for every class of determinants, conditioned by the necessity to similar highlight of them and the magnitude of the sample from the qualitative analysis. We express our belief that the current paper answers to some challenges associated to scientific endeavors shown in the field, which remains in the difficulty of understanding and assuring the comparability at a global level.

I believe that the present paper brings a series of contributions to the research evolution in the risk management field associated with decisional processes, in the context of respecting



the principles of corporate governance, build on a series of novelties and originality elements. The extent to which companies respect the principles of corporate governance becomes a more and more important factor in the decisional process. The relationship between the corporate governance practices and the more international character of investments gains a greater relevance in the context of listed companies, well managed, with strong structures in corporate governance, with adequate social and environment programs, have a superior marker performance, rather than others.

## Author details

Florin Boghean\* and Carmen Boghean

\*Address all correspondence to: florinb@seap.usv.ro

Faculty of Economic Science and Public Administration, Ștefan cel Mare University, Suceava, Romania

## References

- [1] Bernstein P. *Against the Gods: The Remarkable Story of Risk*. John Wiley&Sons Inc; New York, 1996.
- [2] Hacking I. *The Emergence of Probability*. Cambridge University Press; New York and London, 1975. p. 144.
- [3] Hald A, McClintock B. "A. De Moivre: 'De Mensura Sortis' or 'On the Measurement of Chance'". *International Statistical Review* Vol.52, no. 3; 1984. pp. 229-62. doi: 10.2307/1403045
- [4] Mohammed A, Sykes R. *Black Swans Turn Grey. The Transformation of Risk*. PricewaterhouseCoopers International Limited (PwCIL); January 2012.
- [5] Nocco BW, Stulz, RM. *Enterprise Risk Management: Theory and Practice*. National Bureau of Economic Research (NBER); European Corporate Governance Institute; July 2006.
- [6] Neumann JV, Morgenstern O. *Theory of Games and Economic Behavior*. Princeton, NJ: Princeton University Press; March, 2007. pp. 1903-1957.
- [7] Thaler RH. *Behavioral Economics*, NBER Report. National Bureau of Economic Research; 1995. pp. 9-13.
- [8] Kaherman D, Tversky, A. Choices, values and frames. *American Psychologist*, vol. 39, no. 4; 1984. pp. 342-347.
- [9] Pratt JW. Risk aversion in the small and in the large enterprises. *Journal of the Econometric Society*, vol. 32, no. 1/2; 1964. pp. 122-136.
- [10] Arrow K. Extended sympathy and the possibility of social choice. *American Economic Review*, American Economic Association, vol. 67, no. 1; 1977. pp. 219-25.

- [11] Markowitz HM. Portfolio selection. *Journal of Finance*, vol. 7, no. 1; 1952. pp. 77-91.
- [12] Markowitz HM. *Portfolio Selection: Efficient Diversification of Investments*. Wiley & Sons, Inc. London, 1959.
- [13] Sharpe WF. Capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of Finance*, vol. 19, no. 3; 1964. pp. 425-442.
- [14] Stanley K, Garrick BJ. On the quantitative definition of risk. *Risk Analysis*, vol. 1, no. 1; 1981. pp. 11-27.
- [15] Lowenstein R. *When Genius Failed: The Rise and Fall of Long-Term, Capital Management*. Random House; New York, 2000.
- [16] Patterson S. *The Quants: How a New Breed of Math Whizzes Conquered Wall Street and Nearly Destroyed It*. New York: Crown Business; 2010.
- [17] Cooper C. *The Blackwell Encyclopedia of Management*, 2nd ed, vol. IX. Blackwell Publishing Ltd; Oxford, UK, 2005.
- [18] Lewis M. *The Big Short: Inside the Doomsday Machine*. Norton & Company, Inc.; New York, 2010.
- [19] March, JG, Shapira Z. Managerial perspectives on risk and risk taking. *Management Science*, vol. 33 no. 11; 1987. pp. 1404-1418.
- [20] MacCrimmon KR, Wehrung D. *Taking Risks: The Management of Uncertainty*. New York: Free Press; 1986.
- [21] Khatrri N, Alvin NG. The role of intuition in strategic decision making. *Human Relation*, vol. 53, no. 1; 2000, p.57-86.
- [22] Drucker P. *Managing for Results*. New York: HarperCollins; 1993.
- [23] Woiceshyn J. A model for ethical decision making in business reasoning, intuition and rational moral principles. *Journal of Business Ethics*, vol. 104; 2011, p.311-323.
- [24] Woiceshyn J. Lessons from "Good Minds": How CEOs use intuition. Analysis and guiding principles to make strategic decisions. *Long Range Planning*, Vol. 42, no. 42; 2009, p. 298-319.
- [25] Dilts DM, Pence KR Impact of role in the decision to fail: an exploratory study of terminated projects. *Journal of Operations Management*, vol. 24, no. 4; 2006. pp. 378-396.
- [26] Taleb NN. *The Black Swan: The Impact of the Highly Improbable*. Random House; New York, 2007.
- [27] McGrath JE. Dilemmatics: the study of research choices and dilemmas. *American Behavioral Scientist*; 1981. p. 179.

