

Analysis of the Relationship Between Stress and Organizational Commitment in Employees: A Meta-Analysis Study

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Abstract

This research aims to investigate the relationship of stress and organizational commitment in employees with meta-analysis method. In the literature review, 22 studies and 42 comparisons were found which meet the determined criteria. “Fisher z” value was used to calculate impact size values and impact direction and overall impact of the research were analysed with random impact model. As a result of the analysis; it was determined that stress have a weak positive relationship impact on organizational commitment. In addition, it was also determined that there is a negative and weak relationship impact between stress and affective commitment; positive and weak relationship impact between stress and normative commitment and positive and small relationship impact between stress and continuance commitment in employees. In the research, it was seen that the impact of stress on organizational commitment vary according to the sector that employees work in. in the analyses, it was determined that there is a positive impact in health and tourism and a negative impact in education and the impact size is weak in health and small in tourism and education. Based on the research results, it can be said that new researches are required about how and why the relationships between stress and organizational commitment in employees vary.

Keywords: stress, stress in employees, organizational stress, job stress, organizational commitment, meta-analysis

1. Introduction

Individual's being or not being effective and efficient in daily life and business life is closely related to many individual and environmental factors. While positive factors increase effectiveness and efficiency of individuals by revealing positive experiences in individuals, negative factors cause that individuals' quality of life decreases and therefore their effectiveness and efficiency decrease. One of these factors which affect individuals' quality of life, stress negatively affects individuals physically, behaviourally and psychologically as a part of daily life and this may be reflected on state of mind and even health of the individuals. For that reason, it is important to raise awareness of individuals about factors such as stress which affect their psychology and physiology.

As there are many variables which affect and are affected by stress, it is not possible to explain stress with a single definition. Selye (1980: 6) used stress as a concept for the first time and described it as the specific reactions of the organism to stimulants which cause change. In addition, stress may be defined as individual's wellbeing is in danger as a result of pushing and crossing the individual limits with the impact of environmental factors (Z. Baltaş & A. Baltaş, 2006; Folkman, Lazarus, Gruen & DeLongis, 1986); individual's making effort beyond his physical and psychological limits because of conditions which are not compatible with his nature (Cüceloğlu, 1998); the reaction which occurs when the individual's real world and expectations do not match (Magnuson, 1990) and a state of tension which bothers the individual both psychologically and physiologically (Ünsal, 2012). Besides, stress may also be discussed with its stimulant and reaction aspects and described as the change in the organism caused by the harmful impacts of individual and environmental factors as a factor or reaction which harms the organism as a stimulant (Lazarus & Folkman, 1984). Based on the definitions on stress, it can be said that stress starts when the dangers caused by individual's interaction with his environment are perceived by the organism, this danger which affects the entire organism activates the individual more excessively than his motivated state and these actions cannot be controlled normally (Tutar, 2000).

All of the individuals who come across stress develop the same reactions to stress. These common reactions to stress are called “General Adaptation Syndrome” (Selye, 1975: 14). General Adaptation Syndrome is realized in three stages. The

first stage is the alarm phase. In this first phase, the individual notices the source of the stress and displays first reactions against this source and individual's behavioural reactions are accompanied by physiological changes and individual's blood pressure and glucose level increase and his heart rate increases. If the individual's exposure to stimulant causing stress is extended, the second phase which is resistance starts. In this phase, the resistance of the body against the cause of stress increases and the individual makes an effort to get rid of the imbalance caused by the stress and go back to balance. If the individual could not go back to balance as a result of his efforts, the third phase, exhaustion starts. In this phase, the individual's energy for going back to balance runs out and the individual loses his resistance to the source of stress (Ross & Altmaier, 1994).

Stress factors which causes the individual to come to the third phase, which is exhaustion, may be sourced from the individual's work life as well as his daily or private life. For that reason, the possibility that employees encounter stress factors caused by work life is quite high. This high possibility caused that various researches are carried out on the stress that employees experience. In researches on working individuals, stress is generally discussed within the context of organizational stress or work stress.

1.1. Organizational Stress

Organizational stress is a broad concept which includes organizational features that cause stress in employees and employee behaviours (Stinchcomb, 2004) and although it varies from employee to employee, it may be defined as the situation caused by the relationships among individual, organization and other employees and which cause that the individual goes out of normal functions (Arikanlı & Ulubaş, 2004). As employees' going out of normal functions would affect the efficiency and productivity of the employees negatively, it may play a role which may prevent achieving organizational objectives. For that reason, it is considered important that awareness level regarding organizational stress sources is high in terms of maintaining wellbeing of both employees and organizations.

Organizational stress may be caused by the structure of task, structure of authority, structure of production, structure of clustering, structure of role or cultural structure. Sub-dimensions of these sources can be listed as:

- Structure of task: Excessive work load, monotonous or boring work, inadequate salary, lack of promotion opportunities, long working hours and unsuitable working conditions
- Structure of authority: Lack of decision making ability, subordinates' inability to participate in decision making process, lack of authority, anxiety caused by responsibility, inadequate assessment processes
- Structure of productivity: Time pressure, lack of tools-instruments, individuals' abilities not compatible with the requirements of the work
- Structure of cluster: Unrest in working environment, conflicts with superiors-subordinates and colleagues, low social support and gossip at the workplace
- Structure of role: Incompatibility between the requirements of the work and employees' personality and uncertainty of roles
- Cultural structure: Different views in the working environments, lack of common values and norms, low status, morale and job satisfaction (Bertan, 2012).

The source of factors causing stress in the organization may be the lack of communication among employees, leaders' undemocratic behaviours or employees' not feeling safe in the organization (Palmer, Cary & Kate, 2003). In addition, 24/7 working time in organizations, pressure towards quickly adapting to structural changes and expectations regarding high quality standards may also support formation of organization stress in employees (Manning & Preston, 2003). The reason why there are so many factors affecting organizational stress is that each work has its own nature or each individual has a different process of giving meaning to the external world. For example; while long working hours is not a source of stress for teachers, it may be for doctors or while not being able to participate in decision making is a cause of stress for an employee, another employee may experience organizational stress based on low salary.

It can be said that job stress may be caused by factors related to the nature of the job and it can be explained by sub-dimensions such as specific tasks that constitute the job, the complexity of the job and job's including responsibilities on various dimensions (Cartwright & Cooper, 1998). However, when the literature on job stress is reviewed, it is seen that organization stress dimensions are used to explain job stress and job stress (Ahmed & Ramazan, 2013; Ergün & Çelik, 2015; Gharib, Jamil, Ahmed & Ghouse, 2016; Gül, Oktay & Gökçe, 2008; Khatibi, Asadi & Hamidi, 2009; Tekingündüz & Kurtuldu, 2015) are organizational stress (Akhtar, 2011; Bhagat et al., 2010; Düzgün, 2014; Sullivan & Bhagat, 1992; Şahin, 2014; Yiğit, 2009) are used in the same meaning and as interchangeably. For that reason, organizational stress and job stress are investigated with the theme of stress in employees in this research.

Although overall impact of stress is directed to the individual, organizational stress affects both the individual and many

variables about the organization negatively. Especially the relationship between stress and organizational commitment in employees has been the subject of various researches (Akımlı, 2003; Akpulat, Polat Üzümcü & Karacan, 2016; Aydoğan, 2008; Düzgün, 2014; Efeoğlu & Özgen, 2007; Erdilek Karabay, 2014; Ergün & Çelik, 2013; Gül et al., 2008; Güngör Seyhan, 2015; İnan Yousuf, 2015; İncesu, 2011; Kılıç, Efeoğlu, Mimaroglu & Özgen, 2008; Köseoğlu Şalk, 2016; Pekerşen, 2015; Üzüm, 2010; Sökmen & Şimşek, 2016; Şahin, 2014; Tekingündüz & Kurtuldu, 2015; Turunç & Erkuş, 2010; Yıldız, 2013; Yiğit, 2009). When the studies on stress and organizational commitment in employees are reviewed, it is seen that these researches are carried out in various fields such as education (Aydoğan, 2008; Güngör Seyhan, 2015; Yıldız, 2013) health (Efeoğlu & Özgen, 2007; Ergün & Çelik, 2013; Gül et al., 2008; İncesu, 2011; Kılıç et al., 2008; Köseoğlu Şalk, 2016; Tekingündüz & Kurtuldu, 2015), tourism (Akpulat et al., 2016; Düzgün, 2014; Pekerşen, 2015; Şahin, 2014; Yiğit, 2009), banking (Erdilek Karabay, 2014; Turunç & Erkuş, 2010), sports (Kaplan, 2017; Üzüm, 2010) and media (İnan Yousuf, 2015) and different researchers in the same field (Aydoğan, 2008; Güngör Seyhan, 2015; Yıldız, 2013) investigated this relationship with different sample groups as in education. All these studies can be considered as an indicator of the importance given to the stress and organizational commitment relationship in employees in every field.

1.2. Organizational Commitment

Organizational commitment is one of the most important variables that allows an organization to continue its existence. Organizational commitment can be defined as employees' determination level to achieve organizational targets (Caught & Shadur, 2000); protecting the values of the organization and adopting its objectives (Meyer & Allen, 1997); internalizing the values of the organization and the desire to remain in the organization to achieve its objectives (De Cotiis & Summers, 1987); the process of employees' defining themselves with the organization and becoming a part of the organization (Balci, 2003) and employees' efforts towards organizational objectives and values beyond the organization's expectations (Celep, 2000).

As organizational commitment is a variable which includes various commitment dimensions, it is classified in various forms by researchers. Etzioni (1961) classified organizational commitment as moral commitment, utilitarian commitment and alienating commitment; O'Reilly and Chatman (1986) classified it as adaptation commitment, identification commitment and internalization commitment; Wiener (1982) classified it as instrumental commitment and normative-moral commitment; Buchanan (1974) classified it as identification, hugging and loyalty commitment. In addition, the classification by Allen and Meyer (1990) as affective commitment, normative commitment and *continuance* commitment is one of the most used classifications in the organizational commitment literature.

While organizational commitment classification by Meyer and Allen (1984) was discussed in two dimensions as affective commitment and *continuance* commitment at first, normative commitment was added to the model later as the third dimension (Allen & Meyer, 1990). Affective commitment means the emotional bond and high-level identification between employees and organization. Beyond all conditions, employees with high affective commitment continue to work in the organization only because they want to. *Continuance* commitment is related to the employee's awareness about the cost which will occur when the employee leaves the organization. The thought that the status and income obtained with the time, effort and energy that the employee has spent will be lost when he leaves the organization is the foundation of *continuance* commitment. The employee stays in the organization because he cannot risk the cost that leaving would cause. In normative commitment, the responsibility that the employee has towards the organization is dominant rather than personal interests. It is the type of commitment which occurs when the employees are loyal to the organization and continue to work in the organization due to the organization's investments and the opportunities it provides (Allen & Meyer, 1990).

1.3 Organizational Stress and Organizational Commitment

Researches carried out indicate that there are positive relationships between organizational commitment and variables such as employee performances (Saridede & Doyuran, 2004), internal motivation (Kara, 2015); job satisfaction (Demirtaş, 2010) and corporate responsibility perception (Serinikli, 2018). Positive relationship of organizational commitment with many variables which are vital for organizations supports acceleration of studies which affect organizational commitment negatively. As stress is a factor which affects individuals and organizations negatively, many researches were made on the relationship between organizational stress or work stress and organizational commitment.

The relationship between organizational commitment and stress can be explained with the approach developed by Salancik (1977). In his approach which defines organizational commitment in accordance with the behaviours of the organization member, Salancik (1977) stated that the harmony between the organization member's attitude and behaviours constitutes commitment and lack of harmony causes anxiety and stress in the member of the organization. Based on this approach, it can be said that there is a relationship between the individual's commitment to the organization and his stress level.

Researches in which the relationship between employees' stress levels and organizational commitment is exhibited are carried out in different disciplines. In the researches in the field of health, Efeoğlu and Özgen (2007) exhibited that there is a weak positive relationship between job stress and organizational commitment; Ergün and Çelik (2015), Tekinüz and Kurtuldu (2015) exhibited that there is a very weak negative relationship; Kılıç et al. (2008) exhibited that there is a weak negative relationship; Köseoğlu Şalk (2016) exhibited that there is a very weak positive relationship between organizational stress and the affective and normative commitment sub-dimensions of organizational commitment and there is a very weak negative relationship between continuance commitment; İncesu (2011) exhibited that there is a weak positive relationship between organizational stress and organizational commitment and Gül et al. (2008) exhibited that there is a very weak negative relationship between stress and organizational commitment. In studies carried out in the field of education, it was determined that there is a very weak negative relationship between job stress and organizational commitment (Güngör Seyhan, 2015; Yıldız, 2013) and also there is a very weak negative relationship between organizational stress and affective and normative commitment and a very weak positive relationship with continuance commitment (Aydoğan, 2008). In studies carried out in the field of tourism, Akpulat et al. (2016) determined that there is a very weak negative relationship and Pekerşen (2015) and Yiğit (2009) determined that there is a very weak positive relationship between job stress and organizational commitment and Düzgün (2014) determined that there is moderately positive relationship between organizational stress and organizational commitment. In studies carried out in the field of sports, Kaplan (2017) determined that there is a high positive relationship and Üzüm (2010) determined that there is a very weak negative relationship between organizational commitment and organizational commitment; in studies carried out in the field of banking, Turunç and Erkuş (2010) reported that there is a very weak negative relationship and Erdilek Karabay (2014) reported that there is a weak negative relationship between job stress and organizational commitment. In addition, it was exhibited that there is very weak negative relationship between organizational stress and organizational commitment in a study carried out in the field of media (İnan Yousuf, 2015); there is a weak positive relationship between job stress and job commitment in a study carried out in the field of maritime (Özdemir, 2017); there is a very weak negative relationship between job stress and organizational commitment in a study carried out in a private organization (Zincirkıran, Çelik, Ceylan & Emhan, 2015) and there is a weak negative relationship between stress and organizational commitment in a study carried out in a public institution (Sökmen & Şimşek, 2016).

When the studies conducted are reviewed, it is seen that some of the study results are positive and some of them are negative and even these conflicting results are in the same study field; while some of the results are very weak or weak, some of them are high in the study field; and some study results are similar. Therefore, this research is considered important as it serves as a guide for organizations and employees for comparing study results in the literature, obtaining a comprehensive result on the relationship between stress and organizational commitment levels of employees and increasing organizational commitment. In addition, since no other research investigating the relationship between these two variables with meta-analysis method could be found in the literature, the contribution it will provide to the literature is another aspect which makes this research important. For those reasons, this research aims to investigate the relationship between stress and organizational commitment levels of employees with meta-analysis method. Within the framework of this objective, answers are sought for the following questions:

- 1) What is the average impact size of the relationship between stress and organizational commitment in employees?
- 2) What is the average impact size of the relationship between stress and affective commitment, continuance commitment and normative organizational commitment in employees?
- 3) Does the relationship between stress and organizational commitment in employees vary according to the sector they work in?

2. Method

2.1 Sample

In the research, total number of sample of 13 studies on job stress and organizational commitment is 3.167, total number of sample of 8 studies on organization stress and organizational commitment is 1.434 and total number of samples of 1 study on stress and organizational commitment is 44. Total number of sample of these 22 studies collected under the title of stress in employees is 4.645.

2.2 Data Collection Tools

Within the scope of the research, studies which investigate the relationships between stress and organizational commitment variables in employees were used. During the process of determining these studies, databases such as YÖK (Council of Higher Education) thesis database, Google academics, Ulakbim (Turkish National Academic Network and

Information Centre) and EBSCO host were used. These databases were reviewed two times on 02 July 2018 and 30 July 2018 and necessary examinations were made. Reviews were made in Turkish and English using keywords “stress”, “organizational stress”, “job stress” and “organizational commitment”.

The criteria determined to include studies within the scope of the research: The research (a) is conducted on employees in Turkey, (b) includes correlation coefficient between organization stress, job stress and stress and organizational commitment variables in employees and sample size values, (c) is an article, master’s or PhD thesis published between 2007 and 2018.

2.3 Procedure

The research is designed using meta-analysis method. Meta-analysis is a statistical method used for combining results in independent studies (Crombie & Davies, 2009). In this method, data included in different studies is converted into a common measurement unit to be combined. This measurement unit is also called as impact size (Borenstein, Hedges, Higgins & Rothstein, 2009). In the research, first correlation values were converted to Fisher z and analyses were made with converted values. While evaluating the analysis results, these values were interpreted by being converted to correlation coefficient. Cohen, Manion and Morrison (2007) classified correlation coefficient impact sizes as weak between ± 00 and ± 10 ; \pm small between .10 and .30; \pm moderate between .30 and .50; strong between $\pm .50$ and .80 and very strong over $\pm .80$. The data obtained in the research was analysed using CMA statistic software.

Meta-analysis works are realized in six steps (Durlak, 1998). These steps are (i) identifying research questions, (ii) literature review, (iii) encoding works, (iv) impact size index, (v) statistical analysis of impact size distribution and (vi) deduction and conclusion.

By implementing the steps of meta-analysis studies, the researches on work stress, organizational stress and the relationship between stress and organizational commitment in employees in Turkey were encoded with the encoding form created and then related researches were combined with meta-analysis method. Correlations obtained from the studies were discussed in seven different meta-analyses as stress – organizational commitment in employees, stress – affective commitment in employees, stress – *continuance* commitment in employees, stress – normative commitment in employees, stress–organizational commitment in healthcare employees, stress – organizational commitment in tourism employees and stress – organizational commitment in education employees.

Distribution of studies included in the meta-analysis according to years is shown in Table 1, their distribution according to the organizational sector are shown in Table 2 and distribution according to publication type is shown in Table 3.

Table 1. Distribution of studies according to years

Year in which the study was carried out	Frequency	Percentage (%)
2007	1	4.55
2008	3	13.63
2009	1	4.55
2010	2	9.09
2011	1	4.55
2013	1	4.55
2014	3	13.63
2015	6	27.26
2016	3	13.64
2017	1	4.55
Total	22	100

According to the data in Table 1, it is seen that researches were published between 2007 and 2017 and the maximum number of studies were published in 2015 (n = 6).

Table 2. Distribution of studies according to organization sector

Sector in which study was carried out	Frequency	Percentage (%)
Healthcare	7	31.82
Tourism	5	22.73
Education	3	13.64
Banking	2	9.08
Sport	2	9.08
Energy	1	4.55
Media	1	4.55
Public	1	4.55
Total	22	100

According to the data in Table 2, it is seen that the studies were mostly carried out in healthcare, tourism and education sectors.

Table 3. Distribution of studies according to publication type

Publication type of the study	Frequency	Percentage (%)
Master's Thesis	9	40.91
PhD Thesis	2	9.09
Article	11	50.00
Total	22	100

According to the data in Table 3, it is seen that 12 of the studies are articles and 10 are theses. The research did not include the papers presented in related symposium or congresses, studies carried out abroad and studies with publication restriction. Studies included in analysis in the research are indicated with () symbol in the references.

2.4 Validity and Reliability

In meta-analysis, validity is examined in two parts as internal and external validity. Internal validity is related to the use of appropriate data collection and analysis methods, and external validity refers to the extent to which the studies achieved represent the universe. For meta-analysis to be reliable, at least 30 studies should be reached in relational studies (DeCoster, 2004). According to these explanations, it can be said that the research is valid and reliable.

2.5 Publication Bias Analyses

It can also be determined if there is any publication bias in the meta-analysis studies by using cone chart (Dinçer, 2014). The cone chart obtained as a result of analyses conducted for this purpose is given in Figure 1.

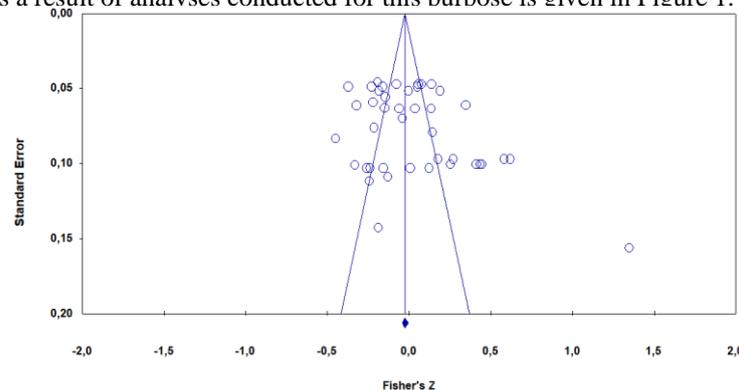


Figure 1. Cone chart of the studies

According to the cone chart in Figure 1, it can be said that studies are mostly in the top of the cone and therefore the sample sizes are big in general. In addition, it was determined that Tau coefficient is .24 and p value is .48 in the analyses. When the data obtained is examined, it can be said that the study does not have publication bias as Tau coefficient is close to 1 and p value does not create a significant difference and symmetric distribution is seen on both sides of the general impact line in the middle of cone chart.

3. Results

42 comparisons in 22 studies in which the relationship between stress and organizational commitment is investigated in employees in Turkey are included in the research. Impact coefficients of the meta-analysis study conducted with the research group are given in Table 4.

Table 4. Impact coefficients of the meta-analysis study

Title of the Study	Organizational Commitment	Sample Size	Correlation	Fisher's Z
Akpulat ve ark. 2016	general	324	-0.142	-0.143
Aydoğan 2008	<i>continuance</i>	378	0.190	0.192
Aydoğan 2008	affective	378	-0.180	-0.182
Aydoğan 2008	normative	378	-0.003	-0.003
Efeoğlu, Özgen 2007	general	162	0.144	0.145
Erdilek Karabay 2014	general	268	-0.309	-0.319
Ergün, Çelik 2015	general	286	-0.216	-0.219
Gül et al. 2008	general	87	-0.129	-0.130
Güngör Seyhan 2015	general	52	-0.184	-0.186
Kılıç ve ark. 2008	general	101	-0.319	-0.331
Pekerşen 2015	<i>continuance</i>	449	0.138	0.139
Pekerşen 2015	<i>continuance</i>	449	0.077	0.077
Pekerşen 2015	general	449	0.059	0.059
Pekerşen 2015	normative	449	-0.076	-0.076
Tekingündüz, Kurtuldu 2015	general	208	-0.041	-0.041
Turuç ve Erkuş 2010	general	175	-0.210	-0.213
Yıldız 2013	<i>continuance</i>	423	0.053	0.053
Yıldız 2013	affective	423	-0.354	-0.370
Yıldız 2013	general	423	-0.224	-0.228
Yıldız 2013	normative	423	-0.158	-0.159
Zincirkıran ve ark. 2015	general	254	-0.146	-0.147
Düzgün 2014	<i>continuance</i>	109	0.524	0.582
Düzgün 2014	<i>continuance</i>	109	0.264	0.270
Düzgün 2014	affective	109	0.177	0.179
Düzgün 2014	general	109	0.552	0.621
İnan Yousuf 2015	general	83	-0.238	-0.243
İncesu 2011	affective	102	0.390	0.412
İncesu 2011	general	102	0.420	0.448
İncesu 2011	normative	102	0.409	0.434
İncesu 2011	<i>continuance</i>	102	0.250	0.255
Kaplan 2017	general	44	0.874	1.350
Köseoğlu Şalk 2016	<i>continuance</i>	251	-0.059	-0.059
Köseoğlu Şalk 2016	affective	251	0.037	0.037
Köseoğlu Şalk 2016	normative	251	0.135	0.136
Şahin 2014	general	269	0.335	0.348
Üzüm 2010	General	479	-0.190	-0.192
Yiğit 2009	<i>continuance</i>	97	0.123	0.124
Yiğit 2009	<i>continuance</i>	97	0.009	0.009
Yiğit 2009	affective	97	-0.233	-0.237
Yiğit 2009	General	97	-0.154	-0.155
Yiğit 2009	Normative	97	-0.254	-0.260
Sökmen ve Şimşek 2016	General	147	-0.420	-0.448

It is seen in Table 4 that the number of individuals included in the study groups of the researches vary between 44 and 479 and correlation coefficients vary between -0.420 and 0.874.

In meta-analysis studies; the course of the process is coding, calculation of impact coefficients, heterogeneity test and calculation of the overall impact. For that reason, heterogeneity analysis was conducted in the third stage of the research and data was given in Table 5.

Table 5. Heterogeneity test meta-analysis results

Heterogeneity	df	Average Effect	95% CI	P
Q 534. 390	41	E++ -.024	-.044 – -.004	.00

In heterogeneity test data, it is seen that $Q = 534.390$, $p = .00$. Since p value is smaller than $.05$ and larger than the value which correspond to df value of Q value on χ^2 chart ($Q = 66.766$), it can be said that meta-analysis application has a heterogeneous nature. Therefore, the analyses were repeated with the random effects model. In the analysis with random effects model, it is seen that the weight of the data is between $-.50$ and $.50$ in general and in other words, their contribution in overall impact is close to each other. In addition, overall impact coefficient of these studies, the correlation coefficients of which are between $-.420$ and $.874$ according to Fisher z , is calculated as ($r = .026$, $p > .05$). This result can be evaluated as positive and weak impact size.

It is seen that researches on stress in employees generally concentrate under the titles of work stress or organizational stress in general. In the analyses within the scope of the research, these studies were combined under the title of stress in employees. Table 6 contains data obtained from analyses conducted.

Table 6. Stress in employees' meta-analysis results according to random effects model

Heterogeneity	df	Average Effect	95% CI	p
Stress in Employees Q 534. 390	42	E++ .026	-.048 – .100	.48
Stress in Employees – Affective Commitment Q 72. 378	6	E++ -.034	-.243 – .177	.75
Stress in Employees – <i>Continuance</i> Commitment Q 12. 716	4	E++ .100	-.025 – .222	.11
Stress in Employees – Normative Commitment Q 41. 379	6	E++ .006	-.137 – .149	.93

According to Table 6, in the research it was determined that data obtained from 22 studies on stress in employees is between $-.048$ and $.100$ limits in 95% confidence interval with $df=42$ degree of freedom, p value is larger than $.05$ and average impact size is positive. In other words, it can be said that there is no significant difference between stress and organizational commitment relationship averages in employees and stress has a positive relationship impact on organizational commitment in employees. In consideration of the impact size ($E++ = .026$), impact coefficient was determined as weak. In addition, it can be expressed that there is weak negative relationship between stress and affective commitment ($E++ = -.034$); positive and weak relationship between stress and normative commitment ($E++ = .006$) and positive and small relationship between stress and continuance commitment ($E++ = .100$) in employees.

In the research, it is seen that the research conducted to determine how the impact of stress on organizational commitment in employees vary according to the sector they work has intensified; meta-analysis is conducted also with health ($n=7$), tourism ($n=5$) and education ($n=3$) sectors and average impact size is ($E++ = .085$) in health, ($E++ = .101$) in tourism and ($E++ = -.107$) in education. Results obtained as a result of analyses conducted are given in Table 7.

Table 7. Employees' organization sector analysis results according to random effects model

Heterogeneity	df	Average Effect Size	95% CI	p
Healthcare Q 92. 799	12	E++ .085	-.045 – .213	.19
Tourism Q 136. 543	15	E++ .101	-.010 – .210	.74
Education Q 87.166	8	E++ -.107	-.236 – .025	.11

According to Table 7, it can be said that impact coefficients calculated are positive in health and education and negative in education; according to the classification of Cohen et al. (2007), a weak impact size is seen in health and a small impact size is seen in tourism and education.

4. Discussion

This study aims to exhibit the relationship between stress and organizational commitment in employees with meta-analysis method. To achieve this objective, results of 22 studies in total from different sectors such as health, tourism, education, banking, energy and sports were examined and the impact size of stress on organizational commitment in employees is calculated and an overall impact size coefficient is obtained. In addition, results of researches in which organizational commitment is discussed as affective commitment, normative commitment and continuance commitment were also used and the impact size of stress on these sub-dimensions was calculated. Moreover, considering that this impact size may vary according to the sector; health, tourism and education sectors with the most intense work were discussed separately. However, this research has the restrictions which occur in many meta-analysis

studies. These can be listed as the restriction of search engines and electronic databases, publications blocked by researchers and not defining the sample group clearly in the researchers.

In this research, it was concluded that stress has a weak positive relationship impact on organizational commitment in employees. Stress affecting organizational commitment positively can be explained with the second phase of general adaptation syndrome. In employees who experience stress, first reactions to the source of stress are formed and these reactions are accompanied by physiologic changes. When the duration of exposure to the cause of stress is extended, employees resist to the cause of stress and struggle actively to eliminate the imbalance caused by the stress (Ross & Altmaier, 1994). Employees' active behaviours to get rid of the imbalance caused by stress may affect their organizational commitment positively and stress may undertake a role of increasing organizational commitment. On the other hand, although the relationship between stress and organizational commitment is positive in employees, its weak level can be explained by the fact that stress causes become chronic and employees become insensitive to these causes due to the possibility that individuals may encounter a factor which cause stress at any time in daily work life. As a result of this insensitivity, individuals continue their work under even excessive stress and their organizational commitment is not heavily affected by this stress. In addition, this result of the research is compatible with other study results (Efeoğlu & Özgen, 2007; İncesu, 2011; Özdemir, 2017; Pekerşen, 2015; Yiğit, 2009).

In this study, it was also concluded that there is weak negative relationship between stress and affective commitment; weak positive relationship between stress and normative commitment and small positive relationship between stress and continuance commitment in employees. Similar to this result, Meyer et al. (2002) reported that affective commitment is negatively related to stress and work-family conflict, but *continuance* commitment is positively related to both variables in their meta-analysis study on organizational commitment. Researchers stated that they encountered very few studies to calculate the relationship between normative commitment and stress. That stress affects only affective commitment negatively among organizational commitment sub-dimensions can be explained by the fact that stress is an emotional concept. Employees who have high affective commitment levels have also high levels of integration with the organization, making an effort towards organizational objectives and willingness to contribute in the organization (Allen & Meyer, 1990). However, affective commitment of employees who cannot go into balance state against stress and start exhaustion may be more easily affected by this situation in a negative manner and this negative impact may cause that affective commitment levels of the employees decrease. Therefore, employees who are exposed to causes of stress may exhibit behaviours in the direction of breaking emotional ties which enable integration and identifying with the organization. In addition, many researches (Aydoğan, 2008; Yıldız, 2013; Yiğit, 2009) verify that there is a negative relationship between stress and affective commitment in employees. On the other hand, stress has a positive impact on normative and continuance commitments of employees. Employees with high normative commitment level have emotions such as being responsible, feeling liability, being loyal and being grateful to the organization. Employees' worrying about fulfilling their responsibilities and liabilities as a result of the pressure that stress causes on employees may affect their normative commitment levels positively. Positive relationship between stress and normative commitment is a result which is also verified in different researches (İncesu, 2011; Köseoğlu Şalk, 2016). In continuance commitment, personal interests are in the forefront unlike moral beliefs in normative commitment. Employees cannot risk the losses that leaving the organization will cause. For that reason, stress affects continuance commitment more compared to normative commitment. As the stress level increases, an increase may be observed in the continuance commitment of employees who are afraid to lose what they have. This result is also compatible with other research results (Aydoğan, 2008; Düzgün, 2014; İncesu, 2011; Pekerşen, 2015; Yıldız, 2013; Yiğit, 2009).

Another result of this study is that impact of stress on organizational commitment is positive and weak in the field of health. While the fact that this impact is positive in the field of health can be explained by the second phase of general adaptation syndrome as mentioned above, its being weak is quite interesting. Because, the field of health includes profession groups in which stress occurs most intensively. The sample of the studies reviewed in the field of health consists of nurses (Ergün & Çelik, 2015; Köseoğlu Şalk, 2016) and all healthcare personnel described as doctors, administrative/technical personnel, nurses, midwives and emergency medical technicians (Tekingündüz & Kurtuldu, 2015). However, in other studies (Gül et al., 2008; İncesu, 2011; Kılıç, Efeoğlu, Mimaroğlu & Özgen, 2008) the sample was defined as healthcare personnel, but who the healthcare personnel include is not mentioned. Sample of the study of Efeoğlu and Özgen (2007) consists of regional coordinator, regional director and medical representatives working at 66 pharmaceutical companies. The possibility that sample is selected from healthcare professionals who have lower exposure levels to stress in many studies may explain the weak relationship between stress and organizational commitment in the field of health. However, the fact that healthcare professionals have high insensitivity to stress as stress is intense in the field of health may also be the cause of this weak relationship. As a result of this insensitivity, healthcare professionals are not affected by causes of stress and the impact of stress on their organizational commitment may remain weak. In addition, this result of the study verifies other study findings (Efeoğlu & Özgen, 2007; İncesu, 2011) as well.

Another result of this study is that impact of stress on organizational commitment is small and positive in the field of tourism. Tourism is also one of the sectors where causes of stress occur intensively. The study by Sökmen (2005) exhibited that especially long working hours and customers' different and sometimes impossible or unfair demands create stress on tourism employees. That the relationship between stress and organizational commitment is small in this study may be caused by sample selection. While the sample in the study by Pekerşen (2015) consists of cooks, the sample of the study by Yiğit (2009) consists of middle level managers, the sample of the study by Düzgün (2014) consists of top level managers and the sample of the study by Şahin (2014) consists of travel agency employees. In the sample selection by Akpulat et al. (2016), a general expression of tourism employees was used and who these tourism employees are is not explained. Top level and middle level managers and travel agency employees, who constitute the majority of the sample, may not be exposed to causes of stress as much as employees who face customers at any time in tourism. The fact that stress does not form intensively may cause that its impact on organizational commitment is small. In addition, the positive relation between stress and organizational commitment may be caused by the fact that tasks causing stress are challenging and emotions such as happiness, superiority and difference that occur when these challenging tasks are achieved. While intensive demands may be a cause of stress in tourism which is a service sector, fulfilling these demands effectively may bring employees to a prioritized position in their workplaces and this position may affect organizational commitment in a positive manner. In addition, other researches (Pekerşen, 2015; Yiğit, 2009) confirm that there is a weak positive relationship between stress and organizational commitment in employees.

In this study, it was also concluded that the impact of stress on organizational commitment is small and negative in the field of education. Although stress affects organizational commitment positively in the fields of health and tourism, this impact is negative in education. The cause of this negative impact can be explained by the fact that study samples in the field of education consists of teachers only. Teachers, who are the building blocks of education-teaching activities, are obliged to fulfil many tasks and responsibilities. Main tasks of teachers can be listed as teaching, administrative and management task, professional/specialty task and student consultancy task (Özdemir, Yalın & Sezgin, 2012). Competence fields are gathered under three main titles as professional knowledge, professional skill and attitude and values. Teachers' having tasks and responsibilities in many different processes may cause that they are exposed to stress more frequently and intensively and that they cannot go into balance state against this intensive stress cause that they experience exhaustion and it can be said that this exhaustion affects organizational commitment in a negative manner (Demirel, Tohum & Kartal, 2017).

Study results indicate that stress may have a positive impact on organizational commitment. For example, Robbins and Judge (2015) state that stress is not completely bad, it is also an opportunity when it provides potential gains. They discuss stress in two parts as encouraging causes of stress; work load, pressure to complete tasks, urgency and preventive causes of stress; paperwork, workplace policies, responsibility complexity, etc. In addition, they also mention that encouraging causes of stress cause less tension than preventive causes of stress. Based on the view of Robbins and Judge (2015), it can be said that causes of stress in employees should be investigated on the basis of organizations and a contribution may be provided in organizational commitment of employees by means of the power of encouraging causes of stress.

Due to the negative impact of stress on affective commitment in employees; organizational features (organizational policy, organizational structure, organizational process), work demand and role features (working conditions, personal relationships, work demand and role features) and personal features (career concern and personal factors) which cause preventive stress in work life may be investigated on sector basis and each sector may develop suitable solutions for preventing harmful impact of stress in accordance with the results obtained. Due to the positive impact of stress on normative commitment and continuance commitment; tasks and responsibilities which are challenging and improving their potentials may be assigned to the employees and encouraging causes of stress may be used.

Since the impact of stress on organizational commitment exhibit sectorial differences in the results of the research, investigations may be conducted at certain intervals on factors such as organizational structure and climate, physical environment conditions, work done, career development and relationships within the organization which may cause stress in different sector employees; participative management system may be realized; activities may be carried out to determine objectives; role analysis and classification may be done; emotional climate controls may be done; time management and stress management trainings may be given to the employees and social support may be provided (Özkalp & Krel, 2016). Thus, stress levels of the employees may be determined and a contribution may be provided in reducing stress and increasing affective commitments in sectors where stress is high.

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