

**DECISION THEORIES AND THEIR IMPLICATIONS: UNDERSTANDING THE  
DYNAMICS OF DECISION-MAKING**

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**Abstract:** Decision-making is a central function of management. It is a complex process which requires a high cognitive commitment, because the decision-maker has to assess and choose between different courses of action. Moreover, the decision-making is considered a continuous and dynamic process which implies a choice and is oriented to the achievement of the organizational objectives. In the literature can be found various theories and models of decision-making. The higher attention towards the decision-making process is a consequence of the understanding of its importance in creating sustainable competitive advantages. In a dynamic and turbulent environment becomes much more difficult to achieve and maintain a good competitive position. The decision-making process is studied by a number of disciplines such as philosophy, mathematics, statistics, psychology, sociology, economics, management, political and social sciences. In the decision-making theory we can distinguish two main approaches: the normative theory and the descriptive theory. The normative theory, based on the concept of economic man, studies the way in which decisions should be made by rational decision-makers. The descriptive theory is strongly related to the concept of bounded rationality and tries to describe how real decision-makers behave when making decisions. The normative approach support an analytic decision-making, while the descriptive approach an intuitive one.

The main goal of the current research is to understand how the decision-making happens and its dynamics. Thus, we analyze and discuss about the various decision-making theories in order to know the behavior of the decision-maker in different situation. The intention is to identify variables and elements and to discover possible relationships between them, so as to be able to define some general reflections about the decision-making. Without doubt, from Barnard to Simon, from Kahneman and Tversky to Klein, the way of perception of the decision-maker and decision-making process has changed a lot. Each one of the theories reflects the changes of its period regarding the perception and the functioning of the organization. So, the criterion of choice may be different from organization to organization, from an individual to another. It varies between optimization, satisfaction, negotiation and agreement, casualness. What we can say is that there are important differences between the theories, but also many aspects in common. However, is impossible to define the best decision-making model. Each one of them is valid according to the characteristics of the problem and context.

**Keywords:** organization, decision-making process, decision-making theory, bounded rationality

## 1. INTRODUCTION

In the decision-making theory, we can distinguish two main approaches: the normative theory and the descriptive theory. The normative theory, whose development can be traced back to the late 40s, studies the way in which decisions should be made by rational decision-makers. Referring to the classical theory of absolute rationality, the normative approach is based on the existence of an economic person (*homo economicus*). The concept of the economic person refers to a rational individual which in the decision-making process is guided by the principles of the scientific school and always tries to optimize. This is possible given that this approach argues that the decision-maker has complete information, a system of precise preferences and is able to analyze all the possible alternatives. In addition, he can use scientific methods to identify the best alternative. Normative theories arise in the context of disciplines such as economics, mathematics and statistics. As a result, they include the development of mathematical models for making an optimal choice.

The descriptive theory is related to Kahneman and Tversky studies in the early 70s. Already Simon (1956), with the concept of bounded rationality, supports the need to revise the normative theory. The decision-maker does not choose the optimal option, but a satisfactory alternative, because among others he does not have complete information and his processing capacities are limited. Starting from the concept of bounded rationality, through empirical studies Kahneman and Tversky have tried to show that the axioms of the theory of expected utility are violated. Their contribution with the prospect theory and heuristics becomes important within the descriptive approach. Descriptive theories arise in the context of disciplines such as management, psychology, sociology, political science, anthropology and try to describe how real decision-makers behave when making decisions.

The decision-making process is studied by a plurality of disciplines which are differentiated for the approach to which they refer. In this paper is discussed about the main theories of the decision-making.

## 2. THE AIM OF THE STUDY AND RESEARCH QUESTIONS

The current paper tries to understand how the decision-makers behave when they have to make a choice. About the decision-making is discussed a lot. This is because some contextual factors have changed significantly. Increasingly organizations are operating in a dynamic and turbulent environment. In these conditions, they have to make decisions for new problems or situations. Most of decisions are therefore non-programmed and unstructured, accompanied by risk and uncertainty. The higher attention and efforts in understanding the various aspects of the decision-making is evidenced by numerous studies in this domain. Making good decisions and their effective implementation determine the organizational performance. Organizations have understood how much important is the decision-making process for creating competitive advantages, helping managers to identify and choose better courses of action and quickly than competitors.

The main goal of the current research is to understand how the decision-making happens and its dynamics. Thus, we analyze and discuss about the various decision-making theories in order to know the behavior of the decision-maker in different situation. The intention is to identify variables and elements and to discover possible relationships between them, so as to be able to define some general reflections about the decision-making.

To support the main purpose, the research questions are as follows:

1. How has changed over time the perception of the decision-maker and decision-making process?
2. Are there important differences between the theories of decision-making?
3. Can we say which decision-making model is the most valid?

## 3. RESEARCH METHODOLOGY

For this paper is adopted the literature based research methodology. So, the study starts bringing a general theoretical framework of some decision-making theories. It continues trying to elaborate some implications and final conclusions in order to understand the decision-maker behavior. This methodology assumes importance because analyzing and discussing the theoretical basis of decision-making theories we can:

- find new ideas for future researches;
- define different objects of investigation;
- elaborate appropriate research designs with the respective objectives and hypotheses to be tested.

## 4. DECISION-MAKING THEORIES

Referring to the bureaucracy model of Weber (1922), any personal initiative is considered a deviance to be repressed. The development of social sciences and organizational studies has put into question the effectiveness of such model. With the theory of cooperation and participation, Barnard (1938) argues that for understanding the way organizations work, is necessary to know the reasons that guide individuals and groups to the achievement of organizational objectives. Barnard distinguishes between organizational and individual goals and discusses how such goals may converge. In this regard, he refers to the concepts of effectiveness and efficiency, explaining the correlation between organizational objectives and effectiveness, and efficiency and individual objectives. The author focuses in particular on the effectiveness, as the organization's ability to achieve its goals, which is very important for the achievement of individual goals.

According to Barnard (1938), it is important the involvement and participation of employees in the decision-making process. He emphasizes the participation because often the organizational objectives overcome the personal abilities, and given that the organization is a cooperative system the consensus become important. Moreover, a participatory decision-making process makes easier the phase of choice. Only an effective cooperation between the organization and individuals increases the individual commitment. In this context, Barnard underlines that management must be able to establish and manage a system of incentives which makes employees to work much harder for the achievement of organizational objectives. Another very important aspect discussed is related to the executive functions. The author believes that the manager's task is precisely the management of the relationship between contributions and incentives, as the only way to orient the individual commitments toward organizational goals.

The theory of expected utility describes a decision-making model which is based on the normative theory of decision (Schwartz et al., 2002). It is not a managerial theory, but for a long time has helped the understanding of managers' behavior when faced with the need of making a choice. The theory of expected utility tries to define some universal principles in order to facilitate the evaluation phase. The first who spoke of expected utility was Bernoulli (1738). According to him, for a rational decision we must maximize the expected utility and not the total profit. Only with the contributes of Von Neumann and Morgenstern (1947) the expected utility maximization is transformed into a decision-making criterion. The theory is based on the use of mathematical models and on the assumption that the decision-maker is rational. To determine whether a result is better than

another, we cannot refer only to the monetary consequences, but we must also consider the expected utility function. The utility is a numerical value that represents the satisfaction of the decision-maker which derives from an alternative. We can distinguish between ordinal utility and cardinal utility. According to the ordinal utility, the alternatives are listed in order from the most to the least desired without specifying numerically how much, while the cardinal utility gives the alternatives a numerical value for understanding how much an option is preferable compared to another. It must be emphasized that the defining of the utility of an alternative is entirely a subjective process.

Von Neumann and Morgenstern (1947) have shown that if the behavior is based on certain axioms, the individual's choices lead to the maximization of expected utility. The axioms to which the authors refer are:

1. *the axiom of independence* states that if different alternatives lead to the same result, then the choice should not depend on that outcome;
2. *the axiom of transitivity* states that if an individual prefers X to Y and Y to Z, then he must prefer X to Z;
3. *the axiom of dominance* states that if X overcomes Y according to one criterion and is just as good according to other criteria, then X dominates Y;
4. *the axiom of invariance* states that the order of preference for the different options cannot be changed.

Before the theory of bounded rationality, the decision-making process was based on the concept of absolute rationality. Referring to such concept, the organization is perceived as a closed system which operates in a stable environment. Under these conditions, the decision-maker has complete information on the problem or situation, can list all the alternatives and all the consequences of an alternative and he chooses the optimal one (Hodgkinson and Starbuck, 2008). Contrary to the classical decision theory, the theory of bounded rationality perceives the organization as an open system, unable to operate isolated from the environment. Because of the complexity and dynamism of the environment, the situations for which managers must make a decision are not structured. The available information is incomplete. So, the decision-maker operates in a context he does not know, for which he does not have all the information. Consequently, for the decision-maker is impossible to identify all the possible alternatives, but only some of them. Moreover, it is impossible to evaluate all the consequences of each alternative. Due to the bounded rationality the decision-maker cannot establish an order for his preferences, which may vary over time. The incomplete information and uncertainty orient the decision-making towards intuition. Unlike the classic model which tries to elaborate rules that simplify the decision-making process, the bounded rationality model emphasizes the fact that there are no universal rules and principles (Schwartz et al., 2002). So, the decision-making process cannot be synoptic, but sequential. In this regard, Simon refers to the procedural rationality and principle of feedback. He uses the analogy between the chess player and the corporate decision-maker. The determination of the strategy is made a bit at a time, based on the strategies of adversary. Because of cognitive limitations, the impossibility of having all the information and knowing all the possible outcomes, the decision-maker does not have an absolute rationality, but a bounded rationality.

Cyert and March (1963) develop further the concepts proposed by Simon. The authors analyze the influence of the decision-making process on the organization's objectives, referring to the concept of the coalition. They argue that over time the coalition changes and with it the organization's goals. The theory of organizational behavior of Cyert and March (1963) is elaborated on the concept of bounded rationality and the organization is perceived as a coalition of subjects with different objectives. As a result, the interests of the organization and those of groups and individuals who are part of it are continuously negotiated. The authors emphasize the uncertainty of the environment and the importance of organizational learning.

Cyert, March and Simon are also noted for elaborating the Carnegie model, which states that organizational decision-making process involves several actors and is the expression of certain policies. So, according to Carnegie model decisions are not made by a single individual, but by a coalition. The power of the coalition is greater than the power of the individual, so it makes possible the achievement of objectives otherwise unattainable. Within a coalition are included also subjects that are not part of the organization, as union representatives or external advisors. The formation of coalition is the result of political action of its members. Besides the greater power compared with the individual, coalitions arise for two main reasons:

1. Cognitive and time limits, so the decision-maker does not have all the necessary resources (information and professional skills) to structure the problem, possible alternatives and their consequences;
2. Objectives of the individuals involved in the decision-making process can be contradictory. By its very nature, a coalition operates on the basis of the negotiation, enabling the consensus.

Relying on negotiation processes and bounded rationality means that decisions made by the coalition are not optimal, but satisfy the coalition members. In situations characterized by high uncertainty and conflicts, optimal

decisions are impossible. The Carnegie model noted that the coalition formation is a long process that requires time and includes discussions and negotiations, vast resources in terms of time and individuals involved. Since consensus is difficult, the first satisfactory solution is accepted and when it is possible is formalized by policies and procedures which avoid the coalition reforming if a similar problem occurs. But when it comes to non-programmed decisions, the formation of the coalition becomes necessary.

The incremental theory describes another decision-making process. Lindblom (1959) perceives the organization as a place and result of negotiations. Organizational decision-making is a political process that involves many actors with different and conflicting objectives and interests. As a result, the negotiation becomes important. For Lindblom there are many rationalities, given that many decision-makers are involved and therefore the decision is the result of negotiation and compromise. The decision-makers are subjects of bounded rationality, but also of fragmentation processes. Thus, the decision-making process is divided into a sequence of activities influenced by different protagonists. March and Simon (1958) argue that the principle of incremental strategies is the minimum acceptable risk. In this way, the smaller are the deviations from a consolidated situation, the smaller will be the effects and therefore the risk of negative consequences. So, decision-making processes are not as described by absolute rationality, but proceed by trials and errors, through interactions and agreements, based on decisions made in the past (Mariani, 2009). It can be said that the contribution of such decision-making approach consists in preventing the concentration of power and in allowing in many circumstances to decide relying on a better level of information and greater rationality (Lindblom, 1959). So, we can say that the incremental theory describes a decision-making process that uses as a criterion of choice the imitation and the risk reduction, making unnecessary the problem structuring.

After Lindblom different authors studied the incrementalism. Focusing on strategic decisions, Quinn (1980) argues that the decision depends on the learning process of top management, which has to be able to link different decisions. In addition, the decision-making process is intuitive and therefore cannot be formalized. The implementation phase is a very important source of learning. On the other hand, Mintzberg (1985) emphasizes the dynamism of the decision-making process because of its duration and the changes of contextual factors. The final solution may be different from what is expected and may occur several decisional arrests that require turning back.

The theory of bounded rationality and the incrementalism help the understanding of the decision-maker behaviors and the final choice in situations of uncertainty, while the “garbage can” theory of Cohen, March and Olsen (1972) refers to a context characterized by ambiguity. The uncertainty may be faced searching for more information, while the ambiguity implies confusion and chaos. Consequently, the authors of the theory perceive the company as an organized anarchy. Organized anarchies are organizations characterized by problematic preferences, unclear technology, and fluid participation (Cohen, March and Olsen, 1972, p.1). The decision-making process described by the authors is not rational, because the participants cannot define objectives and preferences before the process, but only during the process. Such model has a political nature, is very complex and unpredictable (Cabantous, Gond and Johnson-Cramer, 2008). Moreover, the preferences of the decision-makers are unstable and inconsistent. Another condition that increases the ambiguity is the transitory participation in the decision-making process (Hodgkinson and Starbuck, 2008). The “garbage can” theory refers to four elements:

1. *Problems*, the gap between desired results and obtained results;
2. *Solutions*, ideas and options that can be adopted regardless of problems;
3. *Participants*, individuals acting within or outside the organization;
4. *Choice opportunities*, are opportunities from which the organization expects to make a decision.

The decision depends on the random encounter of problems and solutions. These variables may encounter each other helped by time and contingent factors. From this point of view, an organization is a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might be the answer, and decision-makers looking for work (Cohen, March e Olsen, 1972, p.2). So, we may say that the decision-making is not at all rational. Decisions are taken randomly, because everything depends on the encounter between the elements discussed above and in these circumstances the goals may be different from those established.

The prospect theory of Kahneman and Tversky (1979) describes the real behavior of the decision-maker. According to the authors of the theory for making a choice are used the available information and heuristics. Recalling the classical decision-making theory, a rational individual tries to maximize his own welfare. He knows very well the personal preferences and is able to arrange them in ordinal sequence. The prospect theory argues that the decision-making process is based on a reference point. Consequently, this process can be very

subjective. The theory assigns a great importance to the way the situation is interpreted, given that the empirical researches show that for the same problems, but described in different ways, the decisions are different.

The classical theories do not take into account many factors that influence the decision-making in a natural context. When taking a decision, we have to consider the time pressure, uncertainty, dynamic environment, if the objectives are not defined or tasks are ill-structured, the presence of other decision-makers, organizational goals and norms (Rosen, Salas, Lyons and Flower, 2008). Klein (1989) proposed a decision-making model, known as "recognition-primed decision", with the intention to describe how an experienced individual takes decisions in a very short time. The author is based on some observations in an operational context. The naturalistic theory focuses on how the decision-maker uses his expertise to make decisions quickly without the need of analysis as in the normative model. This theory emphasizes that when faced with a problem or situation, the decision-maker tries to find in his memory problems or similar situations and tends to decide in the same way or to adapt a choice of the past. According to the naturalistic theory, the decision-making process consists of three main steps (Klein, 2008):

1. The perception and the recognition of the problem;
2. The assessment of the actions that can be adopted to solve the problem;
3. The simulation of the results that can be obtained by adopting a certain course of action.

## 5. IMPLICATIONS OF DECISION-MAKING THEORIES

In the late 40s, the contribution of Barnard on the study of organizations emphasizes the importance of the transition from a centralized individual decision-making process to the participatory decision-making. He introduces the concept of the organization as a cooperative system and of the cooperator member. Barnard recognizes the personal limitations of an individual and believes that group working is the only way to overcome these limitations and achieve individual goals. Taylor, relying on the scientific management and deterministic principles, perceives the man as a machine and as a result the task assigned to him must be defined and limited. The individual behavior should conform to determined rules and norms, without taking individual actions or initiatives. According to the scientific management the decision-making power is concentrated on managerial positions. Instead Barnard talks about the decision-making process as a consensual process. To ensure the collaboration Barnard focuses in particular on the non-material incentives. But can we be sure that such incentives orient members of the organization towards a high level of commitment compared to material incentives? However, this theory introduced in a period of important changes, can be considered very valid for the contemporary management. The Human Relations School has beginning to influence the management of the organizations, which are perceived as social systems. In addition, Barnard emphasizes the importance of the distinction between ownership and management. Even if managers are required to identify themselves with the organization, they remain a category of employees and personal interests often prevail over the corporate ones. Orders acceptance and decision-making process are not always based on consensus, as Barnard believes. In addition, the author emphasizes the non-material incentives. This leaves open the possibility of resorting to manipulation mechanisms in order to obtain the cooperation of employees. In this case, the decision-making process and the execution of the orders are not the result of a process of participation and cooperation.

The theory of expected utility studies the decision-making under risk, that is when individuals or groups must conclude by knowing the possible events and their probability. The evaluation of alternatives based on their expected monetary value is not always acceptable by managers. Even when the expected monetary value may be equal, the alternatives may not have the same attraction for the decision-maker. To understand this we must refer to the concept of utility. The theory of expected utility is normative, is based on mathematical models and assumes in a fundamental way that rationality is the basis of the behavior of individuals and groups. This theory simplifies too much the decision-making process. One of the main reasons for criticism is the gap between the ideal behavior of the normative model and the real behavior of the decision-maker. Moreover, the theory does not take into account the complexity of the decision, the emotional evaluation of alternatives and the individual's cognitive limits.

The theory elaborated by Simon concerns the cognitive limits of the decision-maker and is based on the observation of the behavior of a real decision-maker. The organization is perceived as a complex cooperative system, where its activities affect the bounded rationality of individuals and vice versa (March and Simon, 1958). Since the 50s, relying on the contribute of Barnard, Simon starts from the attempt to describe how the real decision-makers make decisions. The authors in their works refer to the cooperative system, but with an important distinction. Barnard insists on the physical limitations that orient the individual to cooperate, instead Simon focuses on cognitive limitations. Because of the complexity of the problems and the fact that decisions must be taken quickly, the decision-maker is not able to properly evaluate the problem and to identify any

possible alternative. To this we can add the cognitive limits of the decision-maker, which often are compensated through the use of heuristics, procedures or strategies that does not require high cognitive efforts. In fact, the limited rationality perspective is often associated with intuitive decision-making processes, based on experience and personal judgment rather than on logic or reasoning. Human behavior is intentional and should be studied within the organization. Simon not only considers the decision-making crucial for understanding the organizational behavior, but associates the organization theory to the behavioral sciences, especially to psychology (Hodgkinson and Starbuck, 2008).

The incremental model is based on the concept of bounded rationality, but it emphasizes the multiple rationality. The decision-making process cannot be individual, since in the process are involved multiple actors. The decision is made according to the policy of agreement. However, the incremental theory is not valid for any problem or situation, but requires some conditions as complexity, unstructured problem, inexperienced decision-makers, lack of clear objectives.

Some situations are not characterized by complexity and uncertainty, but by ambiguities. In this regard, has been developed the model of the “garbage can”, according to which the final decision depends on the encounter between problem and solution. The solutions can be filed even when the problems do not exist and the decisions do not always solve problems. If we make a comparison between the different decision-making processes, we can say that the classical model refers to the use of scientific methods, instead models based on the concept of bounded rationality consider necessary the use of intuition and heuristics. The theory of “garbage can” perceives the decision-making process as random. The decision is made only if the problem, its solution and the appropriate participants can meet at the same time. However, we must admit that such combination does not always happen and often the problems remain unresolved. Referring to this model, the question that arises is to understand whether this way of making decisions is reasonable, since it is decided randomly. In fact, even in reality often we have to decide under emergency conditions without evaluating all the alternatives and their consequences.

The final decision depends on how the problem or situation is framed, as suggested by the prospect theory. So, equivalent alternatives, but described in terms of gains or losses lead to different choices. According to this theory, the decision-makers tend to evaluate the results of the alternatives on the basis of a reference point or status quo, thus resorting to the framing effect. In this way, the decision-making process becomes too subjective. The naturalistic theory describes a new decision-making process, introducing the perception phase and the phase of recognition of the situation. This approach is favored by the development of some concepts of cognitive psychology as scenarios, schemas and mental models, that distinguish the expert’s behavior from that of a novice. The decision-making model elaborated by Klein describes how we can decide without the need to compare the alternatives. The question that arises is how we can arrive to the final choice without comparisons. All this is possible through the use of mental simulations of how a solution can operate in a specific context. The model is a mix of intuition and analysis. The recognition and understanding of the links between past and future problems is the intuitive part, while the mental simulation is the analytical part of the process. However, Lipshitz and Shaul (1997) believe that the model of Klein simplifies too much the decision-making process.

## 6. CONCLUSIONS

The decision-making theories have as their object of study the decision-making process. Some of these theories describe how the decision-maker should behave for arriving at the final decision, other theories describe how the decision-maker behaves in reality. From the discussion above we can now answer the research questions. Without doubt, from Barnard to Klein, the way of perception of the decision-maker and decision-making process has changed a lot. Each one of the theories reflects the changes of its period regarding the perception and the functioning of the organization. The differences between these theories can be better understood if they are grouped according to two approaches: normative and descriptive. However, even within descriptive approach there are differences between the theories. Absolutely, we cannot define the best decision-making theory. Each one of them is valid according to the characteristics of the problem

and context. The table below is a summary of the characteristics of the different theories, in order to facilitate the understanding of the different aspects and those in common.

**Table 1: Characteristics of decision-making theories**

Decision-making model	The comparison criterion					
	Decision-maker	Conditions of choice	of	Generation of alternatives	Way of choice	Criterion of choice

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<b>Normative</b>	One individual	Certainty	Full analysis	Calculations	Optimization
<b>Bounded rationality</b>	One individual	Risk, Uncertainty	Sequential analysis	Comparisons with expectations	Satisfaction
<b>Incrementalism</b>	Multiple individuals	Risk, Uncertainty	Little successive comparisons	Adaption to changes	Negotiation and agreement
<b>Garbage can</b>	Varied individuals	Ambiguity	None	The encounter between problems and solutions	Casualness
<b>Prospect theory</b>	One individual	Risk, Uncertainty	By the problem framing	Comparison with the reference point	Satisfaction
<b>Naturalistic model</b>	One individual	Risk, Uncertainty	Based on experience	Adaptions of past solutions	Satisfaction

**REFERENCES**

- [1] Barnard C.I. (1938), *The functions of the executive*, Cambridge, MA: Harvard University Press
- [2] Bernoulli D. (1738), *Specimen theoriae novae de mensura sortis*. In Bernoulli D. (1954), *Exposition of a new theory on the measurement of risk*, *Econometrica*, Vol. 22, No. 1, p. 23-36
- [3] Cohen M.D., March J.G., Olsen J.P. (1972), *A garbage can model of organizational choice*, *Administrative Science Quarterly*, Vol. 17, No. 1, p. 1-25
- [4] Cyert R., March J. (1963), *A behavioral theory of the firm*, Englewood Cliffs, New Jersey: Prentice-Hall
- Hodgkinson G.P., Starbuck W.H. (2008), *The Oxford handbook of organizational decision making*, Oxford: Oxford University Press
- [5] Kahneman D., Tversky A. (1979), *Prospect theory: An analysis of decision under risk*, *Econometrica*, Vol. 47, No. 2, p. 263-291
- [6] Klein G. (1989), *Recognition-primed decisions*. In Klein G. (1989), *Strategies of decision making*, *Military Review*, May, p. 56-64
- [7] Klein G. (2008), *Naturalistic decision making*, *Human Factors*, Vol. 50, No. 3, p. 456-460 Lindblom C.E. (1959), *The science of muddling through*, *Public Administration Review*, Vol. 19, No. 2, p. 79-88
- [8] Lipshitz, R., Shaul, O.B. (1997), *Schemata and mental models in recognition-primed decision making*. In Zsombok C.E., Klein G. (Eds.) (1997), *Naturalistic decision making*, p. 60-72, New Jersey: Lawrence Erlbaum Associates.
- [9] March J.G., Simon H.A. (1958), *Organizations*, New York: John Wiley and Sons
- [10] Mariani M. (2009), *Decidere e negoziare*, Il Sole 24 ORE, Milano
- [11] Mintzberg H. (1973), *The nature of managerial work*, New York: Harper & Row
- [12] Quinn J.B. (1980), *The incremental approach to strategic change*, *The McKinsey Quarterly*, Winter Issue, p. 34-52
- [13] Rosen P.A., Salas E., Lyons R., Fiore S.M. (2008), *Expertise and naturalistic decision making in organizational decision making: Mechanisms of effective decision making*. In Hodgkinson G., Starbuck, W. (2008), op. cit.
- [14] Schwartz B., Ward A., Monterosso J., Lyubomirsky S., White K., Lehman D.R. (2002), *Maximizing versus satisficing: Happiness is a matter of choice*, *Journal of Personality and Social Psychology*, Vol. 83, No. 5, p. 1178-1197
- [15] Simon H.A. (1956), *Rational choice and the structure of the environment*, *Psychological Review*, Vol. 63, No. 2, p. 129-138
- [16] Von Neumann J., Morgenstern O. (1947), *Theory of games and economic behavior*, New York: Princeton University Press
- [17] Weber M. (1922), *Economy and society*. In Jones G.R., George J.M. (2008), *Contemporary management*, Boston: McGraw-Hill/Irwin, 5<sup>th</sup> Edition