

THE POSITIVE AND NEGATIVE EFFECTS OF CRISIS ON ORGANIZATIONS: AN APPLICATION

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Abstract

The aim of this research is, to develop a scale that could evaluate the positive and negative effects of crisis on organizations, to determine the correlations between subscales of developed scale and determine the differences according to demographical qualifications. Research executed in the year 2010 in Malatya's Organized Industry Region (OIR) with the participation of 97 organizations. As a result of explanatory factor analysis we found that the scale that measured the positive effects of crisis consisted of three factors and ten items and the scale that measured negative effects of crisis consisted of two factors and nine items. We named the factors in positive effects of crisis as “*Organizational Change Effect*”, “*Potential Revealing Effect*”, “*Organizational Learning Effect*” and we named the factors of negative effects as, “*Effect of Reducing The Efficiency and Productivity*”, “*Effect of Causing Managerial Problems*”. Item-total correlations and differences between lower and upper 27% of groups were found high. Under these circumstances, results proved us that structure and reliability of scale were sufficient. Correlations between subscales were found sufficient.

Keywords: Crisis, positive effects of crisis, negative effects of crisis.

Özet

Araştırmanın amacı; krizin işletmeler üzerindeki olumlu ve olumsuz etkilerini değerlendirebilecek bir ölçek geliştirmek, geliştirilen ölçeğin alt ölçekleri arasındaki korelasyonları incelemek ve bunların demografik niteliklere göre farklılaşp farklılaşmadığını irdelemektir. Araştırma, 2010 yılında Malatya İl'i Organize Sanayi Bölgesi'nde üretim faaliyetinde bulunan 97 işletmenin katılımı ile gerçekleştirilmiştir. Açıklayıcı faktör analizi sonucunda; krizin olumlu etkilerini ölçen ölçeğin üç faktörden ve on maddeden, krizin olumsuz etkilerini ölçen ölçeğin ise iki faktörden ve dokuz maddeden oluşan bir yapıya sahip olduğu saptanmıştır. Krizin olumlu etkileriyle ilgili bu faktörlere; krizin “*Örgütsel Değişim Etkisi*”, “*Potansiyeli Açığa Çıkarabilme Etkisi*”, “*Örgütsel Öğrenme Etkisi*” isimleri; krizin olumsuz etkisiyle ilgili faktörlere ise krizin “*Yönelimsel Sorunlar Çıkarabilme Etkisi*” ve “*Etkinliği ve Verimliliği Düşürebilme Etkisi*” isimleri verilmiştir. Ölçeğin iç tutarlılık katsayıları, madde-toplam korelasyon değerleri ve alt-üst 27%'lik gruplar arasındaki farklar yüksek çıkmıştır. Elde edilen bu bulgular, geliştirilen ölçeğin geçerlik ve güvenilirliğinin yeterli düzeyde olduğunu göstermektedir. Alt ölçekler arasında anlamlı korelasyonlar bulunmuştur.

Anahtar kelimeler: Kriz, krizin olumlu etkileri, krizin olumsuz etkileri.

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1. Introduction

In the latter part of the twentieth century, organizational crisis has become almost routine. Indeed, crises are occurring on a scale not previously encountered, most of them human-caused, either through wrong decisions, technological complexities or both (Mishra, 1996: 3). The purpose of this paper is to develop a reliable scale to determine the positive and negative effects of crisis in organizations. In addition, we also developed this scale to determine the demographical differences that could effect the perception of positive and negative effects of crisis among the participants. After a wide literature search, a survey was constructed and executed in Malatya's OIR with 97 organizations. SPSS program was used for data evaluation.

When the literature was searched about crisis, most probably we could find the devastating effects at first glance. Besides those frightening effects, crisis brings also some opportunities to the organizations. During the past decades, many scholars have conducted conceptual and empirical studies on the topic of large-scale organizational crisis (Pearson and Mitroff, 1993; Perrow, 1984; Schwartz, 1987; Shrivastava, 1993; Weick, 1988). We focused especially on the positive and negative effects of crisis. For this purpose, we started with the definition of crisis and followed by the positive and negative effects of crisis.

2. The Definitions of Crisis

Financial crises, natural disasters, and health warnings dominate today's headlines and highlight the reality that crises are no longer limited by social or geographical boundaries. A situation that one region faces today will likely affect another community, country, or continent tomorrow. Nor is crisis limited to one sector of society, such as the business sector, but they overflow into others, like the public and nonprofit sectors (Gainey, 2009: 267). There are so many definitions about crisis. According to Dutton (1986: 502), crisis is frequently used interchangeably with the notion of threat or adversity. Crisis implies a perception that an individual or set of individuals faces a potentially negative outcome unless some type of corrective action is taken.

Pauchant and Mitroff (1992: 15), define a crisis as "*a disruption that physically affects a system as a whole and threatens its basic assumptions, its subjective sense of self, [and] its existential core*". Coombs and Holladay (1996) identify it as an event that threatens or challenges an organization's legitimacy or image. Corporate crises are disasters participated by people, organizational structures, economics, and/or technology that cause extensive damage to human life and natural and social environments (Mitroff, Shrivastava and

Udwadia, 1987: 287). Pearson and Clair (1998: 60) provided a good general definition: An organizational crisis is a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly.

3. The Positive and Negative Effects of Crisis

We focused not only negative effects but also positive effects of crisis.

3.1. The Positive Effects of Crisis

Although a crisis calls into question the survival of a system, it can lead to either positive or negative organizational outcomes (Mishra, 1996: 2). Some scholars have even argued that the trauma inherent in crisis is developmental for a system, by providing individuals within the system opportunities for learning and change (Pauchant and Mitroff, 1992: 99-100). According to Forgues and Roux-Dufort (1998: 71), in essence, crises were usually considered as negative events. In the event view of crisis management, crises are usually defined as damaging and harmful disruptions or perturbations that threaten the very survival of the organization. A crisis is, therefore, an unstable time or state of affairs in which a decisive change is impending either one with a distinct possibility of a highly undesirable outcome or one with a distinct possibility of a highly desirable and extremely positive outcome. Any executive who can predict and plan for a turning point in his or her organization stands a far better chance of capitalizing on that transformational opportunity than someone who allows the crisis to sneak up on him or her unprepared (Keeffe and Darling, 2008: 51). Contrary to popular belief, a crisis may not be necessarily negative or bad. It is merely characterized by a certain degree of risk and uncertainty (Fink, 1986). When badly managed, crisis can cause excessive centralized authority, fear and panic among staff, wrong decision making, loose of targets, increased trust loss between managers, staff and stakeholders (Kovoor-Misra, 2001: 81). Because of this, organizations should minimize the negative effects of crisis and make use of opportunities offered by crisis (Ataman, 2001: 238).

When managed in good manner, crisis help to reveal organizational problems, gain skills for change adaptation, developing new strategies and to gain competitive advantage and helps questioning usual management understanding (Tutar, 2001: 95).

(1) Crisis Offers Organizational Change Opportunities: Crisis offers change and reconstruction opportunities to organizations, besides threats (Tutar, 2001: 95). Nowadays most of the managers and scholars argue that, crisis can be regarded as: questioning the assumptions which cannot arguable other times, to get opportunity to

test targets, experiences, habits, choices, worries, to start strategical and technological changes, discovering new talents and building a team spirit in the organization (Ataman, 2001: 252-253; Tutar, 2001: 95). First condition for benefiting from crisis is to understand the fact that crisis also accommodates opportunities (Aydemir and Demirci, 2005: 68).

(2) *Crisis Offers Organizations Learning Opportunities*: Crisis creates a window of opportunity during which changes can occur. After this window closes, change is less likely. Thus, organizations responding to disasters learn in leaps –crisis by crisis– rather than smoothly over time (Carley and Harrald, 2008: 107). Crisis viewed as the result of a series of accidents and disruptions that are the necessary conditions for transformation. In such a context crises may be an interesting angle to study changes and organizational learning in the organization (Forgues and Roux-Duffort, 1998: 18). To prevent similar crisis, which can happen near future, organizations should learn the lessons from past crisis. By learning from experience, you can make sure the same mistakes are not made (Strategic Direction, 2007: 28). In theory, learning requires feedback. With feedback, organizations can learn to increase the accuracy of their response and improve their performance. In all learning theories, feedback that enables performance improvements is of a form that allows a determination of “*how close are we to the goal?*”. The more accurate feedback, the more rapid feedback, the better organizational performance (Carley and Harrald, 1997: 107). Crises, which are famous for being well handled, are typically very few –such as the Tylenol poisoning (1982) and Pepsi’s syringe-in-the-can (1993). By contrast, crises, which are famous for being badly handled, are legend and fill casebooks. While issues and crises well handled provide obvious instances of good practice, the examples above, and many other lesser-known cases of management failure, can nonetheless provide managers in other organizations with real opportunities for learning (Jaques, 2008: 193).

(3) *Crisis Offers Organizations Opportunities for Growth*: Crises are time for growth for organizations which can benefit from it. It should not be forgotten that, crisis offers great opportunities to organizations to strengthen trusts on costumers eyes and make the staff proud of their organization (Kadıbeşegil, 2002: 107-112). There are many good examples about in crisis organizations could catch great opportunities to renewal and development. For instance, after World War II, Japanese automotive

industry questioned status quo and searched for progress. In this process, they work with a total quality guru Edward Deming (Aydemir and Demirci, 2005: 68).

(4) *Crisis Offers Organizations Opportunities to Become International*: In 1994, Turkish economy was shocked by the biggest crisis in last 25 years. During that time, big industry organizations had seen that exporting was the only way of survival and they tripled their share in export total sale. In 1992, net sales of five biggest firms in Turkey, Arçelik, Tofaş, Oyak Renault, Profilo and Bekoteknik were 32 million TL and share in export were 3%. Two years later sale income of these firms reached to 73 million TL by 130% rise and share in export reached 9% (Aydemir and Demirci, 2005: 68).

3.2. The Negative Effects of Crisis

Crisis in organizations shows some differences on organizational structure and management depending upon internal and external factors. Organizational crisis affects on managerial and organizational structure and these effects are listed bellow (Özdevecioğlu, 2002: 99):

- (1) *Internal Communication Failure*: During crisis, internal communication process can be seized or loose its quality. The reason of this is insufficient information flow from outside of organization, which causes internal communication failure. In this situation, there can be problems between decision makers and personnel and data miners. To solve this problem centralized organization and centralized communication in organization (Özdevecioğlu, 2002: 99).
- (2) *Centralized Authority*: The increase in centralization is the best-documented effect of threat on organizational structure (Dutton, 1986: 508). The strong need for fast and accurate decision making during crisis embodies centralized authority in organizations (Dinçer, 1992: 284). Centralized decision-making can accelerate decision-making process but there can be delay if organization has outposts. The most important reason for centralized decision-making is corruption of normal decision-making process in organization. The increase in centralization is the best-documented effect of threat on organizational structure (Dutton, 1986: 508).
- (3) *Decreased Quality in Decision Process*: The reasons of bad quality of decisions are centralized and fast decisions. Before crisis, managers make decisions with their consultants from different departments in organization but during crisis managers consult only their boss or nearby managers. The main reason behind bad quality

decisions is misinformation or insufficient information flow (Özdevecioğlu, 2002: 99).

- (4) *Reduced Tendencies in Organizational Change:* During crisis, organizations can pass to standby position temporarily because of uncertainty. This tendency blocks the entrepreneurship of organizations. May be this situation is contemporary but harms the organization. The idea of change during crisis certainly causes problems in organizations (Özdevecioğlu, 2002: 99).
- (5) *Inadequate Coordination:* The need for coordination rises during crisis. However, due to lack of information, inadequate coordination between departments and personnel shows up. Centralized authority has a role in that. Inadequate coordination can be caused by broken communication between departments (Özdevecioğlu, 2002: 99).
- (6) *Confusion in Mission, Authority, and Responsibilities:* The most common organizational and managerial structure change occurs in personnel numbers during crisis. Main reason for decreased personnel number is low production because of decreased demand. Rise in input prices and low sale rates force the organization to make savings. According to managers, the most important resource for make saving is personnel. This saving causes a rise in additional missions for managers. This situation embodies additional jobs for managers and gives harms the psychological manner of personnel (Özdevecioğlu, 2002: 99).
- (7) *The Rise of Fear and Panic among The Personnel:* One of the unwanted consequences of crisis is job loss. This frequently applied method to put away crisis can cause negative effect on internal balances. The fear among personnel about job loss can lead people to panic and negativity (Özdevecioğlu, 2002: 99). In the days and weeks surrounding a crisis, traumatic stress reactions may produce symptoms of avoidance, concentration problems, depression, and feelings of vulnerability and sadness. Long term, they can cause substance abuse, mental and physical illness, and marital problems. If these effects on employees are not recognized, they can disrupt normal business functioning, as well as expose the company to direct costs from absences, health care expenses, workers compensation claims, and lawsuits (Braverman, 2003: 11).
- (8) *Corrupted Decision Process:* During crisis, mind process decreases both organizational and individual level, problem solving capacity decreases and decision

process breaks down (Dinçer, 1992: 284). Main reasons for this break down are uncertainty and centralized authority.

- (9) *Demoralized Staff*: Crisis periods can last long or short. Heavy conditions, time pressure and panic which appears during crisis effects morale of staff. Decreased level of morale will affect organizational climate. This situation can lead individual conflicts and decrease mutual trust among the staff (Özdevecioğlu, 2002: 99). The atmosphere of the organization changes dramatically. For example, the staff room, a usual barometer of morale, began to reflect dissatisfaction. Mistrust grew and developed, and the growing rumblings of discontent gave way to hushed silence when a worker performing administrative duties under the new director entered (Mandell and Zacker, 1977: 364).
- (10) *Physiological and Psychological Depression*: Psychological depression is one of the negativities of crisis process. Even the crisis over staff cannot get over the crisis (Özdevecioğlu, 2002: 99). The consequences of a crisis can be "victimization" of employees who are physically or psychologically harmed by an incident, the shattering of employees' basic assumptions about themselves or the organization, or the creation of a belief that one's personal system is threatened (Pearson and Claire, 1998: 63).
- (11) *Increased Self-Defense*: During crisis, staff focused all efforts and energies on crisis resolution, after the crisis future planning fears comes across. This fear initiates a common worry on staff and may affect the decision of staying in organization or not. In this way, organization can loose skilled personnel. A research made by Bennet and his colleagues showed that during crisis organizational devotion decreases (Bennetth, Martin, Bies and Brockner, 1995: 1030).
- (12) *Corrupted Relations between Departments in Organization*: Managerial and organizational problems, which appeared during crisis period, can affect departments like marketing production and public relations. Lack of coordination and information, corrupted decision process, and low quality decisions can effect decisions and activities of all departments (Özdevecioğlu, 2002: 99). Efforts to involve other departments or units in organizational change often are curtailed by job descriptions and turf battles. Those who practice office politics often thwart change by burying new proposals in committees. Those who support the change in theory avoid rocking the boat for fear of alienating other key players (Summers and Nowicki, 2002: 88).

4. Purpose of The Study

The study was made by researchers because of these:

- (1) To determine the way of effects of undesired internal or external crisis in which organizations may face,
- (2) To find out whether managerial perceptions on positive and negative effects of crisis changes according to: industry sector, ages of firm and size of firm or number of staff, or not,
- (3) To find out, whether managerial perceptions on positive and negative effects of crisis, changes with their demographical characteristics or not.

5. Hypotheses

Hypotheses of this study listed below:

- H1: Managers' perceptions of positive and negative effects of crisis doesn't change considerably according to their gender.
- H2: Managers' perceptions of positive and negative effects of crisis doesn't change considerably according to their education.
- H3: Managers' perceptions of positive and negative effects of crisis change considerably according to their ages.
- H4: Managers' perceptions of positive and negative effects of crisis change considerably according to their position in management.
- H5: Managers' perceptions of positive and negative effects of crisis change considerably according to staff number they have.
- H6: Managers' perceptions of positive and negative effects of crisis change considerably according to industrial sector they work.

6. Methods

Under this title; main group and sampling, data gathering devices and data analyses and research group are mentioned.

6.1. Main Group ve Sampling

This research was made in all organizations, which were operating in different production sectors, at the Malatya's first and second Organized Industry Region in 2010. The main group of the research is consisted of all the active organizations in Malatya's 1st and 2nd Organized Industry Region. According to the information taken from the Organized Industry Region

Administration; while 101 organizations were in active position in 1st Organized Industry Region, 75 organizations were in active position in 2nd Organized Industry Region. As a result, totally 176 organizations were in active position in the 1st and 2nd Organized Industry Region at the date of research made. Research sample were selected randomly in especially volunteers.

Research data were gathered by a survey. Researchers distributed the surveys personally in Organized Industry Region. Surveys were made mostly by face-to-face interviews and e-mails. Totally 200 survey distributed but 120 of them returned. 23 of participants were not evaluated due to absent items (when the absent items over 10% or irrelevant answers). Because of this reason, research sample consist of 97 participants.

6.2. Data Gathering and Analysis

Survey consists of 2 chapters and 62 items. In the first chapter there were seven items for participants and their organizations to gather general information about them. In the second chapter, there were 56 items about positive and negative effects of crisis in organizations.

Survey adopted from Haşit (2000), Özdevecioğlu (2002), Aydemir and Demirci (2005). Survey was a constructed scale. We follow a way when forming the scale: (1) At first, wide literature search was made about crisis (2) Similar scales were examined (3) Interviews were made with managers about positive and negative effects of crisis in OIR where the survey was made. After this three-phased work, we prepared an item pool to develop a scale. We prepared 100-item scale and sent it to professionals for evaluation in Inonu University. After the evaluation 62 item scale was developed. This scale was tested with a pilot study on 50 participants. After the pilot study, we corrected the misunderstood items. We asked to participants to evaluate themselves with a five Likert-type scale: “1= *Strongly Disagree*”, “2= *Disagree*”, “3= *Slightly Agree*”, “4= *Agree*”, “5= *Strongly Agree*”. There were 16 reverse coded items in the scale.

Explanatory factor analysis was made for structure validity of scale. Item analysis was made to check item-total scale correlation. In addition, independent sample t-tests were made to determine differences between 27% top and bottom of the groups according to distinguished validity. Cronbach alpha tests were made for reliability of scale.

We used frequency tables for evaluating participants' demographical data. Correlation tables were used for examining relations between developed scales and t-tests and One Way ANOVA tests were used to determine the differences between mentioned scales and participants' demographical data. SPSS program was used for data analysis.

6.3. Research Group

This research conducted in Malatya's OIR with 97 organizations, which were operating in production. 86 of participants were male (88.7%), 10 of the participants were female (10.3%). One of the participants did not answer the question. In age section, 17 of participants were in 20-30 age group (17.5%); 41 of them were in 31-40 age group (42.3%) and finally 26 of them were 41 + (26.8%). 13 of the participants did not answer the question (13.4%). In education section, 32 of the participants graduated from high school (33%), 52 of the participants graduated from university (53.6%), 4 of the participants has master or doctoral degree (4.1%) and 7 of the participants who answered "other" item (7.2%) were graduated from junior or middle school. 2 of the participants did not answer the question (2.1%). In managerial position section, 19 of the participants were working in lower management (19.6%), 36 of the participants were working in middle management (35.1%), 34 of the participants were working in top management (37.1%), 8 of the participants did not answer the question (8.2%). In organizational section, 25 of the organizations founded in 1975-1990 (25.8%), 47 of them in 1991-2005 (48.5%), 18 of them in 2006 or sooner (18.6%). 7 of the participants did not answer the question (7.1%). In staff number section, 51 organizations have between 1-50 persons (52.6%), 16 organizations have between 51-101 persons (16.5%), 22 organizations have over 151 persons (22.7%). Eight of them did not mention staff number (8.2%). This scale adopted from KOSGEB. In sector section, 17 of organizations operate in food sector (17.5%), 42 of them in textile sector (43.3%) and 38 of them in other sectors (39.2%). About sector section there were ten options to identify the sector where the organization operates. These were mining, food and tobacco, paper and packing industry, chemistry, petroleum products, rubber and plastic industry, rock and soil dependent industry, machinery production and metal products, automotive industry, electronic devices, Forest products and furniture industry. Moreover, according to frequency table results most of the organizations gathered in textile and food. Because of that reason, other low frequency organizations gathered in one group.

7. Results and Discussion

In this part, we examined the validity and reliability of the scales in details, which were developed for crisis, and results of analysis.

7.1. Evaluation Scale of Positive Effects of Crisis

Item analyses and descriptive validity studies were made in the scope of structure validity studies to develop evaluation scale for positive effects of crisis. In the scope of structure

validity, explanatory factor analysis was made. Explanatory factor analysis was made by the data, which was gathered from 97 organizations in Malatya's OIR. Before the factor analysis, distribution of data were analyzed and all deformity and sharpness values found lower than 1.00. At first, data were tested with Kaiser-Meyer-Olkin (KMO) and Bartlett Sphericity test for validity to factor analysis (Kaiser Meyer Olkin=.76, Bartlett's Test of Sphericity=1034.464, df=253, p=.000), all data were found sufficient to make factor analyses. During factor analysis criteria below mentioned criteria are chosen (Çeçen, 2006: 105):

- Each factor should have an eigenvalue 1 or closer,
- The items that loaded on their corresponding factors at levels of 0.5 or greater,
- Indicating a clear association between the variable and the factor,
- Should not have cross loadings in two factors or differentiate at least .10.

Totally 23 items were defined for developing Evaluation Scale of Positive Effects of Crisis: (ESPEC). Principal component analysis was made for defining dimensions of scale and Varimax rotation technique was used for minimizing loads of each factor and Kaiser criteria (Lester ve Bishop, 2000). Items were not retained because of the reasons listed above (37, 38, 31, 44, 41, 42, 30, 29, 33, 28, 34, 40, and 39) and as a result of second analysis we had three dimensional and ten item scale. Results of analyses: factor loadings, eigenvalues, total explained variance, and item-total correlations are shown in Table 1.

Table 1: Evaluation Scale of Positive Effects of Crisis

Factors	Items	Alpha	Factor I	Factor II	Factor III	Item-Total Correlation
Organizational Change Effect	(25) Crisis created change opportunities for us.	.79	.829			.670
	(26) Crisis created reconstruction opportunities for the organization.		.764			.621
	(27) Crisis created new job opportunities for the organization.		.730			.492
	(24) We learned a lot from crisis.		.718			.573
Potential Revealing Effect	(46) We become well prepared for future crisis.	.75		.840		.524
	(45) We developed fast decision-making process during crisis.			.824		.489
	(43) Crisis let us determine the weak sides of our organization.			.701		.625
Organizational Learning Effect	(35) Crisis let us understand the importance of information and learning for competitiveness.	.74			.919	.600
	(36) Crisis let us understand the importance of skilled workforce.				.874	.655
	(32) Crisis let us learn how to reduce costs in organization.				.511	.645
Explained Total variance: 66.55 Factor 1 variance: 24.64 Factor 2 variance: 21.10 Factor 3 variance: 20.80 Factor 1 eigenvalues: 3.73 Factor 2 eigenvalues: 1.61 Factor 3 eigenvalues: 1.32						

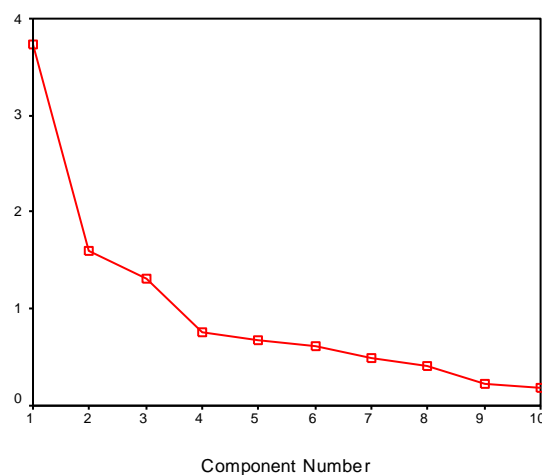
**p=.001

As shown in Table 1, we found three factors whose eigenvalue greater than 1 as a result of analysis. Explained total variance of these three factors were 66.55%. Kline (1994) argued that, the level of explained total variance value was important indicator for structure validity and should be above 40%. This variance consisted by three factors, first factor has 26.64% share, second factor 21.10% and the last factor 20.80%. Load values of first factor changes between .83 and .72, second factors' .84 and .70 and the third factors' .92 and .51. When item-total correlation examined, it was seen that correlations changed between .49 and .67. according to Alpar (2001), if the item-total correlation is low, it can be considered that this item had low value for the scale. It was expected that item-total correlation should be positive and over .20 (Tavşancıl, 2006). The items that were not retaining these conditions should be eliminated. It was found that, as a result of this analysis, correlation coefficients were not negative and greater than .20. In this condition, each of variables has good contribution to scale. Moreover, to decide the existence of items in scale, we examined in alpha coefficient and mean differences when the item deleted. Alpha coefficients were not changed when each of the items deleted and it was decided that scale was sufficient. As a result of Varimax

rotation technique, it was understood that first factor consisted of four items (25, 26, 27, 24), second factor three items (46, 45, 43) and the third factor three items (35, 36, 32). After all, we examined content of items and named the factors as first factor “*organizational change effect*”, second factor “*potential revealing effect*” and the third factor “*organizational learning effect*”. Cronbach alpha coefficients were calculated, for the reliability study of crisis positive effects evaluation scale. Alpha coefficient for “*organizational change effect*” was .79, “*potential revealing effect*” was .75, “*organizational learning effect*” was .74 and for whole scale .81.

Graphic which explained the factors is shown below. This graphic showed that, according to fast drop after first and second factors, there was a strong probability for three dimensional scale.

Graphic 1: Eigenvalues of The Factor Loadings of the Scale of Evaluation of The Positive Effects of The Crisis



As shown in Graphic 1, after the first factor there was a sharp fall. There was also smooth fall after second and third factors. At the next factor, line went steady and no significant fall observed. In other words, fourth factor and followers’ contribution to variance were similar. In the scope of distinguished validity, total points that were taken from answers of participants were put in decending order. After the ordering, we selected 52 participants from top and bottom 27% of main sample. We made t-test to determine if the items distinguished the top and bottom group from each other significantly. The result was shown in Table 2.

Table 2: Significance of Items Point Means Between Top-Bottom 27% Groups' for Evaluation Scale of Positive Effects of Crisis

Maddeler	Gruplar	\bar{X}	S	t	P
1. (25) ** Crisis created chance opportunities for us.	Lower 27%	2.3077	1.2890	-8.346	.00*
	Upper 27%	4.6154	.5711		
2. (26) Crisis created reconstruction opportunities for the organization.	Lower 27%	2.5000	1.2728	-6.751	.00*
	Upper 27%	4.3846	.6373		
3. (27) Crisis created new job opportunities for the organization.	Lower 27%	2.3077	1.1923	-5.757	.00*
	Upper 27%	4.0769	1.0168		
4. (24) We learned a lot from crisis.	Lower 27%	2.5000	1.3638	-5.959	.00*
	Upper 27%	4.3462	.7971		
5. (46) We become well prepared for future crisis.	Lower 27%	2.9231	1.3834	-4.694	.00*
	Upper 27%	4.3462	.6895		
6. (45) We developed fast decision-making process during crisis.	Lower 27%	3.0769	1.2625	-4.026	.00*
	Upper 27%	4.1923	.6337		
7. (43) Crisis let us determine the weak sides of our organization.	Lower 27%	2.9615	1.3995	-5.680	.00*
	Upper 27%	4.6154	.4961		
8. (35) Crisis let us understand the importance of information and learning for competitiveness.	Lower 27%	2.6923	1.3790	-6.405	.00*
	Upper 27%	4.5385	.5084		
9. (36) Crisis let us understand the importance of skilled workforce.	Lower 27%	2.6923	1.3496	-5.680	.00*
	Upper 27%	4.3846	.6972		
10. (32) Crisis let us learn how to reduce costs in organization.	Lower 27%	2.3846	1.2985	-7.865	.00*
	Upper 27%	4.5769	.5778		

* $p < .001$. $N_{Alt\ 27\%} = 26$. $N_{Üst\ 27\%} = 26$

** Numbers between paranthesis were the numbers of survey questions.

As shown in Table 2, all items in the scale could distinguish the top and bottom groups significantly. All these results explained us that scale could measure coherently by itself without mixing structures each other and had proper structure validity.

7.2. Evaluation Scale of Negative Effects of Crisis

Item analyses and descriptive validity studies were made in the scope of structure validity studies to develop evaluation scale for negative effects of crisis. In the scope of structure validity, explanatory factor analysis was made. As it was made in the evaluation of positive effects of crisis here also explanatory factor analysis was made in the scope of structure validity to develop evaluation scale for negative effects of crisis. All data were found sufficient to make factor analyses.

Before the factor analysis, distribution of data were analyzed and all deformity and sharpness values found lower than 1.00. At first, data were tested with Kaiser-Meyer-Olkin (KMO) and Barlett Sphericity test for validity to factor analysis (Kaiser Meyer Olkin= .82, Bartlett's Test of Sphericity=777,997, $df=120$, $p=.000$) and all data were found sufficient to make factor analyses

Totally 16 items were defined for developing Evaluation Scale Negative Effects of Crisis (ESNEC). Principal component analysis was made for defining dimensions of scale and Varimax rotation technique was used for minimizing loads of each factor and Kaiser criteria. Items were not retained because of the reasons mentioned before (56, 58, 53, 62, 49, 47, and 59) and as a result of second analysis we had two dimensional and nine item scale. Results of analyses: factor loadings, eigenvalues, total explained variance, and item-total correlations are shown in Table 3.

Table 3: Evaluation Scale of Negative Effects of Crisis

Factors	Items	Alpha		
		I. Faktör	II. Faktör	Item Totla Correlations
Effect of Causing Managerial Problems	(51) Our decision process has been broken down by the crisis.	.896		.754
	(50) Level of the relations between departments has fallen during the crisis.	.854		.593
	(52) During the crisis, coordination has become insufficient.	.816		.693
	(55) During the crisis, organizational communication have been lowered.	.718		.782
	(57) Chaos of the authorizations and responsibilities occurred during the crisis.	.686		.706
Effects of Reduction of Effectiveness and Productivity	(60) It has become harder for the company to reach its goals during the crisis.		.841	.626
	(61) During the crisis, company has produced under its potential.		.784	.444
	(54) There have been fear and panic under the circumstances of the crisis.		.655	.655
	(48) Crisis has demoralized the personnel.		.627	.597
Explained Tatol Variance: 64.25 Factor 1 variance : 37.47 Factor 2 variance : 26.83 Factor 1 eigenvalue: 3.95 Factor 2 eigenvalue : 1.83				

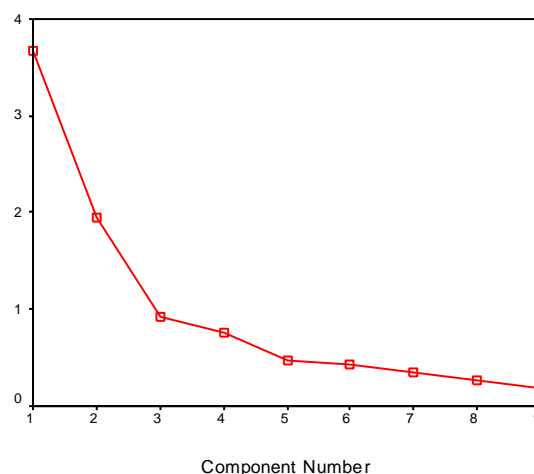
**p=.001

As it can be seen from the Table 3, as a result of this analysis, two factors has been determined with eigen values greater than 1. Total variance explained by these two factors was 64.25%. 37.47% of the variance is explained by the first factor, and 26.83% explained by the second one. It can be seen that for the first factor, factor loadings vary between .90 and .69, and for the second factor they vary between .84 and .63. When the item-total correlations are examined, it is seen that correlations vary between .44 and .78. In such a case, we can say that the contribution of each variable to the scale is high. Besides, in order to decide if each item could be removed from the scale or not, the cases where the items are removed were examined in terms of the alpha coefficients. It was seen that, in neither case, the alpha

coefficient rose. As a result of Varimax method of orthogonal rotation, it is specified that the first factor consisted of five items (51, 50, 52, 55, 57), and the second factor consisted of four items (60, 61, 54, 48). Afterwards, researchers examining the contents of the items, named the first one as “*effect of causing managerial problems (ECMP)*” of the crisis and “*effect of reducing the efficiency and productivity (EREP)*” of the crisis. For the reliability analysis of the scale of evaluation of the negative effects of the crisis, Cronbach Alphas were calculated. Cronbach alpha of the scale of effect of causing managerial problems of the crisis, which is consisted of 5 items, was shown to be .87, and Cronbach alpha of the scale of decreases on the efficiency and productivity effect of the crisis was shown to be .73. Moreover, Cronbach alpha of the total scale, consisted of 9 items was found to be .83 (Özdemir, 2009).

The line graphic of the factors explaining the negative effects of the crisis is shown in the Graphic 2. It can be seen from the line graphic, the steep fall after the first factor has shown that the scale could be two-dimensional.

Graphic 1: Eigenvalues of The Factor Loadings of The Scale of Evaluation of The Negative Effects of The Crisis



As shown in Graphic 2, there is a steep fall after the first factor. Besides, there is a less accelerated fall after the second factor. At the third and the following factors, line becomes horizontal and there is no significant tendency to fall. In other words, contributions of the third and the following factors to the variance are closer to each other.

In the context of distinctive validity, first of all, the scores of the participants from the questions on the negative effects of the crisis were sorted from the lowest to the highest. Afterwards, 26 people from each 27% upper and lower groups were determined, a total of 52 people were chosen. Then, it is examined by t-test for each item if it differentiates between the upper and lower groups significantly. Results of the t-test have shown in Table 4.

Table 4: Significance of The Differences of Item Average Scores of Upper and Lower 27% Groups for The Scale of Evaluation of The Negative Effects of The Crisis

Items	Groups	\bar{X}	S	t	P
1. *(51) Our decision process has been broken down by the crisis.	Lower 27%	2.0800	.6403	-13.885	.00*
	Upper 27%	4.4615	.5818		
2. (50) Level of the relations between departments has fallen during the crisis.	Lower 27%	2.6400	.9950	-5.877	.00*
	Upper 27%	4.1538	.8339		
3. (52) During the crisis, coordination has become insufficient.	Lower 27%	2.2400	1.0909	-8.880	.00*
	Upper 27%	4.4231	.5778		
4. (55) During the crisis, organizational communication have been lowered.	Lower 27%	2.2400	1.0520	-9.661	.00*
	Upper 27%	4.4615	.5084		
5. (57) Chaos of the authorizations and responsibilities occurred during the crisis.	Lower 27%	2.2800	.9798	-8.332	.00*
	Upper 27%	4.3077	.7359		
6. (60) It has become harder for the company to reach its goals during the crisis.	Lower 27%	1.9200	.9967	-5.922	.00*
	Upper 27%	3.6538	1.0933		
7. (61) During the crisis, company has produced under its potential.	Lower 27%	1.9200	.9967	-4.592	.00*
	Upper 27%	3.3077	1.1582		
8. (54) There have been fear and panic under the circumstances of the crisis.	Lower 27%	1.8000	.8165	-7.837	.00*
	Upper 27%	3.8846	1.0706		
9. (48) Crisis has demoralized the personnel	Lower 27%	1.5200	.5859	-7.122	.00*
	Upper 27%	3.4231	1.2058		

*p<.001. N_{Alt 27%} = 26. N_{Üst 27%} = 26

**The numbers in paranthesis are the item numbers at the survey.

As can be seen from the Table 4, items taking place at the scale could distinguish the upper and lower groups at the significant level. All these results have shown that the scale could measure a certain structure without messing with other structures in a consistent manner so has structural validity.

7.3. Correlations Between Sub-Scales for The Scales of Evaluation of Positive and Negative Effects of The Crisis

Correlations between the sub-scales for the scales of evaluation of positive and negative effects of the crisis; “*organizational change effect (OCE)*”, “*potential revealing effect (PRE)*”, “*organizational learning effect (OLE)*”, “*effect of causing managerial problems (ECMP)*”, “*effect of reducing the efficiency and productivity (EREP)*” are shown in Table 5.

Table 5: Correlations Between The Positive and Negative Effects of The Crisis

Sub-Scales		OCE	PRE	OLE	ECMP	EREP
OCE	Pearson Correlation	1.000	.287**	.394**	.023	.027
	Sig. (2-tailed)	.	.004	.000	.827	.796
	N	97	97	97	96	96
PRE	Pearson Correlation	.287**	1.000	.375**	-.081	-.393**
	Sig. (2-tailed)	.004	.	.000	.434	.000
	N	97	97	97	96	96
OLE	Pearson Correlation	.394**	.375**	1.000	-.019	-.209**
	Sig. (2-tailed)	.000	.000	.	.853	.041
	N	97	97	97	96	96
ECMP	Pearson Correlation	.023	-.081	-.019	1.000	.360**
	Sig. (2-tailed)	.827	.434	.853	.	.000
	N	96	96	96	96	96
EREP	Pearson Correlation	.027	-.393**	-.209*	.360**	1.000
	Sig. (2-tailed)	.796	.000	.041	.000	.
	N	96	96	96	96	96

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

As shown in Table 5, when the correlation coefficients between the scores derived from the scales of evaluation of positive and negative effects of the crisis, significant and positive correlations have been found between “*organizational change effect*” and “*potential Revealing Effect*” ($r=.29$) and also between “*organizational change effect*” and “*organizational learning effect*” ($r=.39$).

In addition, while there is a positive and significant correlation between “*potential revealing effect*” and “*organizational learning effect*” of the crisis ($r=.37$), there is a significant negative relationship between “*potential revealing effect*” and “*effect of reducing the efficiency and productivity*” of the crisis ($r=-.39$). Also, a significant positive correlation can be seen between “*effect of causing managerial problems*” and “*effect of reducing the efficiency and productivity*” of the crisis ($r=.36$). Finally, there can be seen a significant negative relationship between “*organizational learning effect*” and “*effect of reducing the efficiency and productivity*” ($r=-.21$).

At this point, it can be observed that some of the correlations are low. However, as a result of the process of testing if the correlation coefficient between two variables is significantly different than zero, a low correlation coefficient may appear to be significant, or a high correlation coefficient may appear to be insignificant. This situation is mainly based on the

sample size where the scores are derived. The derived results are in line with the expectations of the researchers.

7.4. Comparison of Participants' Perceptions of The Positive and The Negative Effects of The Crisis in Terms of Some Variables

It is proposed that the perceptions of the participants of the effects of the crisis can vary with various variables. In order to test the hypotheses, perceptions of the participants of the positive and the negative effects of the crisis have been evaluated with the related statistical methods. Results of the t-test on the perceptions of male and female are shown in the Table 6.

Table 6: Results of The T-Test on The Perceptions of Male And Female of Positive and Negative Effects of The Crisis

Sub-Scales	Sex	n	\bar{X}	Ss	t	P
Organizational Change Effect	Male	86	3.4564	.9935	.629	$p > .05$ <i>insignificant</i>
	Female	10	3.2500	.8660		
Potential Revealing Effect	Male	86	3.7093	.9101	-2.274	$p < .05$ <i>significant</i>
	Female	10	4.1000	.4458		
Organizational Learning Effect	Male	86	3.5465	1.0577	-1.337	$p < .05$ <i>significant</i>
	Female	10	4.0000	.4444		
Effect of Causing Managerial Problems	Male	86	3.3419	.9764	-1.228	$p > .05$ <i>insignificant</i>
	Female	10	3.6400	.6915		
Effects of Reduction of Effectiveness and Productivity	Male	86	2.6512	.9419	-.664	$p > .05$ <i>insignificant</i>
	Female	10	2.8500	.8913		

As shown in Table 6, for male and female, there is significant difference between the perceptions of “*potential revealing effect*” of the crisis and “*organizational learning effect*” of the crisis. Because, for “*potential revealing effect*” $p=.034$, and for “*organizational learning effect*” $p=.020$ dir. Female’s level of perception of the existence of both “*organizational learning effect*” and “*potential revealing effect*” of the crisis is higher compared to the perception of male.

One-Way ANOVA tests were conducted in order to compare the participants’ perceptions of the positive and negative effects of the crisis in terms of other variables. Test results can be seen at the attachment. In this context, the results below can be observed if the hypotheses are evaluated:

H1: Managers’ perceptions of positive and negative effects of the crisis do not differ in terms of their genders: For some sub-scales it is “*accepted*” and for others “*rejected*”. There are significant differences on the level of perceptions of males and females on “*potential revealing effect*” and “*organizational learning effect*” of the crisis. However, there are no significant differences at other sub-scales.

- H2: Managers' perceptions of positive and negative effects of the crisis do not differ in terms of their levels of education: This hypothesis was totally accepted (can be seen from the table attached).
- H3: Managers' perceptions of positive and negative effects of the crisis differ significantly in terms of their ages: This hypothesis was totally rejected (can be seen from the table attached).
- H4: Managers' perceptions of positive and negative effects of the crisis differ significantly in terms of their levels of management: This hypothesis was totally rejected (can be seen from the table attached).
- H5: Managers' perceptions of positive and negative effects of the crisis differ significantly in terms of the numbers of their employees: This hypothesis was totally rejected (can be seen from the table attached).
- H6: Managers' perceptions of positive and negative effects of the crisis differ significantly in terms of their sectors: This hypothesis was totally rejected (can be seen from the table attached).

8. Conclusion

World has been experiencing great changes and developments in the fields of transportation, communication and technology. Globalization, which has affected all countries, can be accepted as a consequence of these changes. It is important to note that, globalization and advance in technologies made enterprises dependent on each as well as countries. As a result of this today's strong dependence, not only favorable developments that take place in one country directly affects other countries, but also negative events spillover to much more wider locations.

In this respect, global crisis is one of those negative events, which has been influencing many other societies in the world. Global crisis has its devastating effects mostly on the enterprises dealing with production. The effect of global crisis might be much more powerful than the internal crisis. The reason behind this idea is the danger of outside factors which lead to crisis rather than more soluble problems coming from inside. However, what ever the type of crisis is, it may put an end to the operation of enterprises by the great risks they deal with. Do crisis always have negative effects on enterprises? May crisis provide any advantages to enterprises? Researchers started their study by asking these questions. Although, existing literature has been focused mainly on the negative aspects of crisis; this study tries to fill this gap by studying on the positive effects of crisis on enterprises in addition to its negative

effects. With this purpose, two scales had been developed in order to analyze positive and negative effects of crisis. Scale for the evaluation of the constructive side of crisis is determined by three factors, which are “*organizational change effect*”, “*potential revealing effect*”, “*organizational learning effect*”. Per contra, scale for the evaluation of the negative consequences of the crisis was analyzed by two factors, which are “*effect of causing managerial problems*” and “*effect of reducing the efficiency and productivity*”. When the correlation between these factors are analyzed, it is founded that when “*organizational change effect*” is experienced, the effect of, “*potential revealing effect*”, and “*organizational learning effect*” are both increased. Moreover, when “*potential revealing effect*” increases, it is also seen that “*organizational learning effect*” also rises. Because there was a positive correlation between these sub-scales. However, whilst the effect of “*potential revealing effect*” increases, it was found that the “*effect of reducing the efficiency and productivity*” falls due to the negative correlation between the two sub-scales. In the same way, if the “*organizational learning effect*” rises, the “*effect of reducing the efficiency and productivity*” were decreased depending on the negative correlation. Finally, as the “*effect of causing managerial problems*” increases, it was seen that the “*effect of reducing the efficiency and productivity*” also increases because of the negative correlation between these two unfavorable scales.

When the managers perception of negative and positive effects of crisis is analyzed on the basis of demographic differences; it is found that man and woman differs only in their perception of “*organizational learning effect*” and “*potential revealing effect*”. As it was seen, women have a better perception of “*organizational learning effect*” and “*potential revealing effect*” of crisis.

Eventually, it may be inevitable for enterprises to escape from the effects of crisis whether they want or not. This study has showed that crisis has positive effects as well as negative ones.

Especially, crisis that is resulted from outside factors that cannot be controlled involves high risks. Enterprises may reduce these risks and negative consequences of crisis by taking precautions and preparing themselves for all contingencies. Even, they may find ways to gain advantage by asking the question of “*How to turn crisis in to opportunity?*”. In this context, searching the answer of this question is suggested for the researchers who want to study on the effects of crisis.

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Attachment: Participants' Perceptions of Positive Negative Effects of Crisis in The Scope of Various Variables

Educational State:						
Sub Scales	Soucee of Variance	Sum of Squares	df	Mean Square	F	Sig
Organizational Change Effect	Between Groups	5.825	4	1.456	1.569	.189
	Within Groups	85.393	92	.928		
	Total	91.218	96			
Potential Revealing Effect	Between Groups	.470	4	.118	.148	.964
	Within Groups	73.147	92	.795		
	Total	73.617	96			
Organizational Learning Effect	Between Groups	10.323	4	2.581	2.676	.067
	Within Groups	88.737	92	.965		
	Total	99.061	96			
Effect of Causing Managerial Problems	Between Groups	2.772	4	.693	.765	.551
	Within Groups	83.358	92	.906		
	Total	86.130	96			
Effects of Reduction of Effectiveness and Productivity	Between Groups	3.372	4	.843	.954	.437
	Within Groups	81.288	92	.884		
	Total	84.660	96			
Age State:						
Organizational Change Effect	Between Groups	3.735	3	1.245	1.324	.271
	Within Groups	87.483	93	.941		
	Total	91.218	96			
Potential Revealing Effect	Between Groups	2.763	3	.921	1.209	.311
	Within Groups	70.854	93	.762		
	Total	73.617	96			
Organizational Learning Effect	Between Groups	4.721	3	1.574	1.551	.207
	Within Groups	94.340	93	1.014		
	Total	99.061	96			
Effect of Causing Managerial Problems	Between Groups	4.991	3	1.664	1.907	.134
	Within Groups	81.139	93	.872		
	Total	86.130	96			
Effects of Reduction of Effectiveness and Productivity	Between Groups	.629	3	.210	.232	.874
	Within Groups	84.031	93	.904		
	Total	84.660	96			
Hierarchical position state:						
Organizational Change Effect	Between Groups	7.252	3	2.417	2.677	.052
	Within Groups	83.966	93	.903		
	Total	91.218	96			
Potential Revealing Effect	Between Groups	1.319	3	.440	.566	.639
	Within Groups	72.298	93	.777		
	Total	73.617	96			
Organizational Learning Effect	Between Groups	3.085	3	1.028	.996	.398
	Within Groups	95.976	93	1.032		

	Total	99.061	96			
Effect of Causing Managerial Problems	Between Groups	.293	3	9.783E-02	.106	.956
	Within Groups	85.837	93	.923		
	Total	86.130	96			
Effects of Reduction of Effectiveness and Productivity	Between Groups	1.778	3	.593	.665	.576
	Within Groups	82.882	93	.891		
	Total	84.660	96			
Organizational Age state:						
Organizational Change Effect	Between Groups	1,643	3	.548	.569	.637
	Within Groups	89,575	93	.963		
	Total	91,218	96			
Potential Revealing Effect	Between Groups	1,651	3	.550	.711	.548
	Within Groups	71,966	93	.774		
	Total	73,617	96			
Organizational Learning Effect	Between Groups	1,653	3	.551	.526	.666
	Within Groups	97,408	93	1,047		
	Total	99,061	96			
Effect of Causing Managerial Problems	Between Groups	.463	3	.154	.168	.918
	Within Groups	85,667	93	.921		
	Total	86,130	96			
Effects of Reduction of Effectiveness and Productivity	Between Groups	4,688	3	1,563	1,817	.149
	Within Groups	79,972	93	.860		
	Total	84,660	96			
Staff number state:						
Organizational Change Effect	Between Groups	1.383	3	.461	.477	.699
	Within Groups	89.835	93	.966		
	Total	91.218	96			
Potential Revealing Effect	Between Groups	1.545	3	.515	.665	.576
	Within Groups	72.072	93	.775		
	Total	73.617	96			
Organizational Learning Effect	Between Groups	6.183	3	2.061	2.064	.110
	Within Groups	92.877	93	.999		
	Total	99.061	96			
Effect of Causing Managerial Problems	Between Groups	2.819	3	.940	1.049	.375
	Within Groups	83.311	93	.896		
	Total	86.130	96			
Effects of Reduction of Effectiveness and Productivity	Between Groups	1.533	3	.511	.572	.635
	Within Groups	83.127	93	.894		
	Total	84.660	96			
Sector state :						
Organizational Change Effect	Between Groups	4.104	2	2.052	2.214	.115
	Within Groups	87.114	94	.927		
	Total	91.218	96			
Potential Revealing Effect	Between Groups	4.078	2	2.039	2.756	.069

	Within Groups	69.539	94	.740		
	Total	73.617	96			
Organizational Learning Effect	Between Groups	.570	2	.285	.272	.762
	Within Groups	98.491	94	1.048		
	Total	99.061	96			
Effect of Causing Managerial Problems	Between Groups	.173	2	8.652E-02	.095	.910
	Within Groups	85.957	94	.914		
	Total	86.130	96			
Effects of Reduction of Effectiveness and Productivity	Between Groups	.756	2	.378	.424	.656
	Within Groups	83.903	94	.893		
	Total	84.660	96			