

## Analysis of Psychological Resilience in Employees in terms of Positive and Negative Affect

### *Çalışanlarda Psikolojik Dayanıklılığın Pozitif ve Negatif Duygu Açısından İncelenmesi*

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#### Abstract

The aim of this study is to determine whether there is a significant relationship between the psychological resilience of employees and their positive - negative emotions. The sub-objectives of the research are; to investigate the influence of positive and negative affect on psychological resilience, to determine the dimensions of psychological resilience which are affected statistically and to determine whether psychological resilience varies according to demographic factors. For these purposes, data has been obtained from 170 private sector employees by face-to-face survey method. A validity and reliability analysis have been performed for the psychological resilience and positive and negative emotion scales used in the research. The data obtained using structurally validated scales have been analyzed by correlation, simple linear regression, MANOVA, Independent Sample T test and One-Way ANOVA test. As a result of the analyses; it has been determined that there is a positive and significant relationship between the self-commitment, challenging and control dimensions of psychological resilience and positive affectivity. A negative and significant has been determined between the self-commitment, challenging and control dimensions of psychological resilience and negative affectivity. It has been determined that the positive affect is the most effective on the dimension of challenging. The effect level on the negative affectivity has been determined as the dimensions of challenging, self-commitment and control.

**Keywords:** Organizational climate, psychological resilience, positive and negative affectivity

#### Özet

Bu araştırmanın amacı; çalışanların psikolojik dayanıklılığı ile pozitif ve negatif duygulanım arasında anlamlı bir ilişki olup olmadığını belirlemektir. Araştırmanın alt amaçları ise; pozitif ve negatif duygulanımın psikolojik dayanıklılığa etkisini incelemek, psikolojik dayanıklılığın istatistiksel olarak hangi boyutlarının ne düzeyde etkilendiğini saptamak ve demografik faktörlere göre psikolojik dayanıklılığın farklılık gösterip göstermediğini incelemektir. Bu amaçlar doğrultusunda yüz yüze anket yöntemiyle 170 özel sektör çalışandan veri elde edilmiştir. Araştırmada kullanılan psikolojik dayanıklılık ile pozitif ve negatif duygu ölçekleri için geçerlik ve güvenirlik analizi gerçekleştirilmiştir. Yapısal geçerliği sağlanan ölçekler kullanılarak elde edilen veriler korelasyon, basit doğrusal regresyon, çok değişkenli varyans analizi, bağımsız örneklem t testi ve tek faktörlü varyans analizi ile analiz edilmiştir. Gerçekleştirilen analizler sonucunda; psikolojik dayanıklılığın kendini adama, meydan okuma ve kontrol boyutları ile pozitif duygulanım arasında pozitif yönde anlamlı ilişki saptanmıştır. Psikolojik dayanıklılığın kendini adama, meydan okuma ve kontrol

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boyutları ile negatif duygulanım arasında ise negatif yönde anlamlı bir ilişki saptanmıştır. Pozitif duygulanımın en çok meydan okuma boyutu üzerinde etkisinin olduğu belirlenmiştir. Negatif duygulanımın üzerinde etki düzeyi ise sırasıyla meydan okuma boyutu, kendini adama boyutu ve kontrol boyutu olarak belirlenmiştir.

**Anahtar Kelimeler:** Örgüt iklimi, psikolojik dayanıklılık, pozitif ve negatif duygulanım

## **Introduction**

Human capital has been a critical factor in all organizational approaches from the first day of working life to today. Although human beings are not regarded as an important factor in the classical organization approach, they still have a very important share in production due to the low mechanization rate in this period. Along with modern and post-modern approach, the human beings have become a production factor which must be studied, supported, developed and maintained in terms of the objectives, efficiency and performance of the organization. Therefore, there has been considerable wealth in the literature of organizational behavior in the last century. Researchers have supported the empirical studies on the questioning approaches of organizations towards employee behavior such as how and why. One of the most recent topics examined among these studies is psychological resilience. In today's competitive organization structure, it is observed that employees are in psychological warfare at a higher level. Considering factors such as stress, competition and workload in the atmosphere of the organization, the high level of psychological resilience in an employee ensures that the employee is at least in the protective position in this war. In this process, changes also take place in the perceptions that work naturally. Different emotions develop in the workplace in relation to the events and administrative attitudes within the organization. Events causing positive reflections in the employee's mind and perception trigger positive affectivity, while the events causing negative reflections trigger positive affectivity.

Empirical studies have proven that psychological resilience increases the resistance against stress elements in life and that positive emotions play a key role in the achievement of individuals with high resilience (Ong et al., 2006). The psychological resilience dimensions of commitment, control, and difficulty moderate the effect of stress by changing the perception of the events or the current situation, reducing the adverse effects of stressful life events by affecting cognitive evaluation and coping (Sezgin, 2012). It is reported that mental illnesses are also seen rarely in people with high psychological resilience values (Sakarya and Güneş, 2013). In addition, individuals with high psychological resilience have positive emotions even in stressful environments and events (Swaminath and Rao, 2010). These people naturally develop negative feelings and thoughts, but they can balance these negative feelings and thoughts with positive ones as a trait (Heekin, 2016). Evaluated from this point of view, it is thought that emotions that develop in response to the factors in working life can affect the psychological resilience of employees as a supporting factor or as an abrasive factor. Therefore, psychological resilience and positive and negative affectivity developed during the working life have been examined with this study.

## 1. Psychological Resilience

Psychological resilience, one of the current approaches to organizational behavior, is a mental capacity that allows people to cope with harmful bad events (Werner & Smith, 1992). It has contributed to the development of individuals' cognitive, behavioral and emotional capacities with its existence (Eryilmaz, 2013). It is therefore deemed particularly important by the organizations. Many agencies, including the U.S. Army, provide training for in-house psychological resilience to increase the effectiveness of their employees and the welfare of their working environment (Heekin, 2016). Many definitions have been made in the literature on the concept of psychological resilience, which is emphasized at such a degree. Psychological resilience is defined by Masten et al. (1990:426) as “the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances”, by Mercan et al. (2015) as “the ability to stand before challenges and difficulties and achieving success despite everything”, by Doğan (2015) as “psychological endurance and the power of eliminating psychological problems, negative lives and stress in a quick manner, of being healed and recovering, by Rutter (1987) as “protective factors modifying or improving the reaction of the individual towards some environmental threats aligning the individual towards an unsuitable conclusion and by Fletcher and Sarkar (2012:675) as “the role of mental processes and behavior in promoting personal assets and protecting an individual from the potential negative effect of stressors”. There are some common points in these definitions. These are psychological endurance being a dynamic process, successful coping, positive adaptation or competence under conditions of trauma, severe life events or at a significant risk (Gizir, 2007).

Psychological resilience is regarded as a personal trait that reduces stress-related negativities and promotes harmony and suggests that some individuals are born as strong and resistant due to their genetic characteristics, but some researches have revealed that psychological resilience is a trait that can be learned later on (Kanbur et al., 2017). Terzi (2008) has also stated that psychological resilience is the personality trait of the employee as a source of resistance when encountering stressful life events. However, the main difference of psychological resilience from other personality traits is that it can be improved. Barbarin (1993) has emphasized that psychological well-being in adolescents and young adults cannot be explained solely by the personal qualities of the individual, and that low income is an important risk factor. According to Yöndem and Bahtiyar (2016), the effects of factors such as cognitive abilities, self-efficacy, beliefs, a positive approach to life, and a good sense of humor can be considered to have an effect on psychological resilience. It is stated that close relationships within the family, authoritarian but never despotic parents who give responsibility, positive family life and the existence of socioeconomic advantages may contribute to the development of the psychological resilience of the individual during childhood. Meredith et al. (2011) categorize factors that promote resilience in individuals as individual, family, and working environment. Factors such as positive emotion, positive thinking and realism explain individual factors and factors such as support, communication and emotional attachment explain familial factors; while team work and compliance are the factors that account for the working environment.

As personality, Wagnild and Young (1993) have stated that there are the main five characteristics of psychological resilience. These are self-confidence expressing the belief that an individual can do something; insistence that expresses the persistence against adverse

events; equality, balance and harmony, depending on experiences; having a purpose to live and the feeling of independence. Contrary to this, Simoni and Paterson (1997) have stated the characteristics of the psychologically-resilient individuals as believing that the power to govern life is in themselves, being open to change by seeing active participation and change in life as an exciting struggle. Individuals with high resilience have higher optimism and internal stagnation than the others and also differ from other individuals with high life energy, self-confidence and flexible structures (Derbis and Jasiński, 2018). In addition, individual differences in terms of psychological endurance can be effective in increasing stress resistance as well as accelerating the relief from stressful situations (Ong et al., 2006).

Psychological resilience consists of three dimensions as self-commitment, control and challenge (Kobasa, 1979). “Commitment is the ability to believe in the truth, importance and interest value of who one is and what one is doing; and thereby, the tendency to involve oneself fully in many situations of life” (Kobasa, 1988, p. 101). Challenging is to believe in change rather than being static. Challenging, which means regarding the change as a normal aspect of life presenting opportunities for development, consists of enjoying trying new things, self-confidence and opportunism (Terzi, 2008). “Control refers to the tendency to believe and act as if one could influence the course of events” (Kobasa, 1988: 101).

The availability of the protective factors in the risks exposed during the development of psychological resilience, which is the ability of the individuals to recover themselves against and overcome the various difficulties and challenges encountered in life (Çetin et al., 2015) and mitigating or eliminating the negative effects thereof (Öz and Yılmaz, 2009). Psychological resilience is not a character trait that protects the individual from adverse effects of the surroundings. The real causes that lead to individual success are protective factors (Oktan, 2012). Protective factors are therefore considered to be more important than risk factors for increasing the resilience capacity of the individual (Cal et al., 2015). In psychological resilience literature, risk factors are examined in two categories as biological and environmental factors. Factors such as birth rate decrease, increase in premature births and congenital anomalies define biological factors, while poor economic conditions and poverty are the environmental factors (Demircioğlu, 2017).

There are a number of factors in the literature that affect psychological resilience. Accra and Amah (2014) have found that mentoring affects resilience positively in organizations. Fayombo (2010) has investigated resilience with personality dimensions and found a positive relationship between personality and conscientiousness, agreeableness, openness to experience, extraversion dimensions and resilience, and negatively between neuroticism dimension of personality and resilience. Çetin et al. (2015) have found that the persons with high extroversion, self-discipline, openness to development and high concordance and low neuroticism have high psychological resilience. Arslan (2015) has stated that self-efficacy, self-esteem and positive emotions are important factors in the psychological resilience. Rudwan and Alhashimia (2018) have found a significant relationship between mental health and psychological resilience and stated that women are more resistant than men. Bulathwatta et al. (2017) have found that those who participated in the study in resilience and durability used different levels of resistance and emotional intelligence. Narayanan and Onn (2016) have found that social support and self-efficacy affect psychological resilience.

## 2. Positive and Negative Affectivity

The situation that expresses the ability of the individual to participate in stimuli, events, memories, thoughts, emotional response is expressed as affectivity (Lazarus, 1991). The most basic theory accepted for affectivity in literature is the Affective Events Theory. Affective Events Theory, which describes the effects of emotions and moods on individual behaviors, has been developed by Weiss and Cropanzano (Özdevecioğlu, 2004). According to the theory emotional experiences that individuals experience and are affected in the past influence their current organizational behavior (Weiss and Cropanzano, 1996). Affect, emotional affectivity is usually organized around two general dimensions – positive affectivity (PA) and negative affectivity (NA) (Wróbel, 2017). Positive emotional dimension refers to a decisive tendency towards positive affectivity, while negative emotional dimension refers to a decisive tendency towards negative emotions (Boyes et al., 2017). It is the dissatisfaction with a wide range of emotions, including negative emotion, fear, sadness, anger and guilt. Emotional situations depicted both in negative emotion and in positive emotion can coexist (Hu and Gruber, 2008).

The emotions that result from the conscious and unconscious processing of knowledge in the mind are short and intense emotional states that are consistent with well-defined stagnant or complex behavior (Andries, 2011). While coherent and pleasant behaviors are associated with high positive emotions, incompatible behaviors such as disagreement, oppression, and neuroticism are associated with high negative emotions (Diener et al., 2003). Positive emotions, which express a voluntary interaction with the individual's environment (Crawford and Henry, 2004), are reflected by the feeling of being enthusiastic, active and willing to individuals while negative emotions are reflected by emotional states such as anger, disdain and nervousness (Ekkekakis, 2012; Little et al., 2007; Watson et al., 1988). Negative emotions cause introspective and significant general dissatisfaction and distressed mood. The common characteristics of people with negative emotions are that they focus only on negativity in life (Corno et al., 2016).

High negative affectivity is a condition where negative moods such as anger, contempt, disgust, fear, guilt are seen more in person (Yurcu, 2017). High negative emotions often manifest with nervousness, tension and fear. In the case of low negative emotions, relaxation and calm are dominant in individuals (Wróbel, 2017). Individuals with high negative affectivity experience more distress and dissatisfaction compared to those with low negative affectivity, they make more problems out of failures and incompleteness and they constantly interpret the events as negative (Yıldırım and Akın, 2018). High level of negative emotions blocks intellectual intelligence and lead to problems such as reluctance, inefficiency, inability to focus, perception disorders in the individual (Aşık, 2017). As a result of these factors, individuals may experience tension and feel more intimidated by feelings of anxiety, guilt and sadness (Yalınız, 2014).

Positive affectivity brings satisfaction, being able to commit oneself, attachment and life satisfaction (Diener and Seligman, 2004). However, the increase in positive emotionality can make other employees more inclined to see working conditions more positive. Positive emotionality contributes more to the benefit of organizational members and organizational outcomes by increasing social awareness in individuals. This increase contributes to the prosocial behaviors of employees such as organizational citizenship behavior (Nergiz, 2015).

A continuing positive emotion develops a tendency to provide a positive emotional experience, raising the sense of competence and well-being by increasing loyalty among employees (Watson et al., 1988). However, the positivity level of emotionality varies from person to person. For some people, feelings in the workplace, emotions and for some, the benefits obtained from the work can be more decisive on their attitudes (Özdemir, 2015). Therefore, it is said that one's own positive and negative feelings are largely under their control (Özdevecioğlu et al., 2013). Besides, life satisfaction and therefore subjective well-being of individuals with positive emotions are high, but this does not mean that they do not experience negative emotions (Deniz et al., 2012).

Emotions that people experience can evoke their own behaviors as well as the behavior of other individuals surrounding these people and affect the emotional atmosphere of the environment (Yıldırım and Akın, 2018). Therefore, it is not enough to evaluate the affectivity in the organizational environment only on an individual basis. Individuals with high negative emotions within the organization also affect other employees with their unsatisfied, sad, pessimistic, and psychologically-distressed states (Schepman and Zarate, 2008). Thus, the development of positive feelings should be supported in all employees as much as possible. In particular, in terms of psychological resilience; the contribution of the psychological resilience, the loss of the physiological consequences of negative emotions and the return of the former to healthy, the increase in cognitive ability to make decisions in stressful situations, and the development of individual psychological resources are indisputable (Fredrickson et al., 2003). On the contrary, the effects of negative affectivity in employees are very devastating. The negative emotion increases the stress-tension relationship because it is a more constant emotional state, and employees with higher negative emotions tend to have a negative assessment of their environment regardless of their working conditions (Rydstedt et al., 2013). The presence of negative feelings, however, is considered a direct indicator of depression. (Gyollai et al., 2011). Ongoing negative emotional levels may indicate threats to employee health. These adverse effects rather evoke the stress that leads to increased illnesses (Hu and Gruber, 2008). When stress is high, there is a competition for the depletion of cognitive resources in the workplace (Este'vez-Lo'pez et al., 2016).

There are several studies in the literature aimed at affectivity and positive and negative affectivity. Pervez (2010) has found that the emotions in the workplace are important in terms of employee well-being and job satisfaction. Geue (2017) has stated that having positive feelings in the intense service environment can contribute to team work and improve performance. Saeed et al. (2013) have found that attitudes by managers with positive affectivity increase employee performance. Isen and Reeve (2005) have stated that positive affectivity increases employees' internal motivation, pleasure from work and performance. Aşık (2017) has determined that positive and negative affectivity increases organizational identification. Lyubomirsky et al. (2005) have found that positive emotion is the main source of success related to happiness. Doğan and Özdevecioğlu (2009) have found that positive emotions increase task performance and contextual performance, while negative emotions decrease it. Isen (2001) have stated that positive affectivity increased the ability of problem solving and decision making by increasing cognitive processing capacity. Kuppens et al. (2008) have reported that the effect of positive and negative affectivity on the quality of life differs from culture to culture. Özdemir (2015) has found that negative affectivity influences job satisfaction negatively. Özdevecioğlu et al. (2013) have found that positive

emotionality reduces individual aggression. Watson et al. (1998) have reported that negative emotion is directly related to both anxiety and depression. Yıldırım and Akın (2018) have found a negative relationship between organizational ostracism and positive emotionality and a positive relationship between organizational ostracism and negative emotionality. As seen in the results of these studies, positive and negative affectivity have significant effects on the concepts of organizational behavior.

In this study, the effect of emotionality on psychological resilience, which is one of contemporary issues in organizational behavior, has been examined. The main problem with psychological resilience is the psychological resilience of individuals who are not in the desired level or inadequate. In these individuals, negative emotions diminish the interest and attention of the individual and hinder the ability to cope with a sudden problem or threat. Accordingly, the possibility of a reduction in work stress decreases and psychological resilience decreases even more (Mei-Ju et al., 2016). Therefore, to increase psychological resilience it is necessary to carefully examine positive and negative affect in employees and to aim efficacy and efficiency in organizational outputs.

### **3. Material and Method**

#### **3.1. Purpose of the Research**

The purpose of the research is to examine whether there is a significant relationship between the psychological resilience of the employees, which is very important for the organizations, and the positive and negative affect during the working process. The sub-objectives of the research are; if there is a significant relationship, to determine the effect of positive and negative affect on psychological resilience; in this case, to determine the extent to which psychological resilience is affected statistically and finally, to determine whether the psychological resilience statistically varies according to demographic factors.

#### **3.2. Research Model and Hypotheses**

The main dependent variable of the research, in which the screening model is used, is the psychological resilience and the sub-dependent variables are commitment, challenging and control. The independent variables of the study are positive and negative affectivity. In this context, 12 hypotheses have been proposed using demographic factors and dependent and independent variables in order to achieve the purpose of the research. The conceptual model of the research regarding these hypotheses is shown in Figure 1.

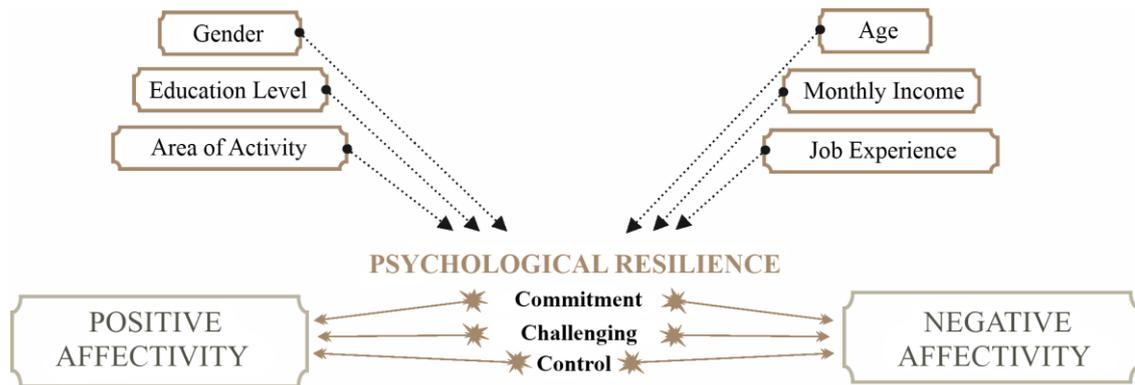


Figure 1. Conceptual model

### Hypotheses of the Research;

**H<sub>1a</sub>:** *There is a significant relationship between positive affectivity and the commitment dimension of psychological resilience.*

**H<sub>1b</sub>:** *There is a significant relationship between positive affectivity and the challenging dimension of psychological resilience.*

**H<sub>1c</sub>:** *There is a significant relationship between positive affectivity and the control dimension of psychological resilience.*

**H<sub>1d</sub>:** *There is a significant relationship between negative affectivity and the commitment dimension of psychological resilience.*

**H<sub>1e</sub>:** *There is a significant relationship between negative affectivity and the challenging dimension of psychological resilience.*

**H<sub>1f</sub>:** *There is a significant relationship between negative affectivity and the control dimension of psychological resilience.*

**H<sub>1g</sub>:** *Psychological resilience indicates a significant difference based on gender.*

**H<sub>1h</sub>:** *Psychological resilience indicates a significant difference based on age.*

**H<sub>1k</sub>:** *Psychological resilience indicates a significant difference based on education level.*

**H<sub>1m</sub>:** *Psychological resilience indicates a significant difference based on monthly income.*

**H<sub>1n</sub>:** *Psychological resilience indicates a significant difference based on job experience.*

**H<sub>1r</sub>:** *Psychological resilience indicates a significant difference based on area of activity.*

### **3.3. Scales Used in the Research**

The survey used in the research consists of a psychological resilience scale including 5-point Likert-type questions and Positive and Negative Affect Scale (PANAS).

In order to determine the positive and negative emotions of the employees, a total of 20-item two-dimensional a scale developed by Watson et al. (1988) and adapted to Turkish by Gençöz (2000) has been used. The scale has been adapted by the authors to Turkish with two original dimensions, positive emotion and negative emotion

### **3.4. Data Collection and Data Analysis Method of Research**

The data required for testing the hypotheses put forward within the scope of the research has been obtained by face-to-face survey method. SPSS 20.0 (Statistical Package for Social Sciences) software has been used to evaluate this data obtained through the research. Confirmatory Factor Analysis has been used to determine the structural validity of the scales used in the research; reliability analysis has been used to determine the internal consistency research, correlation analysis has been used to determine the direction and intensity of the relationship between the variables, simple linear regression analysis and MANOVA analysis have been used to examine the relationship between the variables and Independent Sample T Test and One-Way ANOVA Test has been used to identify the differences.

### **3.5. Population and Sample of the Research**

The population of the research consists of private sector employees. The sample of the study consists of employees of a private enterprise operating in the field of energy production in Zonguldak. The reason why this business is selected in the research is that it is the largest private sector enterprise that can be reached within the region, the working conditions are severe and requires psychological resilience and the working environment requires intensive communication between the employees. Purpose sampling method among non-probable sampling methods has been used in the survey and data has been obtained from 182 employees. 12 surveys with missing / incorrect information have been excluded from the evaluation and the sample volume of the survey has been determined as 170 employees. In social sciences it has been stated that sample size between 30 and 500 is generally sufficient for many researches (Altunışık et al, 2012).

### **3.6. Data Analysis Methods of the Research**

#### **3.6.1. Frequency Analysis**

Table 1 contains descriptive statistics of the employees in the sample. According to this table; 91.8% of the samples are male and 8.2% are female. Based on this data, a very high male gender dominance in the sample is evident. When the age of employees is examined; it is observed that young workers are included in the age range of 21-40 in the sample with a ratio of 65.3%. This has been interpreted as

low psychological resilience being minimized in the sample. It has been determined that only 7.1% of the employees who participated in the survey are university graduates. Upon reviewing the income level of the sample, it is determined that 82.9% have income with the minimum wage level. It has also been found that 89.9% of the sample employees has more than one year of job experience.

Table 1. Descriptive statistics

	<i>Frequency</i>	<i>Percentage Ratio</i>	<i>Cumulative Percentage</i>
<b>Gender</b>			
<i>Male</i>	156	% 91.8	% 91.8
<i>Female</i>	14	% 8.2	% 100.0
<b>Age</b>			
<i>Younger than 21</i>	6	% 3.5	% 3.5
<i>21-30</i>	51	% 30.0	% 33.5
<i>31-40</i>	60	% 35.3	% 68.8
<i>41-50</i>	48	% 28.2	% 97.1
<i>51-60</i>	5	% 2.9	% 100.0
<b>Education Status</b>			
<i>Primary School</i>	86	% 50.6	% 50.6
<i>High School</i>	72	% 42.4	% 92.9
<i>College</i>	7	% 4.1	% 97.1
<i>Undergraduate</i>	4	% 2.4	% 99.4
<i>Post-graduate</i>	1	% 0.6	% 100.0
<b>Monthly Income</b>			
<i>Between TRY 1000 – 2000</i>	141	% 82.9	% 82.9
<i>Between TRY 2001 – 4000</i>	26	% 15.3	% 98.2
<i>Between TRY 4001 – 6000</i>	1	% 0.6	% 98.8
<i>Between TRY 6001 – 8000</i>	2	% 1.2	% 100.0
<b>Work Experience</b>			
<i>Less than 1 year</i>	18	% 10.6	% 10.6
<i>1-3 years</i>	40	% 23.5	% 34.1
<i>4-6 years</i>	24	% 14.1	% 48.2
<i>Between 7-9 years</i>	12	% 7.1	% 55.3
<i>10 years and more</i>	76	% 44.7	% 100.0

### 3.6.2. Validity and Reliability Analysis

Since the original structure of the scales used in the study was not distorted and the scales were not translated from a foreign language into Turkish, Confirmatory Factor Analysis (CFA) was applied to determine the construct validity. The proposed adaptation values obtained as a result of the factor analysis conducted for the 21-item-psychological resilience scale are presented in Table 2.

Table 2. Psychological resilience scale / suggested compliance values

Compliance Criteria	$\chi^2$	p	$\chi^2 / df$	RMSEA	CFI	SRMR	NFI	GFI
Suggested Compliance Values	198.395	0.01	1.626	0.056	0.941	0.05	0.863	0.903

Upon examining Table 2: it has been determined that the value of the chi-square is 198,395; p value is 0.01; RMSEA value is 0.056; GFI value is 0.903; chi-square/degree of freedom is 1.626; SRMR value is 0,05; CFI value is 0,941 and NFI value is 0.863. Figure 2 shows the standardized analysis values for the psychological resilience scale tested.

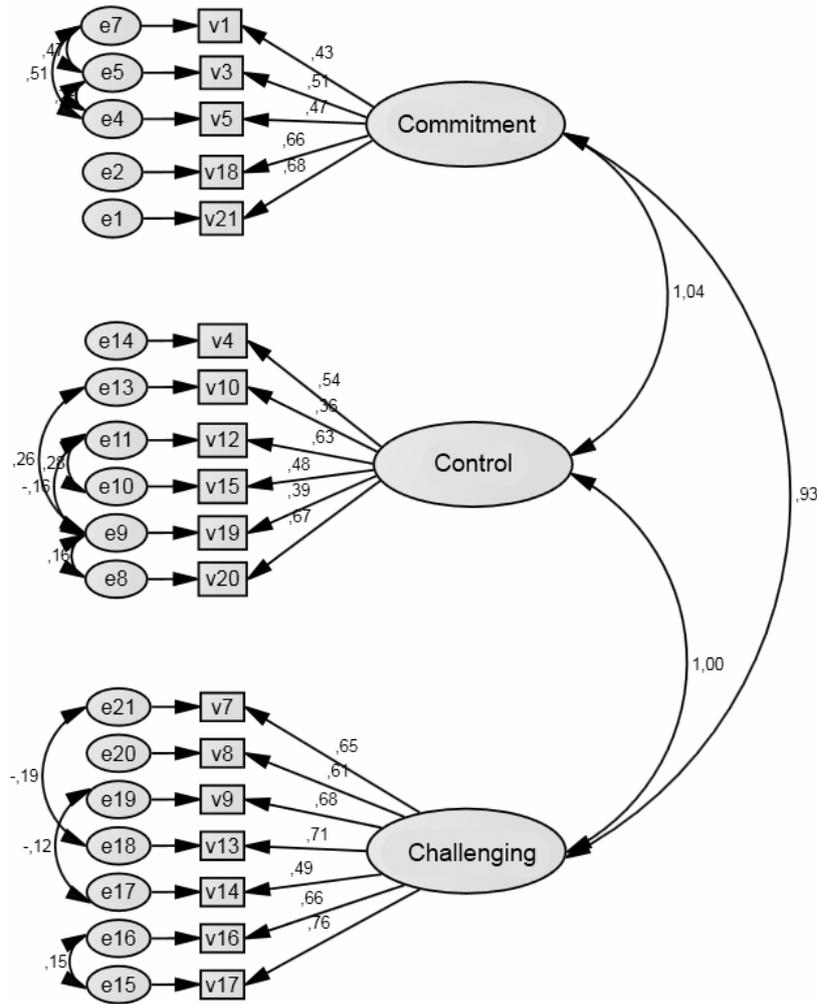


Figure 2. Psychological resilience scale / standardized analysis values

The compliance values obtained and suggested as a result of implementing Confirmatory Factor Analysis to positive and negative emotion scale consisting of 20 items have been expressed in Table 3.

Table 3. Positive and negative emotion scale / suggested compliance values

Compliance Criteria	$\chi^2$	p	$\chi^2 / df$	RMSEA	CFI	SRMR	NFI	GFI
Suggested Compliance Values	119.642	0.00	1.685	0.05	0.953	0.07	0.893	0.921

Upon examining the fit values in Table 3: it has been determined that the value of the chi-square is 119,642; p value is 0.00; RMSEA value is 0.05; GFI value is 0.921; chi-square/degree of freedom is 1.685; SRMR value is 0,07; CFI value is 0,953 and NFI value is 0,893. Figure 3 shows the standardized analysis values for the positive and negative emotion scale tested.

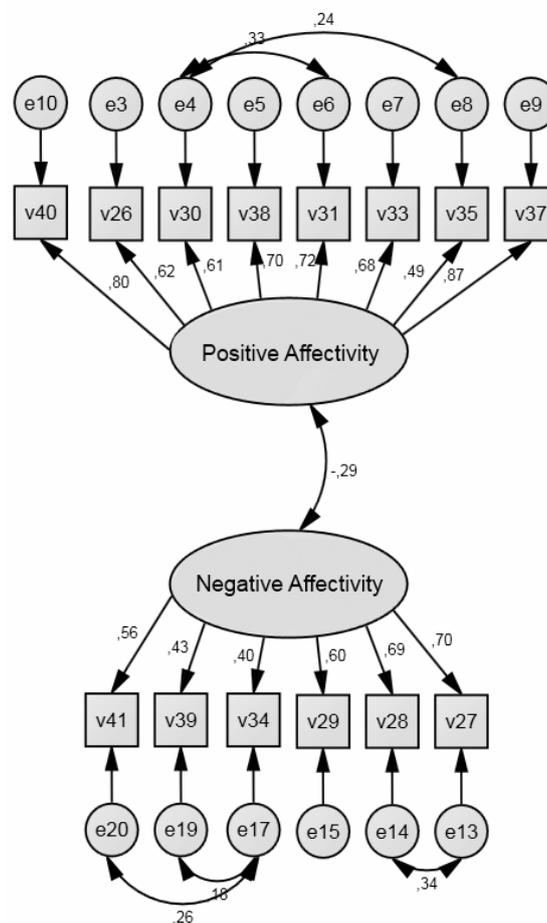


Figure 3. Positive and negative emotion scale / standardized analysis values

The compliance values suggested for the psychological resilience scale exhibited in Table 2 and for positive and negative emotion scale exhibited in Table 3 have been found to be in accordance with the goodness of fit statistics published by Meydan and Şeşen (2011) and it has been determined that the structural validity of the scales used in the research is at an acceptable level.

After Confirmatory Factor Analysis, 3 items from the psychological resistance scale and 6 items from the positive and negative emotion scale have been excluded and the reliability analysis results of the scales whose construct validity scores have been achieved are shown in Table 4. As a result of the analysis, Cronbach's Alpha coefficient has been determined to be 0.814 for psychological resilience scale and 0.717 for positive and negative emotion scale. With these values obtained, it is determined that the scales used in the research have high internal consistency.

Table 4. Reliability analysis

	Cronbach's Alpha	N of Items
<i>Psychological Resilience Scale</i>	0.814	18
<i>Positive and Negative Emotionality Scale</i>	0.717	14

### 3.6.3. Normality Analysis

Kolmogorov-Smirnov and Shapiro-Wilk values determined as a result of the normality test performed on the data obtained in the study are shown in Table 5 and the descriptive statistics are shown in Table 6. When Kolmogorov-Smirnov values in Table 5 are taken into consideration, it is observed that the data obtained from all scales do not show normal distribution.

Table 5. Normality test results

		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
<i>Positive and Negative Emotionality</i>	<i>Positive Affectivity</i>	0.108	170	0.000	0.933	170	0.000
	<i>Negative Affectivity</i>	0.131	170	0.000	0.902	170	0.000
<i>Psychological Resilience</i>	<i>Commitment</i>	0.124	170	0.000	0.958	170	0.000
	<i>Challenging</i>	0.116	170	0.000	0.925	170	0.000
	<i>Control</i>	0.090	170	0.002	0.961	170	0.000

The skewness and kurtosis values of the data obtained from the scales used in the research are detailed in Table 6. When this data is examined; it has been determined that the skewness and kurtosis values of the data obtained through the scales used in the research, which do not show normal distribution based on Kolmogorov-Smirnov value, and according to George and Mallery's (2003) classification, this data has showed normal distribution. Therefore, parametric techniques have been used in the research.

Table 6. Normality tests - descriptive statistics

	Statistic		Std. Error
<i>Positive Affectivity</i>	<i>Skewness</i>	-0.917	0.186
	<i>Kurtosis</i>	0.665	0.370
<i>Negative Affectivity</i>	<i>Skewness</i>	0.976	0.186
	<i>Kurtosis</i>	0.575	0.370
<i>Commitment</i>	<i>Skewness</i>	-0.708	0.186

	<i>Kurtosis</i>	0.379	0.370
<i>Challenging</i>	<i>Skewness</i>	-0.795	0.186
	<i>Kurtosis</i>	1.216	0.370
<i>Control</i>	<i>Skewness</i>	-0.700	0.186
	<i>Kurtosis</i>	1.799	0.370

### 3.6.4. Correlation Analysis

Table 7 provides the results of the correlation analysis between the dependent variables and independent variables of the research. According to this table; a positive relationship at a low level have been determined between the self-commitment, challenging and control dimensions of psychological resilience and positive affectivity. A negative relationship at a low level have been determined between the self-commitment, challenging and control dimensions of psychological resilience and negative affectivity.

Table 7. Correlation analysis results

		<i>Positive Affectivity</i>	<i>Negative Affectivity</i>
<i>Commitment</i>	<i>Pearson Correlation</i>	0.344	-0.314
	<i>Sig. (2-tailed)</i>	0.000	0.000
<i>Challenging</i>	<i>Pearson Correlation</i>	0.240	-0.284
	<i>Sig. (2-tailed)</i>	0.000	0.000
<i>Control</i>	<i>Pearson Correlation</i>	0.244	-0.166
	<i>Sig. (2-tailed)</i>	0.000	0.000

### 3.6.5. Regression Analysis

Table 8 shows the ANOVA results of the simple linear regression analysis oriented to positive affectivity and negative affectivity and psychological resilience. According to the result of the regression analysis performed, it has been found that the regression model indicates statistical significance, since the p value of the model is lower than 0.05.

Table 8. Positive and negative affectivity & psychological resilience - ANOVA

		<i>Sum of Squares</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>Psychological Resilience &amp; Positive Affectivity</i>	Regression	1955.271	1955.271		
	Residual	15485.606	92.176	21.212	0.000
	Total	17440.876			
<i>Psychological Resilience &amp; Negative Affectivity</i>	Regression	1728.672	1728.672		
	Residual	15712.204	93.525	18.484	0.000
	Total	17440.876			

The results of the regression analysis carried out by the Backward method are shown in Table 9. When this table is examined; it has been found that 10.7% of the change in psychological resilience is explained by the change in positive affectivity, and 9.4% of the change in psychological resilience is explained by the change in negative affectivity.

According to these results, the value that psychological resilience can take is formulated as follows;

$$“\text{Psychological Resilience} = 53.370 + (0.587 \times \text{Positive Affectivity})”$$

$$“\text{Psychological Resilience} = 77.726 - (0.839 \times \text{Negative Affectivity})”$$

Table 9. Positive and negative affectivity & psychological resilience - model

		$\beta$	$t$	Sig.	$r^2$	Adjusted $r^2$
<i>Psychological Resilience &amp; Positive Affectivity</i>	<i>Constant</i>	53.370	15.265	0.000	0.112	0.107
	<i>Positive Affectivity</i>	0.587	4.606	0.000		
<i>Psychological Resilience &amp; Negative Affectivity</i>	<i>Constant</i>	77.726	36.380	0.000	0.099	0.094
	<i>Negative Affectivity</i>	-0.839	-4.299	0.000		

According to the formulas obtained as a result of regression analysis; it has been found that a 1-unit increase in positive affectivity results in a decrease of 0.587 units on employees' psychological resilience and a 1-unit increase in negative affectivity results in decrease of 0.839 units on employees' psychological resilience.

### 3.6.6. MANOVA Analysis

Multivariate Analysis of Variance (MANOVA) has been performed to determine whether there is a significant difference between the positive affectivity and the dimensions of positive resilience, results of which are given in Table 10. Upon examining this table, it is observed that the significance values of the results of Pillai's Trace and Wilks' Lambda are lower than 0.05 and that positive affectivity has a statistically significant effect on the dimensions of psychological resilience.

Table 10. MANOVA analysis results

		Effect	Value	F	Hypothesis df	Error df	Sig.
Intercept		Pillai's Trace	0.966	1338.425	3.000	143.000	0.000
		Wilks' Lambda	0.034	1338.425	3.000	143.000	0.000
		Hotelling's Trace	28.079	1338.425	3.000	143.000	0.000
		Roy's Largest Root	28.079	1338.425	3.000	143.000	0.000
Positive Affectivity		Pillai's Trace	0.560	1.385	72.000	435.000	0.027
		Wilks' Lambda	0.532	1.401	72.000	428.215	0.024
		Hotelling's Trace	0.719	1.415	72.000	425.000	0.020
		Roy's Largest Root	0.397	2.400	24.000	145.000	0.001

The results of the MANOVA test have been examined to determine which of the dependent variables has a significant difference and the results are presented in Table 11. Upon examining these results, it has been determined that there is a significant difference in

commitment and challenging dimensions of psychological resilience according to positive affectivity, and positive affectivity has been found to have the greatest effect on the dimension of challenging.

Table 11. Tests of between-subjects effects

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	<i>Commitment</i>	741.885	24	30.912	2.152	0.003
	<i>Challenging</i>	850.963	24	35.457	1.866	0.013
	<i>Control</i>	437.901	24	18.246	1.482	0.082
Intercept	<i>Commitment</i>	23422.113	1	23422.113	1630.668	0.000
	<i>Challenging</i>	56294.541	1	56294.541	2962.774	0.000
	<i>Control</i>	37545.495	1	37545.495	3050.560	0.000
Positive Affectivity	<i>Commitment</i>	741.885	24	30.912	2.152	0.003
	<i>Challenging</i>	850.963	24	35.457	1.866	0.013
	<i>Control</i>	437.901	24	18.246	1.482	0.082
Error	<i>Commitment</i>	2082.709	145	14.364		
	<i>Challenging</i>	2755.090	145	19.001		
	<i>Control</i>	1784.622	145	12.308		
Total	<i>Commitment</i>	60343.000	170			
	<i>Challenging</i>	134711.000	170			
	<i>Control</i>	91739.000	170			
Corrected Total	<i>Commitment</i>	4836.0	181			
	<i>Challenging</i>	2134.8	181			
	<i>Control</i>	1317.9	181			

The MANOVA test results to determine whether there is a significant difference between the negative affectivity the dimensions of the psychological resilience are given in Table 12. Upon examining this table, it is observed that the significance values of the results of Pillai's Trace and Wilks' Lambda are lower than 0.05 and that negative affectivity has a statistically significant effect on the dimensions of psychological resilience.

Table 12. MANOVA analysis results

Effect	Value	F	Hypothesis df	Error df	Sig.	
Intercept	Pillai's Trace	0.960	1206.334	3.000	152.000	0.000
	Wilks' Lambda	0.040	1206.334	3.000	152.000	0.000
	Hotelling's Trace	23.809	1206.334	3.000	152.000	0.000
	Roy's Largest Root	23.809	1206.334	3.000	152.000	0.000
Negative	Pillai's Trace	0.414	1.644	45.000	462.000	0.007

Affectivity	Wilks' Lambda	0.639	1.637	45.000	452.334	0.007
	Hotelling's Trace	0.487	1.630	45.000	452.000	0.008
	Roy's Largest Root	0.232	2.385	15.000	154.000	0.004

The results of the MANOVA test have been examined to determine which of the dependent variables has a significant difference and the results are presented in Table 13. When these results were examined, a significant difference was found in three dimensions of psychological resilience according to negative affectivity. Accordingly, the level of effect on the negative affectivity has been determined as, from top to bottom, dimension of challenging, dimension of commitment and dimension of CONTROL.

Table 13. Tests of between-subjects effects

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	<i>Commitment</i>	455.882	15	30.392	1.976	0.020
	<i>Challenging</i>	646.775	15	43.118	2.244	0.007
	<i>Control</i>	324.237	15	21.616	1.754	0.046
Intercept	<i>Commitment</i>	21163.142	1	21163.142	1375.906	0.000
	<i>Challenging</i>	50725.418	1	50725.418	2639.737	0.000
	<i>Control</i>	36411.371	1	36411.371	2953.902	0.000
Negative Affectivity	<i>Commitment</i>	455.882	15	30.392	1.976	0.020
	<i>Challenging</i>	646.775	15	43.118	2.244	0.007
	<i>Control</i>	324.237	15	21.616	1.754	0.046
Error	<i>Commitment</i>	2368.712	154	15.381		
	<i>Challenging</i>	2959.278	154	19.216		
	<i>Control</i>	1898.286	154	12.327		
Total	<i>Commitment</i>	60343.000	170			
	<i>Challenging</i>	134711.000	170			
	<i>Control</i>	91739.000	170			
Corrected Total	<i>Commitment</i>	2824.594	169			
	<i>Challenging</i>	3606.053	169			
	<i>Control</i>	2222.524	169			

### 3.6.7. Independent-Sample t Test

In Table 14, the relationship between psychological resilience and the gender of those participating in the study has been investigated. When this table is examined; it has been determined that the significance value is greater than 0.05 and therefore the psychological resilience level does not show any significant difference according to gender.

Table 14. Psychological resilience & gender

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.351	0.555	-1.669	168	0.097	-4.70421	2.81941
Equal variances not assumed			-1.952	16.591	0.068	-4.70421	2.41051

### 3.6.8. One-Way ANOVA Test

In Table 15, the relationship between psychological resilience and the age of those participating in the study has been analyzed. When this table is examined; it has been determined that the significance value of the analysis is greater than 0.05 and that the psychological resilience does not show any significant difference according to the age of the employees.

Table 15. Psychological resilience - age

	N	Mean	Std. Deviation	Std. Error	F	Sig.
<i>Younger than 21</i>	6	74.3333	4.63321	1.89150		
<i>21-30</i>	51	70.3725	8.40705	1.17722		
<i>31-40</i>	60	67.3833	12.68670	1.63785	1.223	0.303
<i>41-50</i>	48	68.8750	8.55676	1.23506		
<i>51-60</i>	5	73.0000	9.48683	4.24264		

Table 16 analyzes the relationship between the level of education and the level of psychological resilience of participants in the research. When this table is examined; it has been determined that the significance value of the analysis is greater than 0.05 and that the psychological resilience does not show any significant difference according to the educational level of the employees.

Table 16. Psychological resilience – education status

	N	Mean	Std. Deviation	Std. Error	F	Sig.
<i>Primary School</i>	86	69.2558	11.30870	1.21945		
<i>High School</i>	72	68.6250	9.20416	1.08472		
<i>Associate</i>	7	70.0000	6.87992	2.60037	0.452	0.771
<i>Undergraduate</i>	4	74.7500	5.25198	2.62599		
<i>Post-graduate</i>	1	63.0000	.	.		

In Table 17, the relationship between psychological resilience and monthly income level of employees have been analyzed. When this table is examined; it has been determined that the significance value is greater than 0.05 in the analysis result. Accordingly, it has been determined that the psychological resilience does not show any significant difference according to monthly income level of the employees.

Table 17. Psychological resilience – monthly income level

	N	Mean	Std. Deviation	Std. Error	F	Sig.
<i>TRY 1000 - 2000</i>	141	68.5603	10.37949	0.87411	0.910	0.438
<i>TRY 2001 - 4000</i>	26	71.6923	9.11162	1.78693		
<i>TRY 4001 - 6000</i>	1	77.0000	.	.		
<i>TRY 6001 - 8000</i>	2	70.5000	0.70711	0.50000		

In Table 18, the relationship between psychological resilience and job experience duration of employees have been analyzed. Upon examining this table, it is observed that the significance value is lower than 0.05. Accordingly, it has been determined that the psychological resilience does not show any significant difference according to job experience duration of the employees. However, this difference has been found to be more intense within each work experience group than it is among the groups.

Table 18. Psychological resilience – job experience

	N	Mean	Std. Deviation	Std. Error	F	Sig.
<i>Less than 1 year</i>	18	71.6667	6.42605	1.51463	3.386	0.011
<i>1-3 years</i>	40	72.6000	8.48770	1.34202		
<i>4-6 years</i>	24	64.3333	14.07948	2.87396		
<i>Between 7-9 years</i>	12	71.1667	10.66714	3.07934		
<i>10 years and more</i>	76	67.8553	9.51869	1.09187		

In Table 19, the relationship between psychological resilience and areas of activity of employees have been analyzed. Upon examining this table, it is observed that the significance value is lower than 0.05. Accordingly, it has been determined that psychological resilience indicates a significant difference based on area of activity. It has been determined that the highest psychological resilience occurs in technical maintenance area and the lowest psychological resilience occurs in employees working in the field of quality.

Table 19. Psychological resilience – area of activity

	N	Mean	Std. Deviation	Std. Error	F	Sig.
<i>Mud and Glaze Preparation</i>	10	68.8000	9.16273	2.89751	2.029	0.034
<i>Mold Preparation</i>	11	68.0000	8.28251	2.49727		
<i>Classic Casting</i>	50	67.3800	8.27558	1.17034		
<i>Precasting</i>	10	68.5000	12.74755	4.03113		
<i>Glazing and Ovens</i>	40	72.9250	7.15537	1.13136		
<i>Logistics (End-product storage ? shipment - Inventory Control</i>	16	67.1250	15.64981	3.91245		

<i>Technical Maintenance (Electricity? Mechanical-Construction)</i>	10	76.9000	7.95054	2.51418
<i>Product Distribution</i>	14	63.9286	13.18778	3.52458
<i>Quality</i>	5	63.6000	11.45862	5.12445
<i>Design</i>	1	70.0000	.	.
<i>Product Commissioning</i>	3	72.0000	9.53939	5.50757

### Conclusion and Suggestions

In the research, positive and negative emotions have been determined, psychological resilience has been measured, and it has been examined whether emotions affect psychological resilience or not. In order to test the 12 hypotheses proposed within the scope of the study, data have been obtained from 170 private sector employees and they have been analyzed statistically. The test matrix for hypotheses is expressed in Table 20. When the test matrix formed as a result of testing the hypotheses is examined, it has been determined that 8 hypotheses are accepted and 4 hypotheses are rejected. When the findings are evaluated; it has been determined that the psychological resilience of the employees is significantly affected by the current positive and/or negative emotions of employees. In particular, the effect of this occasion has been found to be higher for employees with negative emotions such as distress, irritation, disturbance and restlessness. Employees' positive emotions such as excitement, enthusiasm and being proud have been found to positively affect the challenging dimension of psychological endurance dimensions the most. However, it has been determined that the negative emotions also have the greatest impact on the challenging dimension of psychological resilience. Thus, it has been determined that the challenging dimension is the most sensitive dimension in terms of affectivity for employees. However, as a result of the research, it has been found that the psychological resilience is higher in the technical maintenance workers than of other workers and the psychological endurance is lower in terms of quality.

Table 20. The test matrix for research hypotheses

	<i>Result</i>	<i>Sig.</i>	<i>Sig.</i>	<i>Result</i>	
<i>H<sub>1a</sub></i>	<i>Accepted</i>	<i>0.000</i>	<i>0.097</i>	<i>Rejected</i>	<i>H<sub>1g</sub></i>
<i>H<sub>1b</sub></i>	<i>Accepted</i>	<i>0.000</i>	<i>0.303</i>	<i>Rejected</i>	<i>H<sub>1h</sub></i>
<i>H<sub>1c</sub></i>	<i>Accepted</i>	<i>0.000</i>	<i>0.771</i>	<i>Rejected</i>	<i>H<sub>1k</sub></i>
<i>H<sub>1d</sub></i>	<i>Accepted</i>	<i>0.000</i>	<i>0.438</i>	<i>Rejected</i>	<i>H<sub>1m</sub></i>
<i>H<sub>1e</sub></i>	<i>Accepted</i>	<i>0.000</i>	<i>0.011</i>	<i>Accepted</i>	<i>H<sub>1n</sub></i>
<i>H<sub>1f</sub></i>	<i>Accepted</i>	<i>0.000</i>	<i>0.034</i>	<i>Accepted</i>	<i>H<sub>1r</sub></i>

Upon evaluating in general, it has been concluded that psychological resilience, which is a significant effect of the qualified and strong labor force needed to achieve the goals and objectives of the organizations, can easily be influenced by external factors. One of these factors is emotions. In individuals who can vary in different situations at any moment in their lives and experience both positive and negative emotions at the same time,

this situation becomes an important factor that can affect working power as reflected in the business environment. This factor can easily reduce the more needed psychological resilience in an increasingly tense working environment in today's competitive organizational structure. There are several studies on the results of the psychological resilience in the literature. Mortazavi et al. (2012) have stated that psychological resilience affects individuals' work quality of life positively. Ong et al. (2006) have found that differences in psychological resilience caused a change in emotional responses to stress. Lee et al. (2012) have stated that depression is less observed in individuals with high resilience and that life satisfaction is also high in these individuals. Shatte et al. (2017) have reported that high resilience in low-tension environments has a protective effect on stress, burnout and sleep. Kanbur et al. (2017) have found that psychological resilience increases organizational citizenship behavior and job satisfaction. Bitmiş et al. (2013) have determined that psychological resilience affects organizational identification positively and worker exhaustion negatively.

As observed in these studies, psychological resilience is very important in terms of the effectiveness and performance of the employees of the organization. Therefore, it is necessary to examine the positive and negative affectivity levels of the employees in detail and regularly, and to identify and eliminate the organizational factors that cause or may cause negative affectivity first. Employees who have strategic priorities for the organization must receive professional support. In case of a negative affectivity which cannot be resolved for a long time, it is necessary to make a managerial decision similar to rotation in order not to reflect the employee's mood to other employees. However, it is suggested that organizational support is provided in the context of organizational behavior, adoption of positive leadership, application of internal and external motivational factors, provision of person-business alignment and importance of autonomy. In addition, organizational managers should not allow any factors that adversely affect the emotional level of employees, such as psychological harassment, interpersonal conflict, and excessive workload.

#### *Limitations of the Study and Future Research Directions:*

The research was conducted based on the following assumptions and constraints;

- It has been assumed that the employees who participated in the study answered the questions to reflect the truth.
- It has also been assumed that the employees participating in the research are objective when evaluating themselves.
- Due to limited time and limited access to the data, the study has only been applicable to a single enterprise.
- Also, the research has only been applicable to employees with workers status due to limited access

- Obtaining data from female employees has been difficult due to the harsh working conditions in the enterprise where the survey has been conducted; therefore the sampling participation has been intensively composed of male employees.

In the future research on psychological resilience and positive and negative affect, it is recommended to design a research that will allow the comparison of public and private sectors, and to pay attention to the fact that if psychological resilience is really important for the enterprise to be researched. It is also recommended to compare the research with different professional groups and to measure the relationship between the variables such as work stress, over workload and job satisfaction.

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