Research

International of Journal Management and Social Researches
Uluslararası Yönetim ve Sosyal Araştırmalar Dergisi
ISSN:2148-1415/ e-ISSN:2651-3072

Makale Başvuru/Kabul Tarihleri:
Received/Accepted Dates:
25.10.2019/06.12.2019

Volume 7, Issue 13, Year 2020

Understanding the Distribution of Organizational Decision-Making Authority

Dr. Murat ONUK
Business Administration Department,
Yeditepe University, Atasehir, Istanbul, Turkey
murat.onuk@yeditepe.edu.tr
ORCID: 0000-0002-9737-7386

Abstract

Effective decision-making in this world of growing dynamic complexity requires an expansion in the boundaries of existing mental models and development of additional tools to better understand how organizations behave as complex systems. The aim of this paper is to describe the development process of one of such tools (Onuk, 2009), developed to contribute to the understanding of the dynamics of managerial decision-making process by taking the levels of the organizational structure as one of the important dimensions of complex internal environment. An empirical study (Onuk, 2009) is realized with the application of the tool in the Turkish organization of a large global company. The study investigated decision-making process to understand how decision-making authority for different types of decisions, identified as strategic, tactical, and operational level decisions, is distributed throughout the organization levels, and, analyzed the impact of economic crisis on this distribution. Results of the statistical analysis proved that the survey tool developed for the empirical study is internally consistent and reliable as it satisfied the necessary quantitative and qualitative reliability and validity tests. As a result, the research provided a new, valid and reliable tool to understand the dynamics of the organizational behavior during the decision-making process.

Keywords: Organizational Behavior, Decision, Decision-Making, Decision-Making Authority, Management Levels, Organizational Structure, Complexity, Economic Crisis.

1. INTRODUCTION

A general class of complex systems is referred to as “complex adaptive systems”. Organizations can be thought of as examples of complex adaptive systems (Dooley, 2004: 354). In order to be able to survive in fast-changing environments, organizations need to be smart, agile, and responsive to the changes. In order to be able to do that, organizations need to respond and make smart decisions at ever-increasing speed (Wheatley, 2001).

1.1. Problem Statement

One of the major problems for the management of organizations is to understand the dynamics of decision-making in the right way. Some of the reasons for its importance are stated as follows:

1. The decision-making processes are of central importance to business administration and organization theory (Cyert et al., 1956).
2. The decisions of a firm’s management have at least as great an impact on the firm’s performance as overall industry factors (Wheelen, Hunger, 2006).
3. As organizations grow larger and more complex, with increasingly uncertain environments, decisions become more complicated and difficult to make (Wheelen, Hunger, 2006).

4. Effective decision-making and learning in a world of growing 'dynamic complexity' requires system thinking to expand the boundaries of existing mental models and develop tools to understand how the structure of complex systems creates their behavior (Sterman, 2001).

1.2. The Aim

The aim of this paper is to describe the development process of a survey tool, developed to contribute to the understanding of the dynamics of managerial decision-making process by taking the levels of the organizational structure as one of the important dimensions of complex internal environment.

An empirical study is realized with the application of the tool in the Turkish organization of a large global company. The study investigated decision-making process to understand how decision-making authority for different types of decisions, identified as strategic, tactical, and operational level decisions, is distributed throughout the organization levels, and, analyzed the impact of economic crisis on this distribution.

1.3. The Importance of the Study

According the Cyert and his colleagues (1956), decision-making which is defined as choosing one course of action rather than another, or finding an appropriate solution to a new problem posed by a changing world, is commonly asserted to be the heart of executive activity in business. If this is so, a realistic description and theory of the decision-making process are of central importance to business administration and organization theory (Cyert et al., 1956).

In addition to operating in a complex world, within the organization, decision-making is a part of a complex integration. That is, in an organization, decisions of individual managers must be integrated with decisions of others to form a mosaic of corporate policy. This integration of individual decisions has become the major concern of organization theory (Lindblom, 1959).

Decision makers play a critical role in decision-making process. Decision makers have a strong influence on a firm's evolution. Expansion, contraction or stagnation of a firm is the result not only of exogenous forces, but also of the activities of the management (Krystek, 1987; cited in Feichtinger, Kopel, 1993). One reason for the relatively under-developed behavioral basis of decision-making is the nature of the decision maker. The basic decision-making unit in the business context is the business organization or firm and this is a far more complex structure than, say, the consumer making a shopping decision. Any attempt to understand decision-making within a business context, therefore, must take into account the structure of business organizations (Dicken, 1971).

As a result, the study is important firstly because of the importance of decision-making as explained above. Secondly, the applications of complexity theory to organization science are limited. Taking the complex structure of business organization and the effects of complex environment into consideration, and by analyzing the dynamics of decision-making, the study provides such an application.

1.4. Management Questions Addressed

The study addressed the following management questions:

- What is decision?
- What are the different types of decisions?
- Who are the decision-makers?
- How are the decisions made?
- What does "decision-making authority" mean?

- How are the different types of decisions distributed throughout the different levels of organization?
- How is the decision-making authority distributed throughout the different levels of organization?
- What is crisis? What are the types of crises? What is economic crisis?
- How is the distribution of decision-making authority affected by economic crisis?

1.5. Methodology

The design of the research satisfies the requirements stated by Dooley and Van de Ven (1999) by providing means of observation and classification for the dynamics of decision-making process. The design of the research is also able to formulate interdependencies mentioned by Levinthal and Warglien (1999), in such a way that the emergent behavior is analyzed.

As a general rule in social research, different research problems require different research approaches (Singleton, Straits, 1999). The present research design is based both on exploratory and conclusive research. It is exploratory, because the research aims to provide significant insight to our understanding of the dynamics of decision-making in organizations. It is conclusive, because it is meant to provide information that is useful in reaching conclusions.

Although most researchers do either quantitative or qualitative research work, some researchers have suggested combining one or more research methods in one study (Gable, 1994; Kaplan, Duchon, 1988; Lee, 1991; Mingers, 2001; Ragin, 1987; Myers, 1997). Triangular approach which is the combination of qualitative and quantitative methods is used in this research for the collection of data. Besides the questionnaire, different forms of data collection, such as interviews, use of expert knowledge, analysis of formal and informal procedures, interviews, and observation for obtaining necessary information for the understanding of decision-making process in target organization are also conducted in the study.

2. RESEARCH DESIGN AND METHODOLOGY

2.1. Research Outline

The research has gone through three sequential phases: (1) Preparation phase, (2) Design and development phase, and (3) Implementation and validation phase. These phases are briefly introduced below.

2.1.1. Preparation Phase

First stage of the preparation phase was a carefully designed literature survey which is conducted to compile necessary background information from the literature in the fields of decision-making, complexity, chaos, crisis, and organizational structure.

Second stage of the preparation phase was a preliminary research, realized in parallel to the literature survey. Major steps of the preliminary research are listed below:

1. Semi-structured face-to-face interviews with 12 upper-level managers (including the CEO and the CFO) and eight middle-level managers of Siemens Turkey on their perception of complexity, chaos and crisis were completed.
2. An Internet-based survey covering questions similar to the ones of face-to-face interviews was sent to 170 employees of Siemens Turkey. 98 responses were received from nine upper-level, 30 middle-level managers, 30 employees and 29 unknown positions. 4 out of 98 responses received were left fully empty. 73 surveys were fully answered. Rate of return is calculated as 43%. The

members of ‘imtes-tr’, ‘teknoloji-yönetimi’, and ‘ulusal-yenilik’ e-mail groups were also invited to participate in the same Internet-based survey. 33 participants replied with 16 full responses.

3. To receive expert opinions, face-to-face interviews with seven academicians on complexity and chaos were realized. These academicians were Prof. Dr. İ. Atilla Dicle, Prof. Dr. Ali Erkan Eke, Prof. Dr. Avadis Hacinliyan, and Asst. Prof. Dr. Ender Abadoğlu from Yeditepe University; and Assoc. Prof. Dr. Nuri Başoğlu and Assoc. Prof. Dr. Yağmur Denizhan from Boğaziçi University.
4. Three workshops on complex systems were realized via YUVAM (Yeditepe University Management Research and Applications Center) with 27 participants. First workshop was realized on April 30, 2007 with Prof. Dr. Avadis Hacınlıyan being the speaker. Second workshop was realized on May 15, 2007 with Asst. Prof. Dr. Sedat Şişbot (Department of System Engineering, Yeditepe University) and Asst. Prof. Dr. Ender Abadoğlu (Department of Mathematics, Yeditepe University) being the speakers. The last workshop was realized on May 28, 2007 with Prof. Dr. Vural Savaş (Department of Economics, Yeditepe University), Asst. Prof. Dr. Namık Çıblak (Department of Mechanical Engineering, Yeditepe University), Asst. Prof. Dr. Koray Şafak (Department of Mechanical Engineering, Yeditepe University), and Assoc. Prof. Dr. Yağmur Denizhan (Department of Electrical and Electronics Engineering, Boğaziçi University) being the speakers. In each workshop, the author also made a presentation on chaos and complexity.

All face-to-face interviews and workshops are voice-recorded and the contents of the recordings have been later typed in for further analysis.

2.1.2. Design and Development Phase

This phase included the finalization of the list of hypotheses to be tested and development of questionnaire for the measurement of decision-making authority. Selection of the target organization, receiving necessary authorizations from the management of the target organization, and fixing practicalities like the timing of the survey were also part of this phase.

Target organization is selected as Siemens Turkey, the general representative of Siemens AG in Turkey. Main reason of this selection was the ease of access to the management of Siemens Turkey as the researcher was employed in Siemens Turkey for almost 15 years.

Siemens AG is founded in 1847 and Siemens Turkey is founded in 1958. Being operational in nearly 190 regions around the world, Siemens AG is a global electronics and electrical engineering company operating in industry, energy and healthcare sectors. In fiscal year 2008 Siemens AG had 430.000 employees, revenue of €77.3 billion and an income of €1.859 billion (www.siemens.com).

An in-depth interview was realized with the CEO of the target organization, Mr. Hüseyin Gelis of Siemens Turkey, to receive information on the organizational structure and the effect of the current economic crisis on Siemens Turkey. Detailed information on the target organization is provided in related section.

2.1.3. Implementation and Validation Phase

A pilot study was conducted to validate the questionnaire before the actual application. For the pilot study 10 participants from 10 different organizations were selected. Six participants responded to the survey and shared their opinions. The survey is fine-tuned based on their feedback.

Invitation to the internet-based survey, collection of data, analysis and re-organization of the collected data, statistical analysis for the internal consistency and reliability of the instruments were all completed in this phase. Finally, the obtained results were analyzed and compared with the results of the literature review for validation.

2.2. Dimensions of the Research Method

Taking the Framework for Research Methods introduced by Meredith and his colleagues (1989) as the basis, at rational/existential dimension, this research is both logical/positivist/empiricist and interpretive. At natural/artificial dimension this study used semi-structured interviews, survey research, historical analysis, intensive interviews, expert panels and conceptual modeling.

The survey research method used was intended to measure the decision-making authority of individuals for different type of decisions. Like structured interviewing, this method allows for statistical analysis. It was more time efficient than interviewing, particularly at a distance because once properly designed, the survey can be sent to a large number of people with little extra trouble (Meredith et al., 1989).

2.3. Hypotheses Development

Based on the theoretical background, following steps are realized for the development of the hypotheses:

1. Identification of different types of decisions.
2. Matching different types of decisions with different managerial levels within organizational structure.
3. Identification of different decision samples for each type of decisions using the literature review.
4. Developing the decision samples as questions within a questionnaire with a quantitative scale to measure the authority level of an employee in taking a sample decision as he/she perceives it.
5. Identification of the employee's level in the organization structure with the use of demographics in terms of position level and in terms of distance of CEO measured with number of hierarchical levels between the employee's working level and the level of CEO.
6. Applying the questionnaire and using averages of answers collected, mapping the distribution of different type of decisions throughout different organization levels.

Since this study also aimed to analyze the effects of economic crisis on the distribution of decision-making authority throughout organization levels, the following additional steps were necessary during the development of the model:

7. Application of the same set of questions twice, first for the normal economic conditions, and second for the economic crisis conditions.
8. Comparing the distribution of the decision-making authority at each period, normal and crisis.
9. Using qualitative approach by developing suitable instruments to understand people and the social and cultural context in terms of the effects of economic crisis.

The details of the theoretical background used to define the steps followed for hypotheses development are given below.

2.3.1. Identification of Decision Types

For this study macro decisions identified by Aurum and Wohlin (2003) are taken into consideration because macro decisions focus on management activities at an organizational level. Following Alenljung and Persson (2008) and Harrington and Ottenbacher (2009), macro decisions are further

divided into three major decision types or levels: strategic, tactical and operational as detailed in Table 1.

Table 1. Types of Macro Decisions (Alenljung, Persson, 2008)

• **Strategic level** - mainly concern organizational considerations, such as the consistency of requirements with the product strategy or business goals • **Tactical level** – related to management control, focus on the project level, e.g. human resource planning • **Operational level** - involves making decisions on realization issues and on quality, classification, and properties of requirements

Within the research, each type of decision is taken as a component. Since two different contextual conditions, which are normal and crisis conditions, are examined, total number of components is six, such as:

1. Strategic level – Normal period
2. Strategic level – Crisis period
3. Tactical level – Normal period
4. Tactical level – Crisis period
5. Operational level – Normal period
6. Operational level – Crisis period

2.3.2. Matching the Decision Types with Organizational Structure

Taking the Mintzberg's organizational structure (1979), defined decision types are matched with the organizational structure and organizational chart as shown in Figure 1.

With this matching it is assumed that strategic level decisions are taken at strategic apex; tactical level decisions are taken at the middle line, techno structure, and support staff, and finally operational level decisions are taken in the operating core, as defined by Mintzberg (1979). The research aims to identify this distribution.

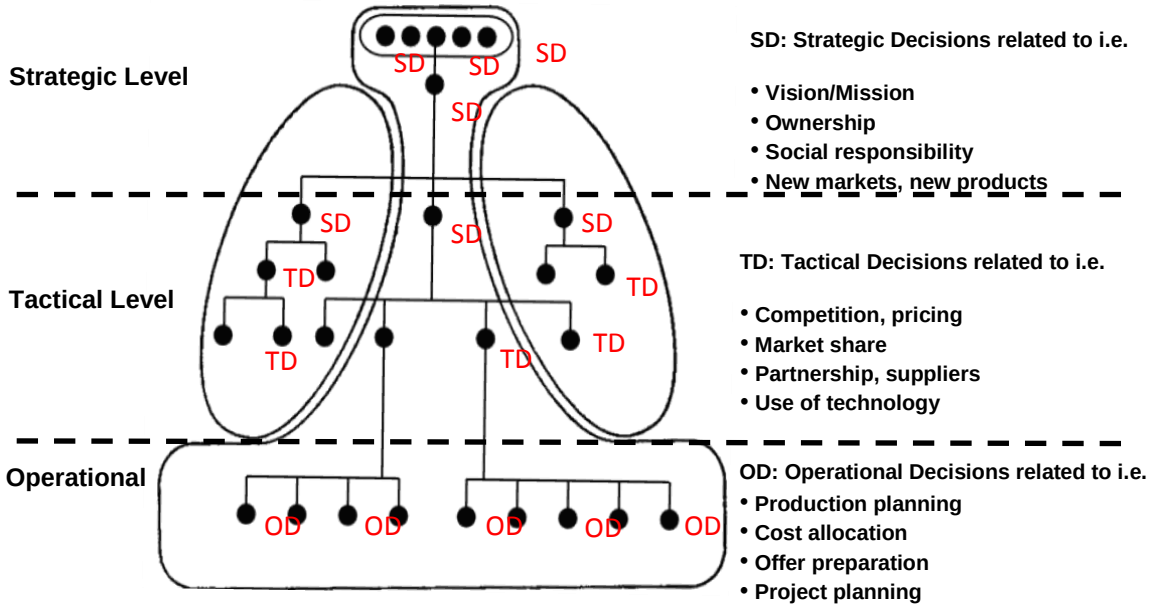

Figure 1. Matching organizational structure with decision types

Within the research in order to be able to identify the location of the employee on the organization structure it is necessary that the organization chart is analyzed. In addition, following demographic variables should be investigated and if necessary corrected in order to correctly identify the position level of the employee:

- Title
- Position level
- Details of reporting line
- Number of levels between CEO
- Position of manager
- Name of department

Other demographic variables like gender, age, and education level are also taken into consideration in order to be able to test the related hypotheses.

2.3.3. Identification of Decision Samples

The research realized within this study is mainly built on the idea that an employee's perception of how much he/she affects the making of a sample decision reflects his/her decision-making authority for such type of a decision. Therefore, it is important to find out decision examples from different class of decisions, which are strategical, tactical, and operational. Literature review and expert opinions are used to satisfy this requirement.

For each type of decisions six different questions were formulated to cover different business functions since employees replying to the survey are from different parts of the organizational structure, from different sectors, from different departments, and from different responsibility areas, etc. As an example, a question partially measuring the tactical level decision-making authority can be related to the sales function. An employee working in production department will reply to this instrument as "having no impact" while he/she has an important decision-making authority in tactical level decisions related to production.

The six questions developed for strategical level decisions and theoretical backgrounds for the selection of the sample are as follows:

1. Please select your level of impact on the definition of corporate vision – Vision statement describes what the organization would like to become and is an important element of strategy formulation (Wheelen, Hunger, 2006: 12-3).
2. Please select your level of impact on the setting of earning per share to be distributed at the end of the fiscal year – Since it affects the stock price, earning per share is an important parameter of the corporate financial strategy (Bierman, 1999: 92)
3. Please select your level of impact on the selection of corporate social responsibility projects to be realized - Corporate social responsibility is not about business ethics, but a business strategy meant to forestall popular power (Rowe, 2005; cited in McNulty, 2005).
4. Please select your level of impact on the setting of target market share in the product (or service) categories related to you – With its relation to competition and profitability, market share is seen as an important parameter in business strategy (Armstrong and Green, 2007).

5. Please select your level of impact on the identification of products/product groups which shall be newly introduced to the market – Developing new products for existing or new markets is an important part of marketing strategy (Wheelen, Hunger, 2006).
6. Please select your level of impact on the identification of sales channels through which the products will reach the customers – "A distribution strategy is among the most enduring decisions a business makes" (Thomas, 2008: 69).

The six questions developed for tactical level decisions and theoretical backgrounds for the selection of the sample are as follows:

1. Please select your level of impact on the changes in organizational structure – Within the strategic management model of Wheelen (Wheelen, Hunger, 2006) organizational structure is part of the internal environment and is related to how a firm implements its strategic means (MacGillivary et al., 2006).
2. Please select your level of impact on the definition of pricing policy in your business area – Pricing policy is the outcome of a largely internalized objective of a financial or other corporate nature (Atkin, 1998).
3. Please select your level of impact on the setting of annual investment budget – "It is often a challenge for C-level executives to make objective decisions about which areas of their IT budget to cut in times of economic slowdown or recession" (Rice, 2008: 2).
4. Please select your level of impact on the decision whether an offer will be submitted to the tender or not – Participation to a tender is related to market location tactic dealing with where a company implements a strategy (Wheelen, Hunger, 2006).
5. Please select your level of impact on the identification of preferred supplier list – Companies form long-term arrangements with key suppliers or distributors for mutual advantage (Andrews, 1995).
6. Please select your level of impact on the setting of annual sales/marketing or production cost budget – Budgets are detailed plans to implement a strategy (Wheelen, Hunger, 2006).

The six questions developed for operational level decisions are listed below. In line with the definition of Hitt and his associates (1999), all of the identified samples are related to the daily operations in different areas of the firm, therefore differing from strategic and tactical level decisions; a theoretical background explanation is not provided for each of them separately:

1. Please select your level of impact on the calculation of offer price in accordance to the existing pricing policy and market dynamics.
2. Please select your level of impact on the selection of investment projects which shall be realized within the existing investment budget.
3. Please select your level of impact on the calculation of offer or production costs.
4. Please select your level of impact on the distribution of previously defined sales budget across sales channels/customers.
5. Please select your level of impact on the selection of improvement projects which shall be implemented so that the pre-defined production cost budget is realized.
6. Please select your level of impact on the identification of project milestones of the projects related to i.e. order/investment/improvement/organizational etc.

2.3.4. Effect of Economic Crisis

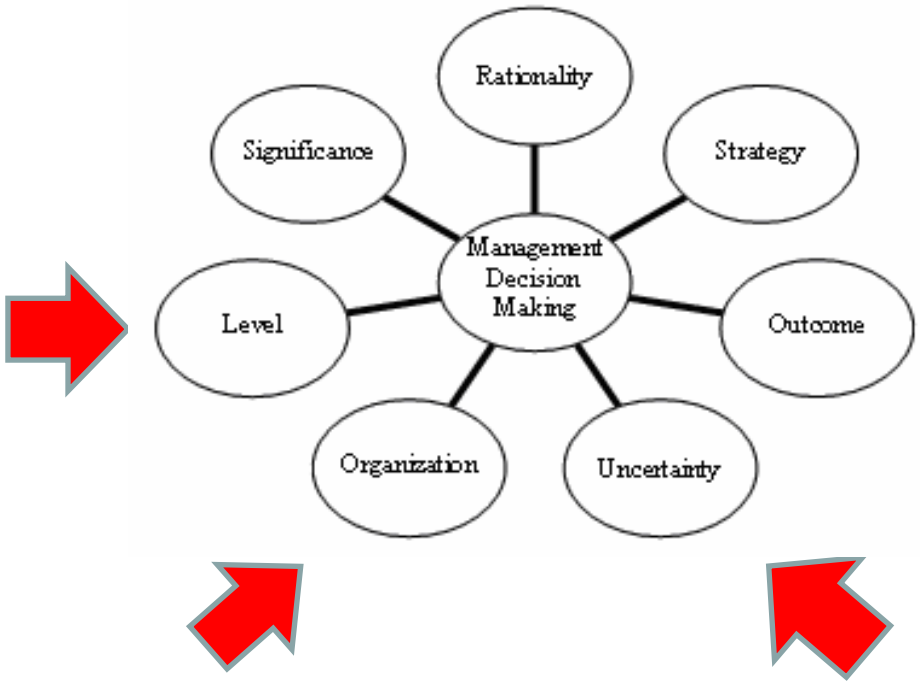

Figure 2. Dimensions of decision-making process included within the research (adopted from Avena 2005)

As seen in Figure 2, in addition to the organizational levels and organizational structure which are already discussed above, Avena (2005) also foresees uncertainty within the dimensions of managerial decision-making process. Being an external contextual factor, the effect of economic crisis examined within this research is related to this uncertainty dimension.

Similar to Avena (2005), Harrington and Ottenbacher (2009) foresee urgency, risk, dynamism and complexity within the dimensions of managerial decision-making tactics as can be seen in Figure 3. Being an external contextual factor, the effect of economic crisis is also related to these dimensions.

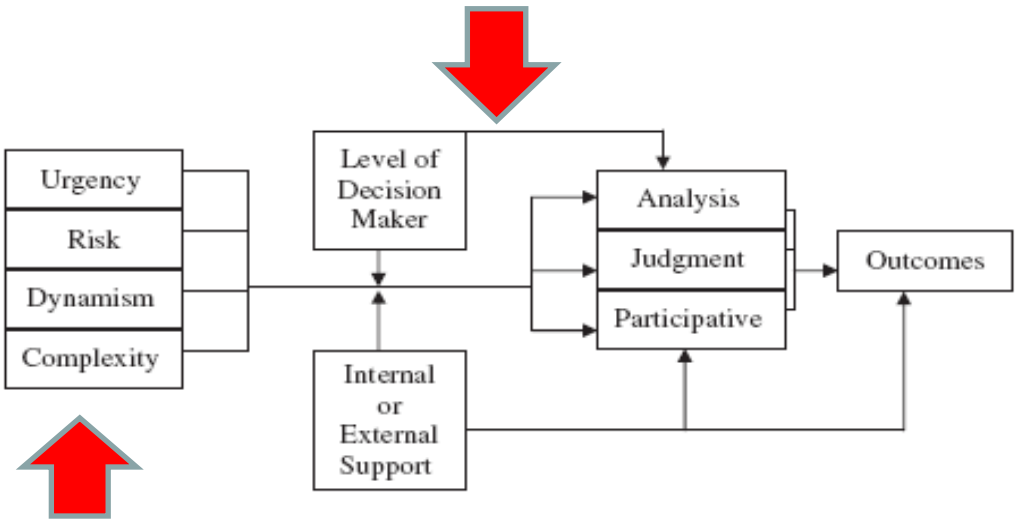

Figure 3. Dimensions of decision-making tactics included within the research (adopted from Harrington, Ottenbacher, 2009)

In this research, the effect of crisis on the distribution of decision-making authority is analyzed by checking the general expectation that during the times of crisis the distribution of decisions is shifted towards and is centralized in upper management levels, as sketched in Figure4.

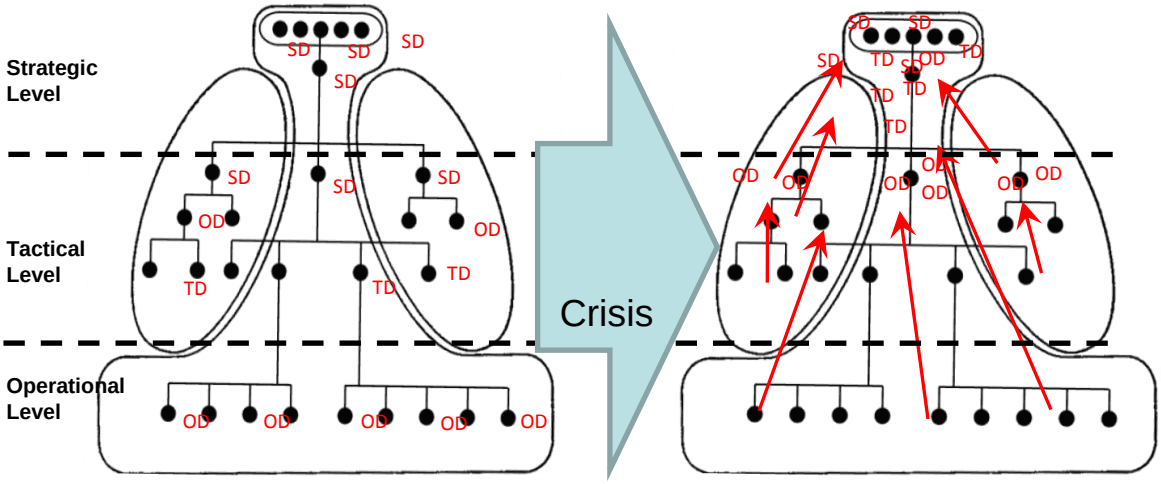

Figure 4. Effect of crisis on the distribution of decisions

2.4. Hypotheses

Based on the theoretical background explained in previous section following hypotheses are formulated:

H1. Distribution of decision-making authority in organizations is significantly affected during crises.

H1a. Crises cause an increase of the impact of top-level executives in strategic decisions.

H1b. Crises cause a decrease of the impact of middle level managers in tactical decisions.

H1c. Crises cause a decrease of the impact of lower level managers in operational decisions.

H1d. Crises cause an increase of the impact of male managers in organizational decisions.

H1e. Crises cause an increase of the impact of more educated managers in organizational decisions.

H1f. Crises cause an increase of the impact of managers with greater work experience in organizational decisions.

H2. During crises, decision-making authority tends to be shifted towards and centralized in the upper management levels.

H3. There is a negative relationship between the strength of crisis and decision-making authority.

H4. There is a negative relationship between the duration of crisis and decision-making authority.

While testing the hypotheses following operational definitions are taken into consideration:

Crisis:	Critical event or point of decision which, if not handled in an appropriate and timely manner (or if not handled at all), may turn into a disaster or catastrophe.
Crisis Strength:	The degree to which the resources of the corporation are affected by the crisis.
Economic Crisis:	Economic conditions as described by Onuk in Section **Hata! Başvuru kaynağı bulunamadı.** of his research (2009: 71).
Impact:	Ability to influence.
Decision-Making Authority:	Legitimate (formal) right to make decisions.
Work Experience:	Age.
Education:	Years of schooling.

2.5. METHODOLOGY

2.5.1. Data Collection Instruments

2.5.1.1. Questionnaire

To benefit from the advantages of information technology, the questionnaire is created and conducted using a web-based survey development tool provided by surveymonkey.com (www.surveymonkey.com) and realized on Internet. Web link of the survey is sent to the potential participants via e-mail. Data collection and primary analysis was realized on Internet. The application of the questionnaire took about two weeks. After the completion of data collection, collected data is primarily analyzed with the Surveymonkey survey tool and then is downloaded to an MS Excel file where further analysis is realized. Data in MS Excel file were reorganized so that it can be analyzed using SPSS software for statistical purposes.

Questionnaire is composed of four sections and 32 questions. The sections are marked as “1. Introduction”, “2. Questions”, “3. Demographics”, and “4. Closing”. Questionnaire in Turkish is provided in Appendix 1 of the research (Onuk, 2009).

The first section of the questionnaire included a welcome message explaining the subject of the survey, information on number of questions, duration, confidentiality, and a thank you message for participation.

The second section included 18 quantitative questions based on 7-interval Likert scale where each question should have been answered twice, once for normal economic conditions, second for economic crisis conditions as explained in the beginning of the section. Explanations of the intervals were also provided at the beginning of the section. Questions 1 to 6 were related to strategic level decisions. Questions 7 to 12 were related to tactical level decisions. Finally questions 13 to 18 were related to operational level decisions. This section also included 4 qualitative open-ended questions asking the personal opinions and feelings of the participants on how decision-making authority is affected from crisis.

Section 3 was about demographics and includes 10 questions related to demographic information. Finally, Section 4 included the closing message of the survey thanking the participants for their participation.

For the quantitative analysis an interval type Likert scale with 7 scale points is used to measure the authority level of an employee in taking a sample decision. The rating is based on the perception of the employee. If the employee rated his/her participation as ‘1’, this means ‘no impact’, while ‘7’

means 'definite impact' on the taking of the sample decision. For each decision type, the decision-making authority of an employee is calculated as the average of the sum of ratings of the six instruments used for that decision type. The calculation is done twice, first for the ratings of normal economic conditions, and second, for the ratings of economic crisis conditions. The calculated average values are interpreted as follows:

1 = No impact

2 = Slight impact

3 = Somewhat impact

4 = Moderate impact

5 = Strong impact

6 = Extreme impact

7 = Definite impact

A real case example is provided in Table 2. The results of the selected example in Table 2 can be interpreted as follows:

The respondent Nr. 5 thinks that he/she has an important impact on strategic level decision-making during normal economic conditions. He/she also thinks that his/her impact decreases to moderate level during crisis.

Table 2. Calculation of Decision-Making Authority

Respondent Nr.	**5**	
Type of Decision	**Strategic level**	
Question	**Selected Rating (1-7)**	
	Normal	**Crisis**
1. Please select your level of impact to the definition of corporate vision	6	5
2. Please select your level of impact to the setting of earning per share to be distributed at the end of the fiscal year.	5	4
3. Please select your level of impact to the selection of corporate social responsibility projects to be realized	5	4
4. Please select your level of impact to the setting of target market share in the product (or service) categories related to you	5	5
5. Please select your level of impact to the identification of products/product groups which shall be newly introduced to the market	5	5
6. Please select your level of impact to the identification of sales channels through which the products will reach the customers	3	2
Decision-making authority for Respondent Nr. 5 for strategic level decisions at normal economic conditions is calculated as:	**4.83**	
Decision-making authority for Respondent Nr. 5 for strategic level decisions at economic crisis conditions is calculated as:		**4.17**

For the qualitative analysis open-ended type instruments are used. This gave the participant freedom to express his/her feelings and opinions on the issue.

Demographic instruments included gender, age, education, title, position, number of people reporting, number of managed organizational levels, distance to CEO, title of the reporting line, and name of department.

2.5.1.2. Qualitative Approach

Quantitative approach is considered to be the best way because quantitative multivariate methods allow researchers to measure and control variables (Edwards, 1998). However, Kaplan and Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified. Using only quantitative approach faces a risk of failing to take account of the unique characteristics of individual cases (Edwards, 1998). Qualitative approach might be used not as a substitute but as a complementary for eliminating this risk.

The motivation for using qualitative approach comes from the fact that qualitative research methods are designed to help researchers understand people and the social and cultural contexts within which they live (Myers, 1997). Hammersley (1990) suggests that qualitative research is essential for the discovery of the social world. The researcher, guided by exploratory orientation, directly observes and participates in the natural setting (Bakir, 2001). Similarly, Blumer (1982) states that the best way to properly understand a phenomenon is to investigate it in the setting in which it occurs. This entails an in-depth examination of the practices, behaviors and beliefs of individuals or groups as they normally function in real life (Bakir, 2001). Gopinath and Hoffman (1995) stress the importance of incorporating practitioners' perspectives and input in implementing a field research. Briefly, theory building requires observation (Montgomery et al, 1989).

Taking these remarks into consideration, in addition to the semi-structured interviews, in-depth interviews, expert panels, and receipt of expert opinions, this study also included qualitative instruments within the survey.

2.5.2. Reliability and Validity of Data Collection Instruments

2.5.2.1. Reliability Analysis

To be able to assess the reliability and validity of the developed questionnaire, reliability and validity tests are performed and the results are provided in the following sections. Studies are mainly focused on quantitative techniques. However, qualitative reliability and validity analysis tools are also considered.

The questionnaire used in this study contains six quantitative components or questions divided in two groups. First group of components are related to strategic, tactical and operational level decisions during normal economic conditions. The second group of components is related to strategic, tactical and operational level decisions during economic crisis conditions. Each component measures the level of decision-making authority at certain organizational levels under different economic conditions. To prove the internal consistency and stability of the developed components certain reliability analysis are performed with software program called SPSS. Table 3 provides the summary of the reliability analysis results of six components.

Table 3. Summary of Reliability Analysis Results

Instrument	Nr. of Cases	Nr. of Items	SPSS Code	Cronbach's Alpha
Strategic (Normal)	85	6	STR1N to STR6N	0.8179
Strategic (Crisis)	85	6	STR1C to STR6C	0.8061
Tactical (Normal)	85	6	TAC1N to TAC6N	0.8550
Tactical (Crisis)	85	6	TAC1C to TAC6C	0.8655
Operational (Normal)	85	6	OPE1N to OPE6N	0.9142
Operational (Crisis)	85	6	OPE1C to OPE6C	0.9217

As illustrated above all of the Cronbach's Alpha values are higher than 0.7 which is accepted as the minimum threshold for the internal consistency and stability of a particular questionnaire instrument. These results were expected since the instruments were developed very carefully, they are based on comprehensive literature review and on valuable field experience of various business people. Establishing a bridge between theory and practice was one of the main intensions of this study and Cronbach's Alpha values or reliability of the instruments support this purpose.

2.5.2.2. Validity Analysis

For statistical validity analysis, the factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's test tools of SPPS software program are used. For factor analysis test, principal component analysis approach with Varimax rotation method is preferred. For an instrument to be valid following conditions should apply:

- Kaiser (1974) interprets KMO statistics as unacceptable if the measure is below 0.50, miserable in the 0.50s, mediocre in the 0.60s, middling in the 0.70s, meritorious in the 0.80s, and marvelous in 0.90s. Therefore, KMO measure which determines the homogeneity of the set of variables should be higher than 0.70,
- Significance of the correlation matrix measured by Bartlett's Test should be less than 0.05, to prove that the correlation matrix is not obtained by coincidence (Bartlett, 1937; Snedecor, Coehran, 1983),
- and, finally the total explanatory power of the factors, or component extracted should be higher than 50%.

All of the results as summarized in Table 4 satisfy the above requirements. Bartlett's Test of sphericity is 0.000 significant for all cases.

Table 4. Summary of Validity Analysis Results

Instrument	Nr. of Cases	Nr. of Items	SPSS Code	KMO Measure	Nr. of Component Extracted	Total Variance Explained
Strategic (Normal)	85	6	STR1N to STR6N	0.773	2	72.76%
Strategic (Crisis)	85	6	STR1C to STR6C	0.758	2	72.59%
Tactical (Normal)	85	6	TAC1N to TAC6N	0.805	1	59.05%
Tactical (Crisis)	85	6	TAC1C to TAC6C	0.829	1	60.45%
Operational (Normal)	85	6	OPE1N to OPE6N	0.857	1	70.33%
Operational (Crisis)	85	6	OPE1C to OPE6C	0.873	1	72.19%

Details of the analysis results for each instrument are provided below.

Strategic Level - Normal Economic Conditions

KMO and Bartlett's Test results for strategic level normal period instrument are provided below. As shown in Table 5, 0.773 KMO measure of sampling adequacy supports the validity of the instrument.

Table 5. Strategic Level – Normal Period KMO and Bartlett's Test Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.773
Bartlett's Test of Sphericity	Approx. Chi-Square	225.852
	df	15
	Sig.	.000

Similarly, as illustrated in Table 6 and Table 7, factor analysis also supports the validity of the instrument. According to the results two factors are composed after the assessment of collected data.

Table 6. Strategic Level – Normal Period Factor Analysis Component Matrix

Rotated Component Matrix[a]

	Component	
	1	2
STR1N	.399	.734
STR2N	.190	.661
STR3N	.022	.842
STR4N	.849	.259
STR5N	.883	.193
STR6N	.930	.125

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Rotated Component Matrix of the instruments addresses high correlation between the first three questions. Similarly, the correlation between the last three questions is also high. These results indicate that this instrument is composed of two factors and in terms of factor analysis this instrument may be accepted as valid.

The instrument is composed of six questions or components. The following table explains the total variance explained by each component. As shown in Table 7, only two components are enough to explain the % 72.763 of the construct measured.

Table 7. Strategic Level – Normal Period Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.199	53.316	53.316	3.199	53.316	53.316	2.561	42.686	42.686
2	1.167	19.447	72.763	1.167	19.447	72.763	1.805	30.077	72.763
3	.732	12.196	84.959						
4	.434	7.227	92.187						
5	.286	4.773	96.960						
6	.182	3.040	100.000						

Extraction Method: Principal Component Analysis.

Strategic Level – Economic Crisis Conditions

KMO and Bartlett's Test results for strategic level crisis period instrument are provided below. As shown in Table 8, 0.758 KMO measure of sampling adequacy supports the validity of the instrument.

Table 8. Strategic Level – Crisis Period KMO and Bartlett's Test Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.758
Bartlett's Test of Sphericity	Approx. Chi-Square	218.728
	df	15
	Sig.	.000

Similarly, as illustrated in Table 9 and Table 10, factor analysis also supports the validity of the instrument. According to the results, two factors are composed after the assessment of the collected data.

Table 9. Strategic Level – Crisis Period Factor Analysis Component Matrix

Rotated Component Matrix[a]

	Component	
	1	2
STR1C	.458	.679
STR2C	.098	.741
STR3C	.048	.804
STR4C	.875	.163
STR5C	.884	.165
STR6C	.928	.114

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Rotated Component Matrix of the instruments addresses high correlation between the first three questions. Similarly, the correlation between the last three questions is also high. These results indicate that this instrument is composed of two factors and in terms of factor analysis this instrument may be accepted as valid.

The instrument is composed of six questions or components. Table 10 shows the total variance explained by each component. As shown in the table, only two components are enough to explain the % 72.586 of the construct measured.

Table 10. Strategic Level – Crisis Period Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.112	51.870	51.870	3.112	51.870	51.870	2.631	43.858	43.858
2	1.243	20.716	72.586	1.243	20.716	72.586	1.724	28.729	72.586
3	.695	11.589	84.175						
4	.474	7.894	92.069						
5	.298	4.963	97.032						
6	.178	2.968	100.000						

Extraction Method: Principal Component Analysis.

Tactical Level - Normal Economic Conditions

KMO and Bartlett's Test results for tactical level normal period instrument are provided below. As shown in Table 11, 0.805 KMO measure of sampling adequacy supports the validity of the instrument.

Table 11. Tactical Level – Normal Period KMO and Bartlett's Test Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	232.059
	df	15
	Sig.	.000

Similarly, as illustrated in Table 12 and Table 13, factor analysis also supports the validity of the instrument. According to the results one factor is composed after the assessment of the collected data.

Table 12. Tactical Level – Normal Period Factor Analysis Component Matrix

Component Matrix[a]

	Component
	1
TAC1N	.722
TAC2N	.865
TAC3N	.875
TAC4N	.693
TAC5N	.614
TAC6N	.806

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix of the instruments addresses high correlation between all six questions. This indicates that this instrument is composed of one factor and in terms of factor analysis this instrument may be accepted as valid.

The instrument is composed of six questions or components. The following table explains the total variance explained by each component. As shown in Table 13, only one component is enough to explain the % 59.053 of the construct measured.

Table 13. Tactical Level – Normal Period Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.543	59.053	59.053	3.543	59.053	59.053
2	.754	12.568	71.622			
3	.689	11.486	83.107			
4	.427	7.120	90.227			
5	.408	6.793	97.020			
6	.179	2.980	100.000			

Extraction Method: Principal Component Analysis.

Tactical Level - Economic Crisis Conditions

KMO and Bartlett's Test results for tactical level crisis period instrument are provided below. As shown in Table 14, 0.829 KMO measure of sampling adequacy supports the validity of the instrument.

Table 14. Tactical Level – Crisis Period KMO and Bartlett's Test Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.829
Bartlett's Test of Sphericity	Approx. Chi-Square	240.507
	df	15
	Sig.	.000

Similarly, as illustrated in Table 15 and Table 16, factor analysis also supports the validity of the instrument. According to the results one factor is composed after the assessment of the collected data.

Table 15. Tactical Level – Crisis Period Factor Analysis Component Matrix

Component Matrix[a]

	Component
	1
TAC1C	.724
TAC2C	.864
TAC3C	.882
TAC4C	.712
TAC5C	.654
TAC6C	.803

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix of the instruments addresses high correlation between all six questions. This indicates that this instrument is composed of one factor and in terms of factor analysis this instrument may be accepted as valid.

The instrument is composed of six questions or components. The following table explains the total variance explained by each component. As shown in Table 25, only one component is enough to explain the % 60.452 of the construct measured.

Table 16. Tactical Level – Crisis Period Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.627	60.452	60.452	3.627	60.452	60.452
2	.725	12.084	72.537			
3	.673	11.215	83.752			
4	.416	6.927	90.679			
5	.369	6.147	96.827			
6	.190	3.173	100.000			

Extraction Method: Principal Component Analysis.

Operational Level - Normal Economic Conditions

KMO and Bartlett's Test results for operational level normal period instrument are provided below. As shown in Table 17, 0.857 KMO measure of sampling adequacy supports the validity of the instrument.

Table 17. Operational level – Normal Period KMO and Bartlett's Test Result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.857
Bartlett's Test of Sphericity	Approx. Chi-Square	348.383
	df	15
	Sig.	.000

Similarly, as illustrated in Table 18 and Table 19, factor analysis also supports the validity of the instrument. According to the results one factor is composed after the assessment of the collected data.

Table 18. Operational Level – Normal Period Factor Analysis Component Matrix

Component Matrix[a]

	Component
	1
OPE1N	.789
OPE2N	.884
OPE3N	.865
OPE4N	.837
OPE5N	.862
OPE6N	.792

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix of the instruments addresses high correlation between all six questions. This indicates that this instrument is composed of one factor and in terms of factor analysis this instrument may be accepted as valid.

The instrument is composed of six questions or components. Table 19 shows the total variance explained by each component. As shown in the table only one component is enough to explain the % 70.333 of the construct measured.

Table 19. Operational Level – Normal Period Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.220	70.333	70.333	4.220	70.333	70.333
2	.680	11.331	81.663			
3	.416	6.937	88.600			
4	.268	4.470	93.070			
5	.231	3.844	96.915			
6	.185	3.085	100.000			

Extraction Method: Principal Component Analysis.

Operational Level – Economic Crisis Conditions

KMO and Bartlett's Test results for operational level normal period instrument are provided below. As shown in Table 20, 0.873 KMO measure of sampling adequacy supports the validity of the instrument.

Table 20. Operational level – Crisis Period KMO and Bartlett's Test result

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.873
Bartlett's Test of Sphericity	Approx. Chi-Square	371.998
	df	15
	Sig.	.000

Similarly, as illustrated in Table 21 and Table 22, factor analysis also supports the validity of the instrument. According to the results one factor is composed after the assessment of the collected data.

Table 21. Operational Level – Crisis Period Factor Analysis Component Matrix

Component Matrix[a]

	Component
	1
OPE1C	.811
OPE2C	.905
OPE3C	.866
OPE4C	.814
OPE5C	.882
OPE6C	.815

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Rotated Component Matrix of the instruments addresses high correlation between all six questions. This indicates that this instrument is composed of one factor and in terms of factor analysis this instrument may be accepted as valid.

The instrument is composed of six questions or components. Table 22 shows the total variance explained by each component. As shown in the table only one component is enough to explain the % 72.193 of the construct measured.

Table 22. Operational Level – Crisis Period Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.332	72.193	72.193	4.332	72.193	72.193
2	.612	10.199	82.391			
3	.427	7.124	89.515			
4	.245	4.081	93.596			
5	.200	3.325	96.922			
6	.185	3.078	100.000			

Extraction Method: Principal Component Analysis.

2.5.3. Sampling

The study is applied in Siemens Sanayi ve Ticaret A.S., the general representative of Siemens AG in Turkey (www.siemens.com.tr). The time frame of the survey was July 2009. Total number of employees of Siemens Turkey during this time frame was 2306. Table 23 provides the details of employee profile of Siemens Turkey:

Table 1. Employee Profile of Siemens Turkey as of July 2009.

Total Number of Employees (July 2009)	**2306**
White-collar employees	1601
Blue-collar employees	705
Gender	
Women	556
Men	1750
Employee with access to a computer	**1650**
Education Level	
Primary School Graduate	48
Secondary School Graduate	58
High School Graduate	842
Vocational School Graduate	133
University Pre-Graduate	10

University Undergraduate	945
Master's Degree	258
PhD	12
Position Level	
Top Management, CEO and CFO	2
Upper-level Manager	25
Middle-level Manager	96
Manager	114
Employee	2069

92 participants responded to the survey. After careful evaluation 7 responses were eliminated because the related respondents didn't fill in the demographic questions necessary for the analysis. As a result, 85 responses were used for the analysis.

Size of the target population, which is the total number of employees of Siemens Turkey when the survey was applied, is 2306. As a result, the representation level of the sample is 3.69%.

The survey was designed in Internet and was not accessible by the employees who do not have access to a computer. Because of this limitation, the actual size of the target population could be maximum 1650, and the representation level of the sample increases up to %5.15.

3. CONCLUSION

The purpose of this study was to investigate decision-making process to understand how decision-making authority of different types of decisions are distributed throughout the organization levels.

The findings of this study may be summarized as follows:

First, macro decisions focusing on management activities at an organizational level can be divided into three major decision types or levels: strategic, tactical and operational.

Second, matching the decision types with the organizational structure and organizational chart, the distribution of decision-making authority throughout the organizational layers can be identified. The findings indicate that, as expected, decision-making authority is higher at higher managerial levels. This finding is in line with the definition of legitimate power (French, Raven, 1959).

Finally, the results of the statistical analysis proved that the survey tool developed for the empirical study is internally consistent and reliable as it satisfied the necessary quantitative and qualitative reliability and validity tests.

As a result, the research provided a new, valid and reliable tool to understand the dynamics of the organizational behavior during the decision-making process.

For future research, this new tool has to be applied in different organizations in different industries with higher levels of representation of samples.

REFERENCES

Alenljung, B. & Persson, A. (2008). Portraying the Practice of Decision-Making in Requirements Engineering: A Case Of Large Scale Bespoke Development. *Requirements Engineering*, 13, 257-79.

Andrews, K. Z. (1995). Manufacturer/Supplier Relationships: The Supplier Payoff. *Harvard Business Review* (September – October, 1995), 14-15.

Armstrong, J. S. & Green, K. C. (2007). Competitive-oriented Objectives: The Myth of Market Share. *International Journal of Business,* 12(1), 115-34.

Atkin, B. (1998). Pricing. *The Gower handbook of management*. Gower Eds., 4th ed., Gower Publishing, Hampshire, England, 492-520.

Aurum, A. & Wohlin, C. (2003). The Fundamental Nature of Requirements Engineering Activities as a Decision-Making Process. *Information Software Technology*, 45, 945-54.

Avena, E. (2005). The Experience of Responsibility-Based Management in Decision-Making: A Grounded Theory Study. PhD Dissertation. UMI Number: 3196634. University of Phoenix, Phoenix, Arizona.

Bakir, A. (2001). Understanding Organizational Strategy. Critical Management Studies Conference, UMIST, 11-13 July, 2001.

Bartlett, M. S. (1937). Properties of Sufficiency and Statistical Tests. *Proceedings of the Royal Statistical Society Series A*, 160, 268-82.

Bierman, H. Jr. (1999). *Corporate financial strategy and decision-making to increase shareholder value*. Frank J. Fabozzi Associates, New Hope, Pennslyvania.

Blumer, M. (1982). *Social research ethics*. Allen and Unwin, London.

Cyert, R. M., Simon, H. A. & Trow, D. B. (1956). Observation of a Business Decision. *The Journal of Business*, 29(4), 237-248.

Dicken, P. (1971). Some Aspects of the Decision-Making Behavior of Business Organizations. *Economic Geography*, 47(3), 426-37.

Dooley, K. J. (2004). Complexity Science Models of Organizational Change and Innovation. In Andrew H. Van De Ven and Marshall S. Poole (eds.) *Handbook of Organizational Change and Innovation*. Oxford University Press, New York, 354-73.

Dooley, K. J. & Van de Ven, A. H. (1999). Explaining Complex Organizational Dynamics. *Organization Science*, 10(3), 358-72.

Edwards, D. J. (1998). Types of Case Study Work: A Conceptual Framework for Case-Based Research. *Journal of Humanistic Psychology*, 38, 36-71.

Feichtinger, G. & Kopel, M. (1993). Chaos in Nonlinear Dynamical Systems Exemplified by an R&D Model. *European Journal of Operational Research*, 68, 145-59.

French, J. R. P. Jr. & Raven, B. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies in social power*, 150-67, University of Michigan Institute for Social Research, Ann Arbor.

Gable, G. (1994). Integrating Case Study and Survey Research Methods: An Example in Information Systems. *European Journal of Information Systems*, 3(2), 112-26.

Gopinath, C. & Hoffman, R.C. (1995). The Relevance of Strategy Research: Practitioner and Academic Viewpoints. *Journal of Management Studies*, 32(5), 575-94.

Hammersley, M. (1990). What's Wrong with Ethnography? The Myth of Theoretical Description. *Sociology*, 24. 597-615.

Harrington, R. J. & Ottenbacher, M. C. (2009). Decision-Making Tactics and Contextual Features: Strategic, Tactical and Operational Implications. *International Journal of Hospitality & Tourism Administration*, 10(1), 25-43.

Hitt, M. A., Ireland, R. D. & Hoskisson, R. E. (1999). *Strategic management*. 3rd ed., South-Western College Publishing, Cincinnati, OH.

Kaplan, B. & Duchon, D. (1988). Combining Qualitative and Quantitative Methods in Information Systems Research: A Case Study. *MIS Quarterly*, 12(4), 571-87.

Kaplan, B. & Maxwell, J. A. (1994). Qualitative Research Methods for Evaluating Computer Information Systems. In *Evaluating Health Care Information Systems: Methods and Applications*. J.G. Anderson, C. E. Aydin and S. J. Jay (eds.), Sage, Thousand Oaks, CA, 45-68.

Lee, A. S. (1991). Integrating Positivist and Interpretive Approaches to Organizational Research. *Organization Science*, 2, 342-65.

Levinthal, D. A. & Warglien, M. (1999). Landscape Design: Designing for Local Action in Complex Worlds. *Organization Science*, 10(3), 342-57.

Lindblom, C. E. (1959). The Science of "Muddling" Through. *Public Administration Review,* XIX, 79-88.

MacGillivray, B., H., Hamilton, P., D., Strutt, J., E. & Pollard, S. J. T. (2006). Risk Analysis Strategies in the Water Utility Sector: An Inventory of Applications for Better and More Credible Decision-Making. *Critical Reviews in Environmental Science and Technology*, (36), 85-139.

McNulty, J. (2005). Corporate Self-Regulation Falls Short. *UC Santa Cruz Currents*, 10(13).

Meredith, J. R., Raturi, J. R., Amoako-Gyampah, K. & Kaplan, B. (1989). Alternative Research Paradigms in Operations. *Journal of Operations Management*, 8(4), 297-326.

Mingers, J. (2001). Combining IS Research Methods: Towards a Pluralist Methodology. *Information Systems Research*, 12(3), 240-59.

Mintzberg, H. (1979). *The Structuring of organizations*, Prentice Hall, New Jersey.

Montgomery, G. A., Wernerfelt, B. & Balarkrishnan, S. (1989). Strategy Content and the Research Process: A Critique and Commentary. *Strategic Management Journal*, 10(2), 189-97.

Myers, M. D. (1997). Qualitative Research in Information Systems. *MIS Quarterly,* 21(2), 241-42.

Onuk, M. (2009). The Effects of Economic Crisis on the Distribution of Strategic Decision-Making Authority. (Unpublished doctoral dissertation). Yeditepe University, Institute of Social Sciences, Istanbul.

Ragin, C. C. (1987). *The Comparative method: Moving beyond qualitative and quantitative strategies*. University of California Press, Berkeley and London.

Rice, C. (2008). Tactics & Strategies for Reducing IT Budgets Ruling Economic Slowdowns. Glomark-Governan, available on website http://www.glomark-governan.com/images/Reducing_ IT_Budgets_in_Economic_Slowdowns.pdf.

Singleton, R. & Straits, B. C. (1999). *Approaches to social research*. Oxford University Press, New York.

Snedecor, G. W. & Coehran, W. G. (1989). *Statistical methods*. 8th ed., Iowa State University Press, Iowa.

Sterman, J. D. (2001). System Dynamics Modeling: Tools for Learning in a Complex World. *California Management Review*, 43(4), 8-25.

Thomas, W. M. (2008). *The sales manager's success manual*. AMACOM Books, New York.

Wheatley, M. J. (2001). The Real Work of Knowledge Management. *IHIRM Journal*, 5(2), 29-33.

Wheelen, T. L. & Hunger, J. D. (2006). *Strategic management and business policy, concepts and cases*. 10th ed., Pearson Prentice Hall, Upper Saddle River.