

INVESTIGATION OF PERSONAL QUALITIES
CONTRIBUTING TO PSYHOLOGICAL RESILIENCE AMONG EARTHQUAKE
SURVIVORS: A MODEL TESTING STUDY

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ABSTRACT

INVESTIGATION OF PERSONAL QUALITIES CONTRIBUTING TO PSYCHOLOGICAL RESILIENCE AMONG EARTHQUAKE SURVIVORS: A MODEL TESTING STUDY

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This study is designed to investigate the relationships among affective and cognitive personal qualities leading to psychological resilience among natural disaster survivors. The main assumption of this study is that positive personal qualities might be associated with better psychological adjustment. The study aimed at testing a hypothesized theoretical model accounting for resilience with regard to personal qualities. The sample for this study was composed of individuals who were exposed to earthquakes that occurred in 1999 in Marmara region of Western Turkey.

The study hypothesized that the dispositional cognitive and affective constructs (*hope, optimism, life satisfaction, self esteem and positive affect*) play vital roles in pathways to *psychological resilience*. Initially hypothesized model based on cognitive-behavioral theoretical foundations was proposed and tested. The cognitive behavior approach holds the idea that thoughts are the determinants of functional and dysfunctional emotions and behaviors.

In the model, global self esteem serve as an underlying mechanism that helps to human operate well on the environment. The positive influence of global self esteem can be observed in cognitive process and affective domain in individuals. Simultaneously a person develops an optimistic worldview based on the global self esteem. Self esteem leads a person to construe positive cognitive constructs influencing the general world of view positively and utilize those cognitive. Since thinking patterns influence the affective side of the person, if the person utilizes positive cognitive constructs while interpreting life events, he or she is likely to experience more positive feelings and to be satisfied with life at the same time

The hypothesized model was trimmed. *Dispositional hope (pathways and agentic thinking)*, *optimism*, *positive affect*, *life satisfaction* and *self-esteem* were regarded as independent latent variables while three factors of *psychological resilience* were valued as the latent dependent variables. Finally, a structural model was suggested to account for the pathways leading to resilience among the Turkish disaster survivors. According to the model, self esteem, dispositional hope and optimism have indirect effect on resilience components via positive affect and life satisfaction.

For purposes, the Ego Resilience Scale was adapted into Turkish. Exploratory factor analysis yielded three-factor solution for Turkish disaster survivors and the resilience factors were labeled as *Personal Strengths Relating Recovery*; *Positive Self-Appraisals* and *Openness to New Experience*. The results revealed that the Ego Resiliency Scale is a validated and reliable measure of psychological resilience among Turkish disaster survivors.

Keywords: Resilience, ego-resilience, optimism, hope, self-esteem, positive affect, life satiasfaction, earthquake survivors, positive psychology.

ÖZ

DEPREM YAŞAMIŞ BİREYLERDE PSİKOLOJİK SAĞLAMLIĞA ETKİ EDEN KİŞİSEL FAKTÖRLERİN İNCELENMESİ: BİR MODEL TEST ETME ÇALIŞMASI

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Bu çalışmada, depremedelerde psikolojik sağlamlığı açıklayan olumlu duygusal ve bilişsel faktörler arasındaki ilişkiler incelenerek psikolojik sağlamlığı açıklayan bir yapısal eşitlik modeli sınanmıştır. olumlu bilişsel ve duygusal kişisel faktörlerin (*benlik-saygısı, mizaca bağlı umut, iyimserlik, yaşam doyumu, olumlu duygular*) psikolojik sağlamlıkla ilişkili olabileceğine çalışmanın temel varsayımıdır. Örneklemi 1999 Depremlerine maruz kalmış bireyler oluşturmuştur.

Bilişsel süreçlerin sonucunda duygu ve davranışların açığa çıktığını savunan bilişsel-davranışçı yaklaşımlar bilişler ve duygular arasında iki yönlü bağa vurgu yapar (Beck, 1976). Duygular inanışların, bilişsel değerlendirmelerin ve anlamlandırmaların ürünleri olarak tanımlanır. Modelde, duygusal ve bilişsel boyutların etkileşimine özellikle vurgu yapan ABC (Ellis, 1994) modeline benzer olarak, bilişsel ve duygusal kişisel faktörler arasındaki etkileşimin psikolojik

sağlamlığı açıklayabileceği düşünülmüştür. Benlik saygısı başlangıç değişkeni olarak model konmuştur çünkü; insanlar sürekli olarak benlik saygılarını artırmaya çabalarlar. Yüksek benlik saygısı genel olarak akıl sağlığının ve iyi oluş halinin göstergesi sayılmaktadır (Tajfel & Turner, 1986). Olumlu benlik saygısı bireyin bilişsel olarak daha iyimser ve umutlu olmasına ve önemli yaşam olaylarını anlamlandırırken olumlu bilişsel yapıları kullanmasına yol açar. Bu durumda bilişsel-davranışçı yaklaşıma göre, olumlu bilişsel yapıların olumlu duyguları ortaya çıkarması beklenmektedir. Bu etkileşim sonuç olarak, bireylerdeki psikolojik sağlık kavramını açıklayabilir. Özünde bilişsel davranışçı yaklaşımı benimsemiş olan model insanın güçlü yönlerinin ortaya çıkarılmasını savunan pozitif psikoloji çerçevesinde insanın potansiyeline gönderme yapmaktadır.

Benlik saygısı, mizaca bağlı umut, iyimserlik, olumlu duygular, ve yaşam doyumu bağımsız örtük değişkenler olarak değerlendirilmiştir. Psikolojik sağlamlığı oluşturan üç faktör bağımlı örtük değişkenler olarak değerlendirilmiştir. Sonuç olarak, depremzedeler arasında psikolojik sağlamlığı açıklayan mizaca bağlı bilişsel ve duygusal yolları açıklayan bir yapısal eşitlik modeli önerilmiştir. Modeldeki olumlu kişisel faktörlerin hepsi dolaylı ya da direk olarak psikolojik sağlamlıkla ilişkili bulunmuştur. Benlik saygısı, umut ve iyimserliğin psikolojik sağlamlık üzerinde olumlu duyguların ve yaşam doyumunun üzerinden dolaylı etkisi vardır. Benlik-saygısının ve psikolojik sağlamlığın iyi oluş ve akıl sağlığı için iki önemli kavram olduğu desteklenmektedir.

Ayrıca, Ego-Sağlamlık ölçeğinin uyarlama çalışması yapılmış; üçlü faktör (Toparlanmaya yönelik Kişisel Güçlü Yönler, Kendine yönelik Olumlu Değerlendirmeler ve Yeniliklere Açık Olma) yapısı önerilmiştir.

Anahtar Kelimeler: Psikolojik Sağlamlık, Ego-Sağlamlığı, iyimserlik, umut, benlik saygısı, olumlu duygular, yaşam doyumu, depremzedeler, pozitif psikoloji.

*In memory of
the most resilient personality I have ever known in my life*

&

*the most significant role model in my resilient personality
Gül Hocam*

Gül Hocam !

Keşke yarın bölüme gittiğimde orada olacağınızı bilsem... Keşke geçerken kapınızı aralık görsem.. Keşke bir bahane yaratıp koridora gün ışığı sızılan kapıdan içeri süzülüp sizi görsem... Keşke yine bana bakıp “sıskacık kaldın” deseniz...Keşke bana bir el versene diye beni arasanız...Keşke akşam çıkarırken “yine dansa mı” diye sorsanız bana...Keşke akşamın körüne kadar ofiste çalışsak; sonra Orhan Bey arasa hadi diye. Siz de neredeyse bitti son paragraf deseniz...Keşke çalışırken size kahve getirsem... “Hay yaşa Özlem” deseniz....Hocam keşke ölmeseniz....

Kim bakacak ne giymişim diye? Kim söyleyecek “pek güzel olmuşsun” diye...Kim soracak bana “yemek yedin mi” diye...Kime hocam dediğimde bu kelimenin altı bu kadar dolacak? Kim benim ışığım yol göstericim olacak? Bir Gül Hoca'ya sorayım derdim hep. Ne olacak şimdi? Siz olmadan nasıl olacak? Henüz bilmiyorum. Ama öğreneceğim ve siz her zaman yüreğimde olacaksınız.

Benim sizden, sizin derslernizden hayata dair öğrendiğim çok şey var. Ama sanırım en önemlisi hayata karşı hep dik durmalı ve akıntıya kapılıp gitmemeli. Direnmeli. Baş kaldırmalı ve kafa tutmalı hayatın olumsuzluklarına. İnanmalı içimizdeki güce... Siz hayata hatta ölüme bile kafa tutan, yigıtçe savaşıyan en büyük en güçlü örneksiniz benim için... Sizden öğrendiklerimle hep içimde yaşayacaksınız. İçimde yaktığımız ışık hiç sönmeyecek ve sizin öğrettikleriniz yolumu aydınlatmaya devam edecek ve siz hep yanımda olacaksınız. Bana gösterdiğiniz sevgi ve şefkati o kadar özleyeceğim ki... Özlüyorum.

Özlem, 12 Nisan 2007

**This letter was written a few days before we lost her.*

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CHAPTER I

INTRODUCTION

A sailor without a destination cannot hope for a favorable wind.
— Leon Tec

In this chapter, the conceptualization of resilience, based on existing theoretical knowledge and historical antecedents, was introduced in detail. Positive psychology, which is a derived form of humanistic psychology, was outlined. From this theoretical perspective, a review of literature about resilience including the definitions, recent approaches, correlates of resilience and controversial issues were presented.

1.1 A Paradigm Shift from Modernism to Postmodernism

Psychology as a social science is influenced by philosophical assumptions. In the historical context, early twentieth century philosophy of science – modernist thought; empiricism and rationalism- greatly impinged on the theories of counseling and the research methods used in counseling psychology. In modernism, the nature of knowledge is based on objectivism, whereby knowledge is validated through its correspondence to warranted standards of truth and rationality (Lyddon, 1995), that is, knowledge is the objective representation of the real world. In modernist epistemological framework, the nature of truth - singular and universal - is obtained by prescriptive, quantitative and experimental scientific methods. Traditional psychological science has focused on traditional and objectivist conception of knowledge in the last century. In the late 20th century, however; the main contours of the traditional modernist view have started to take place alongside postmodernist thought, where the search for truth centers on the multiple interpretations of reality. Therefore subjectivity has been on the agenda since postmodernism has become influential (e.g., Gergen, 1994; Guterman 1996; Guterman 1994)

Postmodernism is a philosophical term determining a certain time period, and its characteristics can be observed in art and social sciences such as philosophy, sociology, education and psychology in the 20th century. Historically, the postmodern period can be traced from the First World War in Europe, and into the period following the Second World War in America. By postmodernist thought, a paradigm shift from the principles of logical empiricism, whereby the ideas of logic are the primary source of objective knowledge, to a new subjective knowledge, whereby the individual's subjective experience becomes significant, was observed (Lowenthal 1996; Lyddon, 1995; Polkinghorne, 1992).

Lowenthal (1996) proposed that, historically the church and Christianity set the standards, then objectivist science took its turn and now through postmodernism, one can examine to what extent the development of psychology has been an era of individualism where the standards are centered on the person. According to Lowenthal (1996), there has been a movement from God, to science and finally to the person.

While the needs of people and communities are continually changing, the focal issues and concerns central to social sciences, research interests and existing methodologies are bound to experience transformations and integrations. Due to the fact that postmodern thought challenges modernist views, such as the representational and cumulative nature of knowledge, objectivist empirical research methodologies, the justification of truth, the passive role of human being, and the value free nature of scientific inquiry, the closing years of the previous century have witnessed some conceptual changes and developments in the field of psychology and counseling. Instead of quantitative measures, conscious behavior, objective reality and individualistic therapies, qualitative measures, tacit experiences, subjectivism and therapies concerned with social cultural context are acknowledged when entering 21st (D'Andrea, 2000; Mahoney 1995a; Mahoney, 1995b).

Since postmodernist thought is viewed as a reaction to modernism, it can be seen as an antithesis of modernism where one can find correspondingly opposite conceptions and

conflicting ways of thinking with traditional theories. Instead of what is not functioning in human beings (e.g. irrational beliefs, automatic thoughts, cognitive distortion) many evolving contemporary approaches in psychology tend to focus on what is good about the person. In conclusion, as an outgrowth of the philosophical, cultural and scientific developments, new postmodernist formulations like network therapy, feminist therapy or positive psychology have emerged in the field of psychology within the post modern era.

1.2 Reflection of Postmodernism: Positive Psychology

Positive psychology aims at the exploration of optimal human functioning and attempts to stay in the focus of human strength and virtue. It avoids emphasizing the “dark side” of human functioning and promotes general well-being. If one thinks that the normal population is so much larger than the “abnormal” population and that this forgotten issue in psychology is improving the lives of normal people, working on the less investigated area of human strength requires deep effort, energy, creativity and financial resources. Briefly, positive psychology asserts that normal people need to become immediately aware of their potentiality (Seligman, 2000).

Prior to the positive psychology movement, there was an obvious imbalanced ratio between the research studies centered on the medical model with the definition of various diseases and treatment approaches, and other types of research studies addressing healthy-minded themes (Pawelski, 2003) leading to general well-being. That is to say, what dominated psychology was the negative (Rozin & Royzman, 2001). Modernist psychology with the focus on mental diseases and treatment approaches has generated strict criteria for classifications and exact methodological ways to reach “*objective truth.*” In the historical context, theoretical roots of positive psychology can be traced back to William James’s concept of “healthy mindedness” in 1902 (as cited in Gable & Haidt, 2005; Linley, Stephen, Harrington, Wood, 2006; Pawelski, 2003). James’ writings which focused on healthy mindedness may be the first attempt for establishing positive psychology. William James, whose writings were about hundred years ago, was called as the first positive psychologist (Dunn & Dougherty, 2005; Taylor, 2001).

The pioneers of humanistic psychology such as Abraham Maslow, Carl Rogers, Rollo May or the other humanistic psychologists and theoreticians touched on the positive aspect of human kind as early as fifty years ago. Their formulations about human beings created a strong theoretical background for positive psychology. Indeed, the term positive psychology was emphasized in Maslow's revolutionary book *Motivation and Personality* (Maslow, 1954). The title of last chapter in this inventive book was *Toward a Positive Psychology* (Resnick, Warmoth, & Serlin, 2001). Maslow also introduced the concept of self-actualization and growth-oriented motivation theory (1954).

In the early 1940s, humanistic psychology attempted to bring the idea of healthy functioning into psychotherapy. Taylor (2001) claimed that Rogers was the pioneer in depathologizing counseling and psychotherapy. (Bozarth, Zimring, & Tausch, 2002). Rogerian non-directive therapy (1942) took the lead in proposing that the client rather than the therapist was the director of therapeutic change. This is one of the main working principles of postmodernist constructivist psychotherapies. In constructivism, humans are seen neither as computers nor reactive organisms, rather perceived as artists concurrently playing the role of actors and directors of their own lives (Gonçalves, 1999).

Humanistic psychologists fundamentally changed our view of the person. Instead of emphasizing the basic pathology and a mechanistic view, Maslow and other humanistic psychologists showed us how people can actualize their potential and the enormous capacity of individuals for love, acceptance of others, creativity, humor and transcendence (Cain, 2002). The primary focus was on understanding how people could be helped to move toward becoming optimally functioning beings (Rathunde, 2001). The positive view of people and resources in people was advanced by humanistic psychologists (Cain, 2002; Rathunde, 2001; Resnick et al., 2001; Taylor, 2001).

Humanistic psychology aims at understanding human nature by taking all levels; it has a holistic perspective, the positive takes its meaning from its dialectic relationship with negative (Resnick et al., 2001). When optimal functioning occurs, people experience the feeling of wholeness. That is to say, people are not only dysfunctional; they also have a

tendency for growth and moving toward self-actualization. Briefly, people have a tendency to balance their negative and positive sides.

Although humanistic psychology was the first in recognizing the positive side of human nature it could not create a shift in the direction of psychology. It was much later, in the light of postmodernism and contemporary approaches such as constructivism in psychology, that the paradigm shift from problem-oriented approaches to those focusing on wellness and the strength of the individual occurred and a movement toward positive psychology to promote healthy development and human strengths was observed.

Positive psychology ultimately addresses the whole spectrum of human experience. There are not only bad things about a person; there are also other things that make that person strong and so positive psychology addresses human strengths not only the weaknesses. It is also acknowledged that negative experiences such as human suffering or dysfunctional family systems are the realities of human life. Meanwhile, positive subjective experiences, positive traits and civic virtues leading to a better citizenship are also valued in positive psychology. Systematically, three different levels of analysis are identified in positive psychology to examine human strengths for making life worth living: *subjective, individual and group* (Seligman & Csikszentmihalyi, 2000). First, experiences contributing to the general well-being of human beings are examined from the perspectives of past, present and future at the *subjective level* as for: well-being, (Diener, 1984) contentment and satisfaction (Ryff & Keyes, 1995) in the past; flow and happiness (Csikszentmihalyi, 1990; Fredrickson, 1998) in the present; hope and optimism (Scheier & Carver, 1992; Snyder, 1994) for the future. Second, wisdom, courage, originality, future mindedness, aesthetic sensibility, perseverance, forgiveness, creativity, spirituality, interpersonal skills, and the capacity to love are some examples of positive traits at the *individual level* (Seligman & Csikszentmihalyi, 2000). Finally at the *group level*, institutions also thrive on better outcomes. Responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic are listed as civic virtues leading to a better citizenship (Seligman & Csikszentmihalyi, 2000).

In a recent creative and comprehensive study (Linley et al., 2006) the authors gave a brief history of positive psychology, a definition of positive psychology and subsequently suggested a view toward a new definition of positive psychology. Finally they discussed what could happen in the future of positive psychology. They think that it is quite helpful to use a common language and introduce the positive but integrate it with the negative is also important. While trying to reach some standards and theoretical foundations, it is good to understand positive psychology at two levels: (a) *the meta-psychological level* addressing the aims of the positive psychology and broadening the vision of general psychology, (b) *the pragmatic level* accounting for the research methodologies and practical applications used by positive psychologists.

Positive psychology is now considered as a constructivist movement which goes beyond the limitations of modernist psychology (Sandage & Hill, 2001). Through the help of positive psychology, rapid scientific advancements about healthy-minded subjects (James, 1890) which had been ignored in earlier times showed increased progress. Seligman (1998a) also suggested that the mission of psychology is not only to treat mental illness; there are two other missions of psychology which have been largely neglected over years. The study of psychology also aims at facilitating “good life” and fostering human strengths. However, studying what is not working has left almost no room for investigating what is working (Faller, 2001).

1.3 Good Psychological Functioning: Resilience as the Adapting Ability

With the paradigm shift from modernism to postmodernism, focusing on personal strengths rather than weaknesses has become a recent trend in social sciences. Resilience, well-being, hardiness, post-traumatic growth and learned optimism are some of the popular and promoted research of interests in social sciences that shift the emphasis from pathology to mental health.

A well-organized and research-based empirical body of knowledge about resilience may be the best response to a view that criticizes positive psychology about focusing on positive at the expense of negative. Building up an extensively acknowledged resilience

theory which combines the positive adaptation of a human being in the face of negative life events might bring two sides of the coin together. Resilience research does not concentrate on the dark side of human being but rather focuses on understanding human conditions (Ryff & Singer, 2003) that can shed a light in darkness.

The investigation of factors contributing to positive adaptation in the presence of adversity has been an appealing subject for research and theory. Resilience is most often viewed as an indicator of good adjustment following adversity such as traumatic events. Recently, the resilience concept has gained increasing attention from mental health professionals, as it is vital for individuals to display good adaptation and effective coping in order to survive in our challenging post-modern world.

Adverse life events such as huge natural disasters causing massive death toll, wars even leading to the death of babies and children, terrorist attacks forcing people to have hostile feelings against other group of different race or religion, competitive business life, or financial disadvantages have become more and more familiar. The escalating adversity in daily life is globally evident and supports the notion of becoming resilient individuals. Challenging life events disrupt our homeostasis, thus we need resilience to grow and adapt (Flach, 1988). Flach (1988) described resilience as “the psychological and biological strengths required to successfully master change” (p. ix).

Resilience is a multidimensional construct regulating optimal human functioning and is a fundamental concept in positive psychology (Seligman & Csikszentmihalyi, 2000) which addresses mental wellness rather than mental illness. Studies on resilience primarily focused on the adaptability of the individual in face of adversity such as parental major affective disorders (Beardslee & Podorefsky, 1988), parental mental illness (Garmezy, 1974; Masten, Best, & Garmezy, 1990; Masten & Coastworth, 1995; Rutter, 1985, 1987); poverty (Garmezy, 1991; Werner & Smith, 1982), low socioeconomic status (Garmezy, 1991, Garmezy, Masten, & Tellegen, 1984); suffering from AIDS (Rabkin, Reminen, Katoff & Williams, 1993), suffering from cancer (Antoni & Goodkin, 1988); being exposed to terrorist attacks (Frederickson, Tugade, Waugh & Larkin, 2003); coping with

loss and chronic grief (Bonanno et al., 2002); ethnic discrimination (Lee, 2005); maltreatment (Mrazek & Mrazek 1987); post traumatic stress disorder (King, King, Fairbank, Keane & Adams, 1998); childhood abuse (Chambers & Belicki, 1998); political violence (Punamaki, Qouta & El-Sarraj, 2001); being Holocaust victims (Baron, Eisman, Scuello, Veyzer, & Lieberman, 1996); chronic illness (Patterson & Garwick, 1994); and abortion (Major, Richards, Cooper, Cozarelli, & Zubek, 1998)

1.3.1 Definition of Resilience

The dictionary definition of resilience suggests that resilience is “the power or ability to return to the original form or position after being bent or compressed and the ability to recover readily from illness, depression or adversity” (Webster’s Unabridged Dictionary, 2001). Fraser, Richman and Galinsky (1999) reviewed the literature and pointed out the common themes in the definitions of resilience. According to their review, resilience is a complex interplay between certain characteristics of individuals and their broader environments that consists of a balance between stress and coping. Although many studies on resilience exists in literature and there is an obvious agreement on the characteristics of resilient individuals or correlates of resiliency among the studies that used various measurement and research designs, there is an obvious disagreement regarding its operationalization and resilience mechanisms in the individual (Grizenko & Fisher, 1992; Kaufman, Cook, Arny, Jones & Pittinsky, 1994; Luthar, 1993; Luthar, Cicchetti, & Becker, 2000; Luthar & Zigler, 1991; Masten et al., 1990; Rutter, 1993; Smith & Prior, 1995; Spaccarelli & Kim, 1995). How a resiliency mechanism becomes active and how it operates in the individual is still being under discussion.

There are numerous operational definitions of resilience in the literature. Because of the nature of the concept, researchers hardly agree on a widely accepted operational definition. Researchers proposed their operational definitions of resilience and adversity according to the need of their research designs. In addition, although there are some different scales to quantify resilience (e.g. Wagnild & Young, 1993) the results are hard to generalize. Because of its multidimensional nature of resilience (Block & Kremen, 1996) and absence of a theoretical formulation, variations in operational definition of

resilience have resulted in diversity in both empirical research designs and findings related to resilience. Stating differently, inconsistencies within the theoretical construct of resilience and mechanisms leading to resilience have made the phenomena difficult to measure and operationally define (Polk, 1997).

A close inspection of the literature on resilience suggests that operational definitions of resilience are confusing and show a wide range of variation. Conversely, the lack of an operational definition creating a common understanding may seem a disadvantage for a research subject at first; in actual fact, the multidimensional nature of resilience enriched the research findings relating to resiliency in different adverse conditions and contributed a great deal to the creativity of the researchers. The disadvantage originating in the nature of resilience itself turned out to be an advantage. However, some authors (Cicchetti & Garmezy, 1993; Kaufman et al., 1994; Luthar & Cushing, 1999) asserted that definitional diversity may well provide incongruent conclusions regarding the estimates of resilience, which makes generalizing research findings more difficult.

The variety of resilience definition in the literature is great. The descriptions mentioned below are only some of the definitions one may encounter.

- the capacity of the individual to effectively modulate and monitor an ever-changing complex of desires and reality constraints (Block & Kremen, 1996, p. 359).
- the idea of “resilience” implies a generalized, characterological quality of an individual and does not simply apply to a highly specific, one-time behavior” (Block & Kremen, p. 351)
- an ability to survive despite the extreme burden of stressful life events such as trauma, death or loss (Agaibi & Wilson, 2005).
- being able to maintain in a stable psychological equilibrium (Bonanno, 2005).
- provides a way of measuring the ability of emotional resistance and coping with stress (Connor, 2006).
- regulates the negative effects of stressful situations and promotes successful adaptation (Wagnild & Young, 1993).

- a collection of personal qualities that makes individuals qualified to grow and thrive in the face of adversity (Connor & Davidson, 2003).
- a complex way of being competent and having self-efficacy in the face of extreme life events (Agaibi & Wilson, 2005).
- a personal quality that helps a person recover from adversity (Dyer & McGuinness, 1996).

Although resilience is a difficult construct to define it is still possible to find a core element within all these definitions, which is to be able to “bounce back” from adversity.

Resilience was first conceptualized in psychology in terms of ego resiliency by Block and Block (1980). They conceptualized *ego-resiliency* as:

“the dynamic capacity of an individual to modify his or her modal level of ego control, in either direction, as a function of the demand characteristics of environment” (p. 48)

Klohn (1996) investigated the construct of ego-resiliency and its effect on adjustment. She underlined the resourceful adaptation to changing contingencies, effective problem-solving skills, flexibility, active engagement with the environment and cognitive appraisals in the original formulation.

Klohn (1996) made an important comment on resilience. She mentioned that resilience has been studied in the face of extreme adversity but probably also plays an important role in dealing with daily stresses and challenges. She identified four aspects of personality which lie behind ego-resiliency: (1) confident optimism – “an optimistic, positive and energetic outlook and approach to life (p.1071); (2) productive and autonomous activity – “involves productivity, persistence in the face of adversity, initiative, and independence (p.1071); (3) interpersonal warmth and insight – “the capacity for close relationships and for being insightful and socially perceptive” (p.1071); and (4) skilled expressiveness – “an expressive interpersonal orientation, being at ease in social settings, and being skilled in interacting with others” (p.1071).

In the same study, Klohnen examined the effect of ego-resiliency on adjustment levels of women in different life domains (physical and psychological health, work, relationship and family). The results indicated that ego-resiliency is a predictor of effective functioning and adjustment in all life domains. This study provides evidence that ego-resiliency, as a construct of personality, meets the basic foundation of resilience, which is called positive adaptability.

Resilience is not definitely a single quality and there is not only one single universal factor explaining resilience (Glantz & Sloboda, 1999; Smith & Prior, 1995). Klohnen (1996) concludes that “*ego resilience is best conceived of as a superordinate yet unitary personality resource that combines a number of important and more specific facets of personality*” (p.1073). Hence, it makes sense that some individuals with certain predispositions may be called resilient; however, this point of view does not deny the importance of person-environment interaction. It is more useful to define personality-based resilience as psychological resilience. The ecosystemic context of resilience can not be ignored (Waller, 2001). The environmental and familial factors specifically in childhood and adolescence are likely to be vital for resilience.

Resilience has been conceptualized as a continuum (Block & Block, 1980) and also described as collective of resources, ego-strength and social intimacy (Kadner, 1989). Productivity, effective intellectual functioning, interpersonal skills, and general psychological well-being are the typical characteristics of people who scored highly on ego-resilience (Klohnen, Vanderwater & Young, 1996).

1.3.2 Theoretical Background of Resilience

The study of resilience is an interdisciplinary subject within psychology, shared with personality psychology, developmental psychology, health psychology, and gerontology. Despite the growing popularity of the construct of resilience, there is no universally accepted resilience theory. The lack of a unified theory of resilience capable of guiding more structured and empirically based approaches to developing the construct appears to be a major problem in the study of resilience (Luthar et al., 2000).

Polk suggested a new theoretical model for resilience in 1997; a concept synthesis was utilized to clarify the concept. She reviewed 26 articles focusing on resilience for defining attributes or themes and added that this review reflected all the information that can be gathered from the existing literature. Initially the concept synthesis revealed 26 clusters of resilience; subsequently similar clusters were checked and these clusters were reduced to 6: psychosocial attributes, physical attributes, roles, relationships, problem-solving characteristics, and philosophical beliefs. Finally, psychosocial and physical attributes were combined into one cluster; roles and relationships formed another cluster. The researcher concluded that resilience could be at work under four patterns: *dispositional pattern, relational pattern, situational pattern, and philosophical pattern.*

The dispositional pattern reflects the ego-related psychosocial attributes such as self-esteem, self-confidence, global self-worth, autonomy, self-efficacy, and self-reliance and intelligence. The relational pattern is divided into two: intrinsic and extrinsic aspects. Multiple interests and hobbies, commitment to education, jobs and social activities, seeking social support and healthy relationships are included in extrinsic relational pattern. Intrinsic relationship refers to commitment to relationships and personal intimacy. The third pattern called situational, covers cognitive appraisal skills, problem solving strategies, novelty seeking, curiosity and creativity. It is related to being aware of what can and cannot be achieved and internal locus of control. The final pattern is the philosophical pattern, which appears to be related to existential themes such as meaningful and purposeful lives. Even though the proposed model makes sense, it was not supported by empirical findings. The model did not operationalize the theoretical constructs (Polk, 1997).

In an early study (Wagnild & Young, 1990) five components of resilience were identified based on qualitative data collected from an elderly population: equanimity, perseverance, self-reliance, meaningfulness, and existential loneliness. Moreover, four additional mechanisms which enabled people to be resilient following loss were worldview, self-enhancement, concrete aspects of self and emotion regulation (Bonanno, Papa & O'Neill, 2002).

A cognitive appraisal theory of resiliency was suggested by Mrazek and Mrazek (1987). Twelve skills and abilities that resilient people use during stressful times are: rapid responsivity to danger, precocious maturity, disassociation of affect, formation and utilization of relationships for survival, positive projective anticipation, decisive risk-taking, the conviction of being loved, idealization of aggressor's competence, cognitive restructuring of painful events, altruism, optimism and hope.

Several resilience models in the existing literature address the interaction between life challenges and protective factors to find out how the adversity is managed. Flach (1988, 1997) suggested a model defining a resilience process similar to the relational pattern between equilibrium and disequilibrium in Piagetian Developmental Theory. In this model, "bifurcation points" which characterize the traumatic times or life challenges disrupts the homeostatic state of individuals. This interruption leads to destabilization in cognitive, behavioral or affective constructs, called chaos. Flach mentioned that bifurcation points do not necessarily need to be life-challenging traumatic events; they can be daily life stressors. Those bifurcation points may provide grounds for being vulnerable or more effective functioning may be reached due to extreme stress, called reintegration. Reintegration is "the process of reforming a worldview" (Richardson, Neiger, Jensen, Kumpfer, 1990, p.37). The process starting from disruption and ending with reintegration is recurring. In this respect, it is similar to the learning process described in Piagetian theory where equilibrium is disrupted first, disequilibrium occurs and through new learning via accommodation -assimilation a new state of equilibrium (reintegration) is reached. According to Flach (1997) "resilient personality" is the source of reintegration.

Another model proposed by Richardson et al (1990) is similar to Flach's model mentioned above. This model essentially focuses on the interaction between negative life events and protective factors, named "biopsychospiritual protective factors." Biopsychospiritual homeostasis is "a point in time when one has adapted physically, mentally, and spiritually to a set of circumstances whether good or bad" (Richardson, 2002, p. 311). Just like in the previous model, the continuous disruptive events such as

life threats violate the homeostasis. Biopsychospiritual protective factors are exemplified as purpose in life, self-esteem, social skills and other factors. In the resilience process, individuals go through two main stages. At the first stage, individuals may become fearful, hurtful, guilty or confused; but then the adaptation process emerges by the individual asking, either consciously or subconsciously, the question “What am I going to do?” and represents the beginning of reintegration. Four types of reintegration are described in the model: resilient reintegration (reaching a more effective functioning than before the stressor), homeostatic reintegration (going back to the same level of functioning), maladaptive reintegration (going back to an inferior level of functioning) and dysfunctional reintegration (using completely dysfunctional coping mechanisms).

In conclusion, both models utilize the same principle of the causal idea in which the routine of daily life cycle is interrupted by a traumatic event and the *ordinary magic* (Masten, 2001) helps to alleviate the negative impacts of trauma on individuals. The process of reintegration which requires self-esteem, creativity, self-mastery, problem solving skills, autonomy, purpose in life, flexibility, general well-being and the like parallels to transcendence experience. Those elements are cited numerous times by many scholars (Flach, 1988; Kumpfer, 1999; Richardson et al., 1990).

A meta-theory of resilience and resiliency was proposed by Richardson (2002). Richardson described resilience and resiliency in three waves. In the first wave, resilience is seen as having trait-based qualities or assets serving for adaptability. Then the resiliency process, which incorporates coping with adversity in a manner that results in enrichment of the resilient qualities identified in the first wave, comes with the second wave. Finally in the third wave, named *innate resilience*, individuals recognize and acknowledge their inner force toward self-actualization and reintegration after adversity. Richardson (2002) also claims that “It is clear that society, as well as the academic revolution of the spirit or soul, supports the postulate that there is a healing, driving and motivating force within every soul” (p. 315). That is to say, an inner force or motivation moves toward self-actualization or altruism, which is especially consistent with the ideas of the eminent figures in Humanistic psychology (e.g. Maslow, 1970) and the

existentialist influence (*Logotherapy*, Victor Frankl, 1962) in psychology. Resilient people find more positive meaning within daily life stressors (Frederickson et al., 2003). This finding is consistent with the basic assumption of Viktor Frankl's Logotherapy (1962). Frankl states that "striving to find a meaning in one's life is the primary motivational force in man" (p.99). This premise provides an existential foundation for the conceptualization of resilience as well.

Carver (1998) suggested that resilience is a return to pre-event homeostasis, but what is stressed in the third wave of meta-theory proposed by Richardson (2002) is growth rather than simply recovering. He also stated (2002) that many disciplines from different perspectives such as quantum physics, transpersonal psychology or Eastern medical practice deal with the innate motivational force within individuals to bounce back. This force is obviously resilience and it has a variety of names depending upon the discipline (Richardson, 2002, p. 313).

1.3.3 Resilience from a Developmental Perspective

From a developmental viewpoint, resilience is the ability to effectively negotiate each successive stage of development (Blum, 1998) and achieve positive developmental outcomes in the context of adversity (Masten, 2001). Resilience literature clusters around developmental psychology research with children and adolescents (Cicchetti & Garnezy, 1993; Masten et al., 1990; Rutter, 1987). Among the classic studies of resilience in children under adverse conditions, Rutter (1985; 1987) found that children whose mothers were mentally ill did not show any maladaptive behaviors although expected to do so.

The pioneering Kauai study (Werner & Smith, 1982) was carried out in the context of poverty and looked for the protective factors that foster resiliency in children and adolescents. They followed a cohort of high-risk children born on Kauai Island for more than three decades. These children grew up to be competent and caring adults. Thus, resilience was defined as competence under stress (Werner, 1995).

Subsequent studies followed the similar research methods and the samples of those studies were “at risk” children and adolescents of low socioeconomic status living under negative family environments (Garmezy, 1991; Garmezy, et al, 1984). Research findings revealed that these disadvantaged children were competent (as judged by teachers, peers, school records) and did not display disruptive behavior problems.

Masten (1994) suggested that resilience involves people from high-risk groups who have had better than expected outcomes, adapted well despite stressful experience and have recovered from trauma. According to Garmezy (1993) who is a pioneer in the study of resilience, resilience is the power of recovery and the ability to return once again to those patterns of adaptation and competence. Masten (2001) called resilience “ordinary magic” and underlined strongly the ordinariness of the concept. She concluded that it is a common phenomenon, which results from the operation of basic human adaptational systems.

Luthar and his colleagues (2000) affirmed “*resilience refers to a dynamic process encompassing positive adaptation within the context of significant adversity*” (p. 543). Resilience is conceptualized as a dynamic process that influences an individual’s capacity to adapt and function successfully despite stress and adversity; it does not represent a personality trait (Luthar, 2003; Luthar et al., 2000). According to developmental psychologists, there are two critical conditions in being resilient: being exposed to extreme adversity and achievement of positive adaptation in spite of significant threats to the developmental process (Garmezy, 1991; Luthar & Zigler, 1991; Masten et al., 1990; Werner & Smith, 1982).

Developmental psychologists have accepted that the early studies (e.g. Garmezy, 1970) on atypical schizophrenics (see, Luthar et al., 2000) determined the route of pathways toward resilience. Similarly, children of schizophrenics were the subjects of studies undertaken on the emergence of childhood resilience (Garmezy, 1974).

Initial attempts from the developmental perspective have focused on the personal qualities of being resilient, such as autonomy or self esteem (Luthar et al., 2000).

Eventually, the researchers became aware that resilience was externalized as well as internalized. Thus, familial and environmental factors were later included in the studies focusing on resilience in children (Masten & Garmezy, 1985; Werner & Smith, 1982).

The most common aspects in the developmental definitions of resilience found in the literature are the existence of risk factors, the ameliorating influence of protective factors, and adaptive functioning in the face of risk (regaining competence) (Anthony & Cohler, 1987; Fonagy, Steele, Steele, Higgitt, & Target, 1994; Fraser et al., 1999; Garmezy, 1993; Rutter, 1987). Both risk factors that stem from multiple stressful life events and protective factors that ameliorate the negative influence of risk contribute to resilience, which is a dynamic developmental process.

Garmezy (1993) stated that the study of resilience must focus on answering two important questions: What are the characteristics -risk factors- of children, families, and the environment that predispose children to dysfunction following exposure to the adversity, and what are the characteristics –protective factors- that protect them from such adjustment problems? In attempting to answer these two questions, researchers have examined many factors related to the individual, family, or extra-familial social environment.

1.3.3.1 Risk Factors

Exposure to risk can increase the likelihood that a negative outcome will occur. Risk factors are defined as correlates of negative or poor outcomes. In the famous and groundbreaking Kauai Longitudinal Study, risk factors were chronic poverty, low maternal education, parental psychopathology, the presence of genetic abnormalities, and perinatal health complications (Werner, 1989). Without a real risk or adverse condition, the definition of resilience remains incomplete. Resiliency is what happens when one regains functioning after adversity (Garmezy, 1993). According to Masten (2001), individuals are not considered resilient unless some demonstrable risks exist. Many risk factors, ranging from status variables such as being the biological child of a parent with psychopathology or low SES to direct exposure to the maltreatment or violence, are good predictors of subsequent developmental problems (Werner, 1989). Recently, researchers

underlined the cumulative risk in the field of resilience. It is quite understandable that risk factors often co-occur and pile up over time (Masten & Reed, 2002).

1.3.3.2 Protective Factors

Some children who reach positive outcomes despite vulnerability and risk factors are called resilient. In addition to the presence of risk factors; the other mechanism in the resiliency concept, termed protective factors, help children respond to adversity constructively. Protective factors generally moderate the adverse effects of risks and enhance adaptation (Rutter, 1987). Resilient persons use internal and external resources such as their inner strengths or social support to cope with difficulties. Positive personality traits might be listed within the category of individual protective factors. These factors can justify the impact of risk exposure and can change outcome. A positive temperament, high self-esteem, moderate to high intelligence, internal locus of control, strong academic skills, strong social problem solving skills (Kohler, 1993); and a positive/optimistic outlook on the future are listed as protective factors in the individual context (Murray, 2003). A sense of humor is defined as an internal asset also commonly associated with resilience (Vanderpol, 2002).

Garmezy (1991) identified three categories for protective factors: individual factors such as positive temperament, self-esteem or social responsiveness; family factors such as supportive and warm family environment; and extra-familial support factors in the environment. Similar to the classification of protective factors posited by Garmezy (1985) and Werner (1989) clustered protective factors into three major categories: (a) personal attributes of the individual, (b) affectional ties within the family, and (c) existence of external support systems which arise at school or within the community.

Briefly, protective factors against adversity usually investigated in two main categories; internal and external protective factors in children.

1.3.4 Resilience in Adulthood

The majority of resilience research has been carried out with children and adolescents from a developmental perspective but little is known about how resilience works in adults

(Campbell-Sills, Cohan & Stein, 2006). Many people go through traumatic experiences but do not become severely traumatized. Since the target populations in trauma research were seeking treatment (Bonanno, 2004) it is hardly known about the role of resilience in adulthood. Bonanno conceptualized resilience in adults as being able to sustain healthy and stable levels of physical and psychological functioning in the wake of traumatic experiences.

Some studies (e.g. Baltes, Kuehl & Sowarka, 1992) mentioned that people's intellectual abilities and skills continue to develop even in older ages. There are studies reporting high levels of well being (Kunzmann, Little & Smith, 2000) or increasing quality of life (Sarvimaki & Stenbock Hult, 2000) in adulthood. Life challenges are obstacles to overcome. Therefore, it is inevitable that not only children and adolescents but people in each developmental period may need to be resilient. Factors promoting or reducing resilience might differ according to different age periods.

Regarding the dictionary and scientific definitions of resilience that states “the power or ability to return to the original form or position after being bent or compressed and the ability to recover readily from illness, depression or adversity” (Webster's Unabridged Dictionary, 2001), it is a human capacity to bounce back from adversity and flexible adaptation to ever-changing demands of life (Block & Block, 1980). One might conclude that the normal life stream could break suddenly at any time and a stressful and adverse life situation arise which calls for the ability of adaptation, no matter what age the individual is. In addition, one might also think that adaptation and coping after traumatic events and adversity or stressful life events have already been intensely studied in adult samples. As long as the ability to adaptation is the essence of resilience, individuals of all ages would need to be resilient at any point in the course of life. Unfortunately, research about resilience mechanisms that protect people from chronic stress and facilitate healthy adjustment in adults is limited and comparatively much less research on resilience in adulthood than in childhood exists in the literature. In the recent literature there has been a shift from “at risk” children to trauma samples in resilience studies as well (Bonanno, 2004). Some researchers (Rowe & Kahn, 2000; Staudinger, Marsiske & Baltes, 1993) describe resilience in older people, but their descriptions do not differ from the meaning

in adult resilience studies or childhood developmental studies. A type of adaptive capacity and flexibility (Staudinger et al., 1993) reflects resilience in older adults and elderly people too. In short, resilience contributes to independent functioning and well-being of all individuals regardless of age (Rowe & Kahn, 2000)

It is also noted that different pathways may contribute to resilience in adults (Bonanno, 2004). Campbell-Sills et al (2006) emphasized that resilience received little attention from clinical perspectives although it has been widely studied by developmental psychologists. Since the medical model which dominated the research and theory in clinical applications over five decades has begun to share the field with Positive Psychology; it will now be easier for adult resilience research to find its place in the literature. Even though most of the early studies mainly focused on resilience in children and adolescents resilience can be observed at any point in life's course and human beings may need to use their personal resilient qualities when adapting to adversity.

1.3.5 Underestimated Human Capacity in the Face of Trauma

Recently, Bonnano (2004) suggested that there is a natural capacity for resilience to loss and trauma within everyone. Likewise, Newman (2005) stated that “resilience is the human ability to adapt in the face of tragedy, trauma, adversity, hardship, and ongoing significant life stressors” (p. 227). After the terrorist attack of September 11, 2001, in August 2002 American Psychological Association, (APA) commenced a public education campaign entitled “The Road to Resilience.” In the USA, the National Resilience Development Act aimed at fostering resilience in Americans against terrorism (Davidson et al., 2005). Thus recently resilience studies that have been largely focus on developmental tasks have shifted toward adult resilience in the face of trauma. Since psychological literature on trauma, except the concept of post-traumatic growth, usually focuses on pathology that results from trauma and gives a little attention to positive outcomes; empirical findings regarding resilience in adult trauma survivors are limited in the literature.

In Bonanno's work (2004), trauma studies and treatment efforts are criticized for undermining adjustment efforts that characterize the resilient people. Paying greater attention to the human ordinary capacity to thrive is suggested. In a reply to Bonanno's article, Kelley (2005) came up with another excellent way of describing resilience, *an innate human psychological immune capacity*. He summarized it as "the human capacity for resilience, as highlighted by Bonanno, is natural and normal, part and parcel of the innate health built into all human beings" (p.265).

The basic assumption underlying Bonanno's model is that although most people are exposed to traumatic events during their life course, lots of them can manage to tolerate the traumatic events and distressing reactions in an outstandingly healthy way. Different from the developmental perspective focusing resilience in childhood and adolescence, maintaining an equilibrium state where individual is able to function psychologically and physically healthy is acquainted with resilience in adults. Bonanno primarily emphasized upon three points:

- 1) *Resilience is different from recovery*: resilient individuals are identified by stable healthy functioning even though some perturbations may occur.
- 2) *Resilience is common*: empirical findings suggesting that the majority of the traumatized people do not suffer from pathology are presented. Some available research findings indicating healthy functioning after trauma are the evidence of resilience.
- 3) *There are multiple and sometimes unexpected pathways to resilience*: Hardiness, self-enhancement, repressive coping, positive emotion and laughter are indicative of pathways to resilience.

1.3.6 Measures of Resilience

In addition to the conceptual ambiguity in resilience, an examination of the literature resulted in a paucity of reliable and valid measures of resilience (Beardslee & Podorefsky, 1988; Connor & Davidson, 2003). This shortage can be explained by the tendency of overly focusing on psychopathology instead of adaptive behaviors.

Resilience essentially is based on personal qualities and assets to help an individual to succeed in good adaptation and coping. It is a stress-resistant construct in human capacity that is hard to measure and define. Connor and Davidson (2003) mentioned that a textbook published by American Psychiatric Association does not yet include a resilience scale and underlined the need for a validated and reliable measure of resilience.

While there are some measures to quantify resilience in children and adolescents, there are only a few measures intended to assess resilience in adults. *Resilience Scale* (Wagnild & Young, 1993) in nursing literature; *Resilience Scale* (Jew, Green & Kroger, 1999); *Clinical Assessment Package for Assessing Client Risks And Strengths* (Gilgun, 1999); *Ego Resilience Scale* (Block & Kremen, 1996) are the scales mostly used in investigating adult resilience. Unfortunately, because of the diversity of definitions, none of these scales has been widely used and they lack generalizability. Among those instruments, the *Ego Resilience Scale* (Block & Kremen, 1996) is relatively frequently used; the *Resilience Scale* (Wagnild & Young, 1993) was generally used with the elderly. In order to fill this gap, in a recent study, Connor and Davidson (2003), developed a brief self-report scale to quantify resilience with over 1000 participants from different settings. Therefore, this scale is applicable to different populations since it was not developed for a specific group. However, it is not still widely known and utilized by the researchers as a resilience measure.

1.3.7 Personal Characteristics of Being Resilient

Why are some individuals better at dealing with life challenges? What are the qualities that help them to recover as quickly as they do in the face of trauma or adversity? It is wise to search for familial and environmental factors such as schooling or mentoring to examine what affects resilience in childhood or adolescence, but what about an adult who shows great adaptation in spite of serious threats compared to others? Are the same principles valid for everybody? This is an important question that resilience researchers need to answer.

Resilient qualities that include such characteristics as creativity (Simonton, 2000); hope (Snyder, 2000a); optimism (Peterson, 2000); self control (Baumeister & Exline, 2000) have been explored within positive psychology, The connections between resilience, a sense of coherence, purpose in life and self-transcendence were proved in a study asserting that those qualities have a bonding relationship with inner strength (Nygren et al., 2005). The results also showed that older people (above 85) had resilient qualities at least in the same amount as younger adults.

Beardslee (1989) postulated that resilience is the ability to restore equilibrium and is composed of self-confidence, curiosity, self-esteem and self-discipline. Cicchetti and Rogosch (1997) demonstrated that in maltreated, socioeconomically disadvantaged children, factors such as positive self-esteem, ego-resiliency, and ego-control predicted resilient functioning, whereas in non-maltreated children, relationship features, as well as ego-resiliency, proved to be more influential. Similarly, positive self-esteem is sometimes considered as the antecedent of resilience (Fergusson & Lynskey, 1996; Moran & Eckenrode, 1992) and sometimes a criterion for defining resilience (Radke-Yarrow & Sherman, 1990). Similar results were obtained in other studies as well. Ego-resiliency, ego-control, and self-esteem contribute to resiliency in maltreated children (Cicchetti, Rogosch, Lynch, & Holt, 1993); likewise alertness, autonomous behavior, initiative taking, self-confidence, and relaxation were found to be associated with resilience (Milgrim & Palti, 1993) in another study.

Resilient individuals who are described as optimistic, zestful, energetic and curious to new experiences are also identified by positive emotionality (Block & Kremen, 1996; Klohnen, 1996). Tugade and Frederickson (2004) found evidence that psychological resilience positively influenced physical health, which was consistent with the results of a study carried out among survivors of violent trauma (Connor, Davidson, & Ching-Lee, 2003). They concluded that higher levels of resilience produced more favorable outcomes regarding physical health, mental health and PTSD symptoms.

A study investigating the correlates of resilience among homeless adolescents showed that hopelessness, loneliness, life-threatening behaviors, and social connectedness were negatively related to resilience (Rew, Taylor-Seehafer, Thomas & Yockey, 2001). A pioneer researcher (Werner, 1989) indicated that greater resilience in children results in autonomous, independent, empathic individuals with task orientation, problem-solving abilities and positive peer relationships. Resilience was also found to be negatively associated with neuroticism, and positively related with extraversion and conscientiousness (Campbell-Sills et al., 2006).

Some personality factors such as self worth and self efficacy (Fonagy et al., 1994; Masten & Coastworth, 1998; Rutter 1987); optimism and hope (Floyd, 1996; Werner & Smith, 1982); internal locus of control (Parker, Cowen, Work & Wyman, 1990) that moderate risk might also considered being associated with resilience. In some studies resilience has been studied as a latent variable using psychosocial outcomes such as positive emotionality, high self-esteem, self-mastery, or general well being (e.g. Spaccarelli & Kim, 1995). It was also found that good cognitive skills moderate the risk and facilitate adaptation in the face of adversity (Fonagy et al., 1994; Masten & Coastworth, 1998; Parker et al., 1990).

1.3.8 Debate on Resilience: State or Trait?

The disagreement lies in defining the resilience concept as a trait or a process (Jacelon, 1997). In the beginning of the 1990's, in a pioneering study, Wagnild and Young (1993) who developed a widely used resilience scale, defined resilience as a personality trait regulating the negative effects of stressful situations. Additionally, Bartelt (1994) stated that resilience, as a personality trait is an element of the self that is reinforced by adversity. Cowen and Work (1988) provided a framework in which three clusters are identified to define the major characteristics of resilient individuals. The first cluster includes personal characteristics in individuals that are predisposed toward resilience. Similarly, Garmezy (1993) addressed the personal characteristics of children as the first factor in his triad of protective factors in a study with children in poverty. Miller (1988) also underlined the importance of personality factors predisposing resilience in response

to stress. Connor and Davidson (2003) noted that personal qualities forming resilience helps the individual to handle adversity.

Some other researchers define resilience as a dynamic process that must be assessed in the face of adversity rather than as a static characteristic or attribute of an individual (Brooks, 1994; Cicchetti & Rogosch, 1997, Norman, 2000; Werner & Smith, 2001). Wilkes (2002) underscored the dilemma between early theorists who considered resilience as a general trait and reasonably stable characteristics and later theoreticians who question how resilience, with its multidimensional nature differs across age, gender, social context, or cultural background. Although it seems that the major controversy between early and modernist definitions stems from the emphasis placed either on personal attributes or emphasizing the dynamic process within environmental context at familial and societal levels, there exists a common element in almost all definitions with different emphases. Successful or flexible human adaptation to stressful life events, reality constraints or adversity (Block & Kremen, 1996, Masten, 2001) is the common outcome shared by these two different approaches in other words, the *ordinary human adaptation system*.

The construct of resilience broadly involves successful adaptation resulting from the operation of basic human adaptational systems (Masten, 2001). In early times, Block and Block (1980) considered resilience a human capacity to bounce back from adversity and flexible adaptation to ever-changing demands of life. Flexible adaptation is the accurate appraisal of environmental demand and skillful cognitive functions with current ego functioning to facilitate optimal adaptive development (Funder & Block, 1989). Thus, the ability to successfully adapt in the context of significant adverse conditions seems to be the integral element of the two definitions.

Some researchers tried to differentiate between resiliency and resilience. They recommend (e.g. Luthar et al, 2000) that the term resilience, as a dynamic and developmental process, should be utilized when a significant adversity exists; on the contrary, resiliency as a personality trait does not require adversity. However, this may

not be the case since even the dictionary meaning of the term resilience - spring back or rebounding -involves adversity. Block and Kremen (1996) stated that resiliency is the primary basis of long-term adaptability to obstacles in the social environment, in other words; it is the capacity of the individual to effectively adjust to reality constraints, which naturally involves adversity or negativity. From both the trait and state perspective, approximately the same emphasis is given to the construct. However, there is no universal agreement on what constitutes resilience. Flach (1988) portrayed resilience as a dynamic system that can be learned at any time period in life.

It should be noted that instead of discussing resilience is a trait or state, it may be more fruitful to highlight how these two different views can come closer and merge in a unified resilience theory. It is noteworthy that carrying out research studies to identify the working principles under the resilience concept and specifying the relationship between attributes of resilience and resilient outcomes would help to understand the concept better. Moreover, commonalities and differentiations in resilient functioning across the life span is a significant issue to be explored (Bonanno, 2004). The present study may be considered as an attempt to achieve this end by using an adult sample.

1.4 Essential Personal Qualities Leading to Resilience

In this sub-section, an introductory literature review of other positive variables involved in the present study - that is, optimism, hope, life satisfaction, positive affect and self-esteem from the resilience perspective, will be briefly presented.

1.4.1 Self-Esteem

Self-esteem has been conceptualized as a state and a trait (Heatherton & Polivy, 1991). Like the concept of life satisfaction, a series of domain specific self- evaluations (e.g., academic self-esteem) are described, whereas a global feeling of self-worth (Rosenberg, 1965) is generally accepted. Self-esteem is a combined construct where both the cognitive part (Markus, 1977) and affective part (Brown, 1993) co-exists.

Self-esteem has a long history in psychology literature. The first roots of self-studies can be traced back to William James (1890) who wrote about pursuing positive outcomes for the self and the things related to self, “self-seeking.” Self-esteem is the most well-known and most studied concept in various fields of psychology, particularly in psychopathology (e.g., Joiner, 1995), health psychology (e.g., Silver, Bauman, & Ireys, 1995), social psychology (e.g., Crocker, 1999) and personality psychology (e.g., Furr & Funder, 1998).

Numerous models give emphasis to the adaptive role of self-esteem. For example, Terror Management Theory (Pyszczynski, Greenberg, Solomon, Arndt & Schimel, 2004) describes the function of self-esteem as an anxiety buffer mechanism to protect psychological well-being. In addition, social identity theory assumes that “individuals strive to maintain or enhance their self-esteem” (Tajfel & Turner, 1986, p. 16).

The overall sense of worthiness as a person is operationalized as global self-esteem (Baumeister, 1993; Branden, 1994; Rosenberg, 1979). Because of its simplicity and practicality the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is the most widely used measure (Byrne, 1996) for assessing global self-esteem. Self-esteem is the overall evaluation of the self (Blascovich & Tomaka, 1991) which indicates the degree of self-acceptance. Despite the fact that high self-esteem (SE) is typically viewed as an indicator of psychological health conflicting views about its adaptive role have been discussed in the literature (Crocker & Park, 2004). In fact, a global sense of self-worth (Rosenberg, 1965) might be either destructive or constructive. Some people have positive self-evaluations that are secure and self-confident, while other type of people who have positive self-evaluations that are fragile and vulnerable to threat. Indeed, some people possess *secure high SE*, whereas others possess *defensive high SE* (Jordan, Specer, Zanna, Hoshino-Browne, & Corell, 1993). It is also stated that overly positive self-opinions may well signal maladjustment and delusion (Colvin, Block, & Funder, 1995) such as prejudice (Crocker, Thompson, McGraw, & Ingerman, 1987) and aggression and violence (Baumeister, Smart, & Boden, 1996).

A wide range of literature indicates that high self-esteem contributes to well-being (Dubois & Flay, 2004). For instance, positive self-evaluations are associated with less depression (Tennen & Affleck, 1993), less neuroticism (Judge, Erez, Bono, & Thoresen, 2002; Robins, Hendin, & Trzesniewski, 2001; Watson, Suls, & Haig, 2002) and higher levels of life satisfaction (Diener, 1984); happiness (Cheng & Furnham, 2004); better psychological health (Sedikides, Rudich, Gregg, Kumashiro & Rusbult, 2004); less depressive symptoms (e.g., Furr & Funder, 1998). In the same way, Greenberg et al. (1993) demonstrated that high self-esteem lead to lower levels of defensive distortions. Consistently, Smith and Petty (1995) showed that negative affect responses to aversive situations are associated with lower level of self-esteem.

People with high self-esteem also experience less negative affect than those with low self-esteem in response to negative events (Moreland & Sweeney, 1984) and are less subject to depression (Hokanson, Rubert, Welker, Hollander, & Hedeem, 1989). In a similar vein, social support was associated with high self-esteem, which in turn increased optimism and was related to decreased depression (Symister & Friend, 2003). Consistent with the previous study, Aspinwall and Taylor (1992) examined the effects of self-esteem, optimism, and locus of control on psychological adjustment to college, health, motivation, and academic performance using a longitudinal sample of 672 students. The results showed that the correlation between self-esteem and optimism was .67. Ryff (1989) reported significant correlations in the theoretical directions with measures of self-esteem, locus of control, depression, and measures of subjective well-being.

Some unexpected findings also exist in the self-esteem literature. For example, one study found that females with higher self-esteem appeared less willing to forgive than females with lower self-esteem (Neto & Mullet, 2004). Another surprising finding related to the African Americans constantly reporting higher self esteem than Caucasians (Bachman & O'Malley, 1984), while Caucasians report higher self esteem than Asian Americans (Twenge & Crocker, 2002).

A recent study (Schmitt & Allik, 2005) investigated the internal reliability and factor structure of the Rosenberg Self Esteem Scale (RSES) among 16,000 participants from 53 different countries. The results indicated that self-esteem was correlated with neuroticism, extraversion, and attachment styles in romantic relationships among nearly all nations. Japanese people had the lowest self esteem score among the countries. The authors commented that since all the nations exceed the theoretical midpoint of the RSES, positive self-evaluation may be a culturally determined quality, which is consistent with another large self esteem study (Diener & Diener, 1995). This finding supports the notion of social identity theory, proposing that people do strive to sustain and increase their self-esteem (Tajfel & Turner, 1986). In general, the literature suggests that self-esteem is a universal human characteristic that can be measured (Schmitt & Allik, 2005). Measures of self-esteem have yielded comparable differences between individualistic and collectivist cultures (e.g., Kwan, Bond, & Singelis, 1997; Tafarodi & Walters, 1999). For example a study (Schmitt & Allik, 2005) confirms the cultural difference between individualistic and collectivist cultures; Japanese and American individuals differed in self-esteem scores. The universality of the negative relationship between neuroticism and self esteem, which buffers anxiety (Greenberg et al., 1992), was displayed as well.

A variety of psychological theories and models rely on the notion that self-esteem is a persistent strength in human motivation that is generally adaptive and associated with extensive positive outcomes (Pyszczynski et al., 2004). High levels of self-esteem also lead to the sense of efficacy that provides resources for coping with difficulties, setbacks, and failures (Carver & Scheier, 1981; 1998). In this respect, a positive relationship between resilience and self-esteem might be expected.

As mentioned before, less is known about adult resilience. There is inadequate evidence suggesting the association between resilience and self esteem but Bonanno (2004) suggested that resilience facilitates positive feelings of self worth in adults. A recent study (Benetti & Kambouropoulos, 2006) revealed that resilience exerted significant

positive indirect effect on self-esteem via positive affect, but the data showed no significant direct effects between anxiety, resilience and self esteem.

Since self-esteem is generally associated with desirable outcomes in the psychological literature, it is assumed that self-esteem would be the superordinate variable that relates to resilience via other variables included in the study.

1.4.2 Dispositional Optimism

The concept of optimism has long been acknowledged and the roots of optimism in contemporary psychology can be traced back to the beginning of the modern period of philosophy in the 17th century (Domino & Conway, 2001). In early times, the focus in philosophical discussions was on universal optimism and pessimism. In the beginning of the 19th century, philosophers and psychologists such as William James changed the focus from optimism about civilizations and the universe to the subjective human experience (Domino & Conway, 2001).

The recent extensive body of empirical evidence confirms that dispositional optimism plays a protective role in the process of physical and psychological well-being and adjustment. Moreover, empirical findings are well documented. Optimism has been linked to various aspects of psychological and physical well-being in adults (Lai, 1995; Schweizer, Beck-Seyffer, & Schneider, 1999). It was found to be positively associated with psychological functioning (Achat, Kawachi, Spiro, DeMolles & Sparrow, 2000), effective coping with stress (Billingsley, Waehler, & Hardin 1993); positive attitudes to mental health, adjustment, achievement, problem-solving, and health-related benefits (Carver, Spencer & Scheier, 1998; Peterson & Bossio, 2001; Scheier, Carver, & Bridges, 2001); psychological well-being (e.g. Taylor & Brown, 1988; Scheier & Carver, 1985; Scheier, Carver & Bridges, 1994) and physical health (Peterson, Seligman & Vaillant 1988). When experiencing adversity, optimists tend to continue to strive toward their goals rather than giving up (Carver et al., 1998). Optimists tend to engage in adaptive

problem-focused coping, constructive thinking and acceptance of uncontrollable situations while maintaining goal pursuit (Aspinwall, Richter & Hoffman, 2001).

Although the information on the physical and psychological outcomes of optimism is largely studied, not much is known about how it develops within individuals (Heinonen, Raikkonen, & Keltikangas-Jarvinen, 2005). For more than the past two decades, researchers have begun to pay increasing attention to the development of optimism.

The pioneering research (Scheier & Carver, 1985) on general optimistic expectancies was a turning point in the related literature. In their original formulation, Scheier and Carver (1985) defined optimism as a stable predisposition to “believe that good rather than bad things will happen” (p. 219). Dispositional optimism refers to the generalized expectation of a positive outcome of future events versus negative. (Scheier & Carver, 1985). Additionally, Scheier and Carver suggest that this generalized expectancy is relatively stable across time and in different contexts, and that it forms the basis of an important personality trait (Scheier & Carver, 1985; Scheier et al., 1994). They identified 12 self-regulated behaviors that assume peoples’ actions were greatly influenced by their beliefs. Two probable expectations about people’s general actions are either continued striving or giving up (Scheier & Carver, 1987). Holding positive expectations for the future is associated with having cognitions that good things will occur in life and being persistent in attaining personal goals. In contrast, holding negative outcome expectations for the future causes people to anticipate bad events, and these individuals tend to withdraw easily, become passive and finally give up on personal goals (Scheier & Carver, 1985).

Scheier and Carver (1985) also developed a measure in their groundbreaking research called the Life Orientation Test (LOT), which quantifies “the favorability of a person’s generalized outcome expectancy.” It consisted of self-reported items regarding outcome expectancies worded in a positive or a negative way. Scheier and Carver (1985) report that the LOT scores are moderately correlated in the theoretically expected direction with internal-external control (Rotter, 1966), self-esteem (Rosenberg, 1965), depression (Beck, 1967), hopelessness (Beck, Weissman, Lester & Trexler, 1974), alienation (Maddi,

Kobasa, & Hoover, 1979), and perceived stress (Cohen, Kamarck, & Mermelstein, 1983). In later work, the measure was revised to remove some items that overlap with coping (Scheier et al., 1994).

Dispositional optimism and coping seem to be closely related to each other. Optimism is positively associated with coping skills (Gillham & Seligman, 1999), whereas pessimism is associated with maladaptive coping strategies (Weintraub, Carver, & Scheier, 1986). Positive relationships have also been reported between optimism, hope, and health (Scioli et al., 1997). It was shown that dealing with stress is enhanced by optimism and effective coping strategies (Gillham & Seligman, 1999). Likewise, Seligman (1998b) asserted that optimistic people are less depressed and experience more enjoyment in social interactions. For example, pessimists show maladjustment following a variety of stressful life events (Litt, Tennen, Affleck, & Klock, 1992; Scheier et al., 1989) and report higher levels of depression (Bromberger & Matthews, 1996; Scheier et al., 1989).

Secure attachment and promotion of early trust between children and their primary caregiver results in a more positive outlook in general (Peterson & Seligman, 1984; Snyder, McDermott, Cook, & Rapoff, 1997a). Children exposed to divorce were more likely to develop a pessimistic attitude toward life (Nolen-Hoeksema, Girgus, & Seligman, 1986). Cultural group differences on the dispositional optimism measured by LOT-R have been observed as well. Chang (1998a) found that Asian American students were less optimistic than Caucasian students.

It is noteworthy that optimism that refers to a positive orientation toward the future and self esteem that refers to the emotional relationship toward the self are the basic components, along with control beliefs, in understanding mental health functioning (Mäkikangas, Kinnunen, & Feldt, 2004). Like optimism, individuals with high self-esteem are likely to have better mental and physical health than others (see Carver & Scheier, 1999; Carver & Scheier, 2002; Mäkikangas et al., 2004; Scheier & Carver, 1992; Scheier et al., 2001); have better coping abilities (Aspinwall & Taylor, 1992; Brissette,

Scheier, & Carver, 2002; Scheier & Carver, 1985; Scheier et al., 1994) and are more satisfied with life (Diener & Diener, 1995; Harju & Bolen, 1998).

Self-esteem and dispositional optimism are regarded as distinct constructs (Scheier & Carver, 1985; Scheier et al., 1994) and they have been consistently found to be positively correlated (Aspinwall & Taylor, 1992; Scheier & Carver, 1985). Self-esteem and optimism are considered as the components of the underlying construct of personal resilience (Major et al., 1998; Wanberg & Banas, 2000). Resilient people with high self-esteem and optimism cope better with stressful events and have a greater ability to survive in the face of adversity (see Major et al., 1998).

There are two studies (Major et al., 1998; Wanberg & Banas, 2000) that connect self-esteem and optimism from a resilient personality perspective. They assumed that these constructs are the core resources forming a resilient personality with control beliefs. Major et al. (1998) in their longitudinal study found that women with high resilience assessed their abortion experience as less stressful and had better psychological health than those with low personal resilience.

Resilience is associated with better coping skills and mental health indicators. For example, Wanberg and Banas (2000) found that employees with high personal resilience were better at adapting to organizational changes than those with low resilience. It seems that self-esteem and optimism constructs are important to mental health (Mäkikangas & Kinnunen, 2003; Wenglert & Rosén, 1995).

Another study supporting the idea of self-esteem and optimism as correlates of resilience was carried out by Judge and Bono (2001). They considered that the most central of the core self-evaluation traits and optimism are highly connected and are also the components of personal resilience.

The literature strongly suggests that trait optimism is a factor contributing to resilience (Gordon & Song, 1994; Hauser, 1999; Werner & Smith, 1992). Actually, the most

influential adolescent cognitive factor to alleviate the negative effects of life stressors was found to be optimism (Gordon & Song, 1994)

The life orientation test (LOT; Scheier & Carver, 1985) measuring dispositional optimism in individuals was adapted into Turkish by Aydin and Tezer (1991). The authors reported that LOT scores were significantly correlated with depression scores and physical health symptoms. Another study (Üstündağ-Budak & Mocan-Aydın, 2005) focusing on optimism revealed that optimism was the best predictor of physical health symptoms in a Turkish sample. Furthermore, Çileli and Tezer (1998) reported that optimistic and pessimistic Turkish college students have different value structures; that is, optimists have values including more active and positive coping with the environment whereas pessimists have values including self-restriction. As a construct seem to have attracted the attention of young researchers. It has been a subject studied in a number of graduate dissertations as well (e.g., Akkoyun, 2002; Aşan, 1996; Üstündağ-Budak, 1999; Teke, 1994; Tuna, 1997). Recently, the Life Orientation Test was revised by Türküm (LOT-Re, 2001). The revised form also had satisfactory reliability and validity evidence. Türküm also (2006) reported that optimism was a significant predictor of self protecting behavior in a sample with man-made or natural disaster history. A study in a Turkish sample revealed that optimism significantly predicted well-being along with submissiveness, marital status and occupation statutes (Türküm, 2005). Consistent with the previous finding, optimism negatively predicted depression and positively predicted life satisfaction among Turkish immigrants living in Canada (Uskul & Greenglass, 2005).

1.4.3 Dispositional Hope

A substantial amount of research has demonstrated that hope is a human strength for facing life challenges. Hope as a potential resiliency factor (Kashdan et al., 2002) was described in the early studies as having *positive expectations for goal attainment* (Menninger, 1959; Stotland, 1969). The earlier definition of hope is quite similar to the current definition of dispositional optimism: that is, generalized positive outcome expectancies (Scheier & Carver, 1985). The study of hope has accelerated since the early years of 1990s (Snyder, 1994; Snyder et al., 1991a).

Snyder and his colleagues developed both hope theory (1994) and reliable and valid measures of dispositional and state hope (Snyder et al., 1991a; Snyder et al., 1996). Snyder et al (1991a) proposed that although traditionally hope is described as a “unidimensional construct involving an overall perception that goals can be met” (p. 570), it is better conceptualized in terms of two interrelated cognitive components: agency and pathways. The two-factor structure of the dispositional hope scale was confirmed across a large multi-ethnic sample. No significant gender and ethnic differences were detected in the factor pattern coefficients for the agentic thinking and Pathways factors (Roesch & Vaughn, 2006).

The agentic thinking component refers to the person’s perceived cognitive ability to initiate and maintain motivational movement toward a goal, whereas pathways refer to the perceived cognitive ability to produce effective methods to attain goals. Within this cognitive perspective, hope is defined as “a cognitive set that is based on a reciprocally derived sense of successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet goals)” (Snyder et al., 1991a, p. 571). In another pioneering study, hope was defined as a positive motivational state that is based on an interactively derived sense of successful agency (goal-directed energy) and pathways (planning to meet goals) (Snyder, Irving, & Anderson, 1991b, p. 287).

In a more recent study, Snyder conceptualized hope as a variable reflecting cognitive subjective appraisals of goal-attaining abilities showing individual variation (Snyder, 2000b). In Snyder’s theory, three major components of hope: goals, agentic thinking, and pathways are defined as follows:

Goals: Goals are the keystones of hope theory (Snyder, 1994). Goals may be for short or long term. Individuals display goal-directed behaviors to attain the desired outcomes. Thus, goals are imperative to motivate the behavior. In order to define an adaptive goal, it should be attainable but also to some extent it should include uncertainty; otherwise, the individual may be discouraged. On the contrary, if the goal is easily attained, then the accompanying motivation naturally

will be low. Therefore, hope theory is concerned with moderately attainable goals (Snyder, 2000b).

Pathways: Pathways reflects a person's perceived cognitive ability to generate workable routes to goals (Snyder, Rand, & Sigmon, 2002). Formulating alternative effective ways should be generated to sustain hopeful thinking if barriers are encountered to goals (Irving, Snyder, & Crowson, 1998)

Agency: Agency is the motivational component causing one can begin and sustain movement along the particular pathway to attain the goal. In addition, agentic thinking provides positive motivation to open alternative pathways (Irving et al., 1998; Snyder, 1994).

Diverging from earlier theoretical frameworks on the construct of hope (Dufault & Martocchio, 1985), Snyder's theory elucidates the cognitive working mechanism under the hope construct. Therefore, hope is an resistant disposition comprised of two components, termed agency and pathways. These two cognitive elements are iterative and positively related but not identical (Babyak, Snyder, & Yoshinobu, 1993). Snyder et al (1991a) added that emotions are also important in hope theory, stating that they are "the sequel of cognitive appraisals of goal-related activities" (p. 571). In this model successful striving toward goals elicits the positive emotions.

Studies over the past decade have supported the importance of hope among adults. An extensive body of research has shown that hope is directly connected to adjustment and well-being (Snyder, 2002). Higher hope has been related to adaptive coping and adjustment in a variety of stressful situations (Barnum, Snyder, Rapoff, Mani, & Thompson, 1998; Taylor & Armor, 1996) increased self-esteem (Curry, Snyder, Cook, Ruby, & Rehm,1997); more flexible and positive thoughts (Snyder et al., 1996; Snyder & McCullough, 2000), and more positive appraisals of stressful events (Affleck & Tennen, 1996); college grades (Chang, 1998b); decreased stress caused by caring for a chronically ill child (Horton & Wallander, 2001); being less reactive to stressful situations (Chang & DeSimone, 2001; Snyder, 2002). Furthermore, lower hope in adults has been negatively associated with depression and externalizing behaviors (Snyder, Lopez, & Shorey, 2003);

feelings of burnout (Sherwin et al., 1992). On the basis of the documented research above and the study carried out by Irving et al (2004) hope may be one of those human strengths.

Hope is similar to optimism in terms of a focus on positive expectancies; however, these constructs have important theoretical distinctions. Research has shown that hope and optimism have different factor structures and hope accounts for a unique variance beyond optimism in several criterion variables measuring depressive and anxiety symptoms (Magaletta & Oliver, 1999; Snyder, Cheavens, & Michael, 1999). Magaletta and Oliver (1999) concluded that optimism and hope constructs were positively, significantly and moderately correlated. In a similar vein, Carvajal, Clair, Nash, and Evans (1998) reported a correlation of .48 (23% shared variance) between measures of optimism and hope in a large sample. Bryant and Cvenegros (2004) showed that hope and optimism were similar but different constructs. They reported that hope was more related to self efficacy regarding personal attainment of specific goals, whereas optimism focuses more on positive reappraisal coping, considering the expected quality of future outcomes in general. In the optimism model, suggested by Scheier and Carver (1985), the focus is on outcome expectancies about the future; however, agentic thinking and pathways thinking equally carry the importance in hope theory.

Due to the limited research in adult resilience, most studies describing the link between hope and resilience have been rooted in developmental resilience studies. For example, resilience, like competence and adaptation as outcomes of coping, is concerned with positive growth, orientation toward future and hope (Murphy, 1987, p.101).” Likewise, Rutter defines resilience “as a positive pole of ubiquitous phenomenon of individual differences in people’s response to stress and adversity, as well as hope and optimism in the face of severe risk or adversity.” (1990, p.181)

Werner and Smith (1992) said that the ability to bounce back from adversity necessitates hope. Perhaps, resilience studies are the best place to examine optimism and hope, which are two central concepts in positive psychology. Optimism and hope are defined characteristics of resilient children and adolescents (Kumpfer, 1999; Martinek & Hellison,

1997); setting goal-directedness, having achievement motivation, persistence, and believing in a good future are the attributes of resilience that is on the horizon (Benard, 1991).

Despite the increasing recognition of the importance of hope, this topic has not received the interest it deserves among the Turkish researchers. Regarding hope studies in Turkey, although the trait hope scale (Snyder et al., 1991a) was adapted into Turkish a long time ago by Akman and Korkut (1993), there have been limited studies in Turkish literature. Akman and Korkut (1993) showed that Dispositional Hope Scale had satisfactory reliability and validity evidence in a Turkish sample. A graduate study (Denizli, 2004) reported that dispositional hope was a predictor of emotionality dimension of test anxiety regardless of gender among Turkish college students. Another recent graduate study (Kemer, 2006) investigated the role of dispositional hope in predicting university entrance exam scores. The results revealed that the subscale of Dispositional Hope Scale, *pathways*, was a significant predictor of achievement.

Perhaps no statement can express the vital role of hoping in the resilience concept better than Lester's (1995) following sentence: "When people are wounded and in need of healing, confused and in need of guidance, overwhelmed and in need of reconciliation, or trapped and in need of liberation, it should be obvious that hope and despair are major psychological dynamics" (p.1).

1.4.4 Life satisfaction

Increasing happiness or life satisfaction is a common concern of many areas such as psychology, philosophy or economy. Recently, it has attracted enormous attention from positive psychologists. It can be considered as a cognitive attitude resulting from personality and life conditions. Life satisfaction is one of the major components of subjective well-being (Andrews & Whithey, 1976; Diener, 1984). It reflects a global cognitive evaluation or judgment of one's satisfaction with his or her life (Diener, 1984). In other words, it is a cognitive and evaluative summary of one's general life pleasure. However, the concept of life satisfaction does not cover the full meaning of subjective quality of life was supported (Vitterso, 2003). Life satisfaction can be assessed in terms

of the global life (Diener, Emmons, Larsen, & Griffin, 1985) or certain life domains, such as job satisfaction, that can be assessed separately (Brunstein, 1993; Zika and Chamberlain, 1987).

The construct is typically assessed with the Satisfaction with Life Scale (SWLS; Diener et al., 1985), a five-item scale in which participants are asked to indicate their agreement on a likert scale ranging from 1 to 5. The items are: “In most ways my life is close to ideal,” “I am satisfied with my life,” “So far I have gotten the important things I want in life,” “The conditions in my life are excellent,” and “If I could live my life over, I would change almost nothing.”

Individual differences in well-being are elucidated in two theoretical approaches: (Diener, 1984; Feist, Bodner, Jacobs, Miles, & Tan, 1995). This represents the oldest debate in psychology: state versus trait. In their early study, Schwarz and Strack (1991) demonstrated that situational conditions (e.g. mood) can strongly influence self-reports of life satisfaction; recently it was found that satisfaction with life assessed by self-reporting is more a stable trait than a variable state (Eid & Diener, 2004). Some of the extant literature on the topic suggests that Subjective well-being is highly stable (Headey & Wearing, 1989).

Consequently, life satisfaction, as the product of a cognitive evaluation process, reflects how well life’s expectations have been met (Edgerton, 1990), a comparison of aspirations with achievements (George, 1979) and judgments about life in terms of personal norms derived from experience (McCauley & Bremer, 1991).

Emmons and Diener (1985) found that extraversion, neuroticism, emotionality, sociability, and locus of control were all associated with global life satisfaction. The positive association between extraversion and life satisfaction was supported by the other studies (Costa & McCrae, 1980; Diener, Sandvik, Pavot & Fujita, 1992).

Schwarz and Strack (1999) proposed that life satisfaction judgments are “extremely sensitive to contextual influences” (p.63) and “highly context-dependent” (p.62,). On the other hand, Pavot and Diener (1993) demonstrated high retest (exceeding .70) stability of life satisfaction judgments over retest intervals of several months.

It was found that life satisfaction decreased as the age advanced and income decreased in Taiwan’s elderly population (Chen, 2001). The positive association between self-satisfaction and life satisfaction appears to be also strong (Argyle & Lu, 1990; Campbell, 1981; Diener & Diener 1995). Diener and Diener, in their comprehensive study, reported significant correlations between self-satisfaction and life satisfaction in 29 of 31 countries as ranging from 0.21 in Bahrain to 0.60 in the USA. Furthermore, spiritual people report more happiness and life satisfaction than do the non-spiritual people (Cohen, 2002). Existential well-being and marital satisfaction was found to contribute significantly to life satisfaction (Perrone, Webb, Wright, Jackson & Ksiazak, 2006). Secure attachment to parents was correlated with life satisfaction among late adolescents and college students (Cotterell, 1992; Paterson, Field & Pryor, 1994).

An interesting cross cultural finding regarding life satisfaction revealed that emotions were better predictors of life satisfaction than social norms; that is social approval of life satisfaction in individualist cultures, whereas social norms and emotions were equally strong predictors of life satisfaction in collectivist cultures (Suh, Diener, Oishi & Triandis, 1998).

There are some studies related to life satisfaction in Turkish literature (e.g., Bulut, Çivitçi, 2007; Deniz, 2006; Keser, 2005; Kılınç & Granello, 2003; Özer & Karabulut, 2003; Şener, Terzioğlu & Karabulut, 2007; Şimşek 2005; Siviş, 2005). One study found that life satisfaction is positively correlated with coping and optimism whereas negatively correlated with depression among Turkish immigrants living in Canada (Uskul & Greenglass, 2005). Moreover, perceived stress and coping resource availability were predictors of life satisfaction among Turkish college students. Significant correlations were reported between life satisfaction with perceived economic well being, social

support, and stress monitoring (Simons, Aysan, Thompson, Hamarat, & Don, 2002). In a recent doctoral study, self esteem and collective self-esteem were directly related to life satisfaction and attachment in a sample consisting of Turkish college students (Şimşek, 2005). A cross-cultural finding showed that U.S. participants were likely to experience higher Life Satisfaction than were the Turkish groups (McConatha, Reiser-Danner, Harmer, Hayta, & Polat, 2004). In a large cross-cultural sample, the correlation coefficient of .47 between self-esteem and life satisfaction was reported. On the other hand, the correlation coefficient was lower for Turkish university students (.35 for girls and .38 for boys). Another finding confirmed the results of the previous study reporting that self esteem was a predictor of life satisfaction in a Turkish sample (Yetim, 2003). The results of the study also revealed that individualism is associated with greater life satisfaction whereas collectivism is associated with low life satisfaction.

On the other hand, a cross-cultural finding showed that American and Turkish students also did not differ significantly in regard to life satisfaction (Matheny et al., 2002). Another study carried out among Turkish college students indicated that perceived stress and coping resource availability moderately predicted the level of life satisfaction; however the results also showed that the combination of these two variables was a better predictor of life satisfaction. Significant correlations between life satisfaction and perceived economic well being, social support and stress were reported (Simons, Aysan, Thompson, Hamarat & Steele, 2002). Life satisfaction was found to be consistently related to self-esteem and optimism using self report measures and other informants (Lucas, Diener & Suh, 1996).

To date, no study indicating the direct or indirect relationship between life satisfaction and resilience in adults within a natural disaster environment was encountered in the literature. In the current study, the possible connection between life satisfaction and resilience was investigated.

1.4.5 Positive Affect

Positive emotions are the markers of human flourishing in the short term and long term (Frederickson, 2001). Positive emotions depict well-going life, achieved goals and adequate resources (e.g., Cantor et al., 1991; Carver & Scheier, 1998; Clore et al., 2001). Several theorists mentioned the facilitator role of positive emotions in engaging with environments and taking actions (e.g., Cacioppo, Gardner, & Berntson, 1999; Carver & Scheier, 1990; Frederickson, 2001).

Frederickson (2001) suggested “*broaden and build theory*” for positive emotions. She stated that “certain discrete positive emotions – including joy, interest, contentment, pride, and love – although phenomenologically distinct, all share the ability to broaden people's momentary thought-action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources” (p. 219). This theory brings a new perspective to positive emotions, which posits that positive emotions may expand the variety of cognitions and behaviors to build an individual's physical, intellectual, and psychological resources when adapting to a new situation. Higher positive affect (PA) leads to broader competence to recover from stressful events. According to the theory, positive emotions motivate people to sustain their thinking style or action that they have initiated (Clore, 1994). People seek new goals that they have not yet attained.

Happy people are described as individuals who experience positive emotions (Diener, Sandvik, & Pavot, 1991, Diener, Larsen, Levine, & Emmons, 1985). Confidence, optimism, and self-efficacy; likeability and positive construal of others; sociability, activity, and energy; prosocial behavior; immunity and physical well-being; effective coping with challenge and stress; and originality and flexibility are documented as characteristics related to positive affect (Lyubomirsky, King, & Diener, 2005). Diener et al. (1991) conclude that happiness is best regarded as a state in which people feel a preponderance of positive emotions most of the time. Therefore, it will be feasible to postulate a close connection between happiness and positive affect.

There is an extensive body of empirical findings related to positive affect. Positive affect was found to be associated with life satisfaction ($r = .40$ to $.50$) and optimism (Lucas et al., 1996); more favorable evaluations from supervisors and others; (Staw, Sutton, & Pelled, 1994); reduced absenteeism at work (George, 1989); job satisfaction (Connolly & Viswesvaran, 2000); less conflict with other workers (Van Katwyk, Fox, Spector, & Kelloway, 2000); high-quality social relationships (Diener & Seligman, 2002); more satisfaction with friends and social activities (Cooper, Okamura, & Gurka, 1992); less jealousy of others (Pfeiffer & Wong, 1989); higher-quality romantic relationships (Berry & Willingham, 1997); lower self-criticism (Mongrain & Zuroff, 1995); engaging in a greater frequency of activities (Watson, Clark, McIntyre, & Hamaker, 1992); better health (Sullivan, LaCroix, Russo, & Walker, 2001); fewer physical symptoms (Watson, 1988); effective coping (McCrae & Costa, 1986); and coping by active engagement (Miller & Schnoll, 2000). Low positive affect is associated with history of substance abuse (Bogner, Corrigan, Mysiw, Clinchot, & Fugate, 2001); delinquent activity in adolescents (Windle, 2000), loneliness (Lee & Ishii-Kuntz, 1987); physical exercise (Watson, 1988); curiosity and desire for exploration (Kashdan, Rose, & Fincham, 2004); greater percentage of their time helping others (Lucas, 2001).

People with high PA is characterized by being open to processing new types of information and having greater cognitive flexibility (for a review, see Fredrickson, 1998). Furthermore, the attentional and cognitive processes of people experiencing positive emotions are characterized by a global rather than a local focus (Fredrickson & Branigan, 2004; Gasper & Clore, 2002); enabling them to see the “whole picture.” Positive affective experience contributes to better mental health (e.g., Taylor & Brown, 1988). High levels of negative affect and low levels of PA are the indicators of depression (Watson & Clark, 1984) and low PA is associated with self-oriented perfectionism (Saboonchia & Lundh, 2003). Diener and Seligman (2002) reported that their happiest group of people had few symptoms of psychopathology.

A recent study (King, Hicks, Krull & Del Gaiso, 2006) has attached an existential dimension to the empirical findings related to PA. The results of the study showed that

individuals experiencing positive emotions incline to feel that life is meaningful. Furthermore, positive emotions may increase sensitivity to the meaning relevance of a situation.

Experiencing positive emotions may be the crucial element in the activation process of resilience following adverse events (Folkman & Moskowitz, 2000, Tugade, Frederickson & Barrett, 2004) such as chronic pain (Zautra, Johnson & Davies, 2005) or terrorism (Fredrickson et al., 2003). High resilient individuals tend to report positive emotions even under stress, and that these positive emotions contributed to recovery from adversity and lessened negative effects (Tugade & Fredrickson, 2004). Following the September 11, 2001 terrorist attacks in the United States found that resilient individuals were less likely to experience depression and more likely to report increases in psychological growth after the attacks. Positive emotions experienced after the attacks completely mediated the relation between resilience and coping variables.

Regarding empirical findings about positive emotions in Turkish samples, one study examined the emotional well-being among college students; significant associations between a strong sense of collective, social and personal identity and positive emotions were reported (Karakitapoğlu-Aygün, 2004). According to the results, items described the *Inner-Outer Harmony* were highly correlated with emotional well-being. The study emphasized the vital role of social relationships and group belongingness in well-being in the Turkish sociocultural context. Consistently, appreciation-related social support were directly related with psychological well-being among Turkish undergraduate students (Gençöz & Özlale, 2004). As expected, negative relationship was found between positive affect and depression (Gençöz, 2000, 2002). Low positive affect was also identified with depression symptomatology. A recent study reported that low positive affect is a significant predictor of probability of suicide (Gençöz & Or, 2006). In a graduate study, it was reported that collective self esteem and self esteem were directly related to positive and negative affect (Şimşek, 2005).

Positive affect is the most studied variable with resilience in limited adult resilience literature (e.g., Fredrickson et al., 2003; Frederickson & Losada, 2005; Tugade, & Frederickson, 2004). The association between positive emotions and resilience appears to be strong. Thus, in the present study it is expected that that positive affect would be a powerful predictor of resilience.

1.5 Resilience and Natural Disasters

Natural disasters always create enormous challenges for human beings. A disaster is a catastrophic event that can be life threatening; produces physical injury and creates stress in people's lives (Bruce, Ford, Ruzek, Friedman, & Gusman, 1999). Survivors face the danger of death or physical injury and the loss of their homes or loved ones. Such negative aftermaths of natural disasters put survivors at risk of behavioral and emotional re-adjustment problems. A National Center for PTSD fact sheet (Norris, Byrne, Diaz, & Kaniasty, 2002a) reviewed a total of 177 articles that described results for 130 distinct samples composed of 50,000 subjects who witnessed 80 different disasters. They concluded that the types of the reported disasters were 62% natural disasters, 29% technological disasters, and 9% mass violence. The interesting conclusion was that survivors in developing countries were at greatest risk when the location of the disaster was considered. More severe effects were observed in developing countries as compared to developed countries.

It is postulated that natural disasters all over the world would be become more frequent and their effect would be more severe in the future (Global Environmental Outlook, GEO). As presented in Figure 1.1, the number of disasters has been increasing rapidly since 1960. For instance, 305 natural disasters occurred in 2004 whereas one year after the number of reported natural disasters was 360 (Emergency Disasters Date Base, EM-DAT, The OFDA/CRED International Disaster Database).

Natural disasters reported

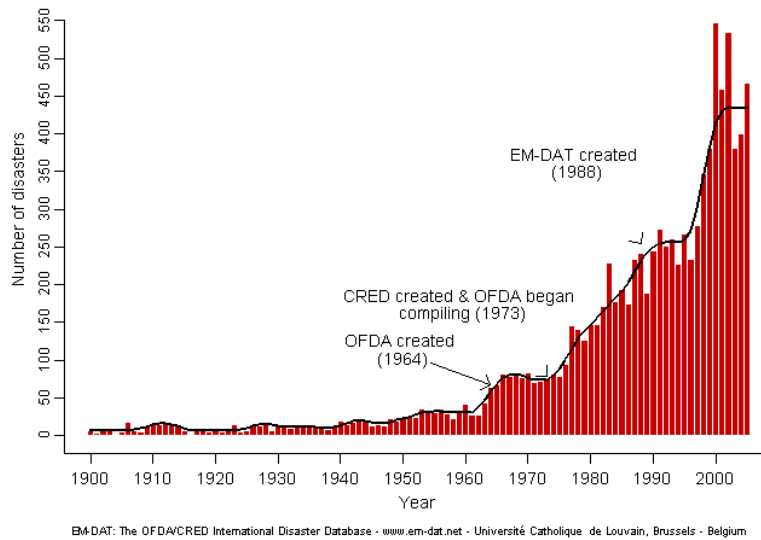


Figure 1.1. The number of reported natural disasters all over the world

Based on the previous statistics, more people are vulnerable to disasters. The number of people affected by the disaster between the years of 1961-1970 was 23,311,610. However, there has been a rapid increase in the number of those people in the following decades. Between the years of 1991 and 2000, 206,899,343 people were affected by disasters (Our World Foundation, Disasters Data). Many reasons such as climate change, global heating, destroying nature or rising population might be speculated on the increasing trend in the occurrence of natural disasters. Turkey is experienced significant numbers of natural disasters in 2005 (see Table 1.1).

Table 1.1. Countries most hit by natural disasters - 2005

China Republic	31
India	30
United States	16
Afghanistan	13
Bangladesh	12
Pakistan	11
Vietnam, Indonesia, Romania	10
Iran, Russia	9
Haiti	8
Mexico, Turkey	7

Source: EM-DAT: The OFDA/CRED International Disaster Database-www.em-dat.net-
Université Catholique de Louvain, Brussels. [http://www.em-dat.net/documents/2005-
disasters-in-numbers.pdf](http://www.em-dat.net/documents/2005-disasters-in-numbers.pdf)

Furthermore, Turkey is a country which has suffered a large number of deaths and economical difficulties caused by natural disasters, particularly the earthquakes (See Table 1.2).

Table 1.2 The number of death caused by earthquakes in Turkey

Date	Epicenter	Number of casualties
25.03.2004	Turkey, Erzurum	10
01.05.2003	Turkey, Bingöl, Celtiksuyu	176
12.11.1999	Turkey, Düzce, Adapazari, Bolu	845
17.08.1999	Turkey, Izmit, Kocaeli	15000
27.06.1998	Turkey, Adana, Incirlik	144
13.03.1992	Turkey, Erzincan	653
18.10.1984	Turkey, East Anatolia	3
18.09.1984	Turkey, East Anatolia	4
30.10.1983	Turkey, East Anatolia	1346
24.11.1976	Turkey, Muradiye, Manisa, Çaldıran	3840
06.09.1975	Turkey, Lice	2385
28.03.1970	Turkey, Gediz	1086
18-19.8.1966	Turkey, Varto	2400

Source: Munich Re Group, Major Disasters, Turkey.
<http://mrnathan.munichre.com/>

Two severe earthquakes occurred in Turkey in 1999. After the earthquakes hit Marmara region magnitude of 7.4 and 7.2 on 17th August and 12th November 1999 respectively; over 130,000 houses were severely damaged and 17,127 people died and 24,000 people were injured (Government Crisis Center, 1999). Predictions of another major earthquake in the next 30 years, the epicenter of which is expected to be much nearer Istanbul provoked the psychological impact of these two devastating disasters.

It is important to note that one year after the Marmara earthquake causing 380,000 buildings damaged or destroyed (American Red Cross), Turkey failed to manage effectively with the effects of such a large scale disaster and one of the basic needs of human beings, sheltering, could not meet adequately; roughly 20,000 survivors were living in tents (Ertem & Cin, 2001). Since earthquakes have large-scale impacts on Turkish people, better mitigation efforts for different areas such as earthquake-resistant structure construction or disaster preparedness for community should be put into practice in order to alleviate the negative psychological impacts of earthquakes.

Natural disasters are different from man-made disasters; some characteristics are attributed to the natural disasters (McCaughey, Hoffman, & Llewellyn, 1995). Natural disasters are unpredictable and elusive; they are hard to manage. They may cause large scale destruction, death and injury. Many people all over the world somehow are involved with disaster preparedness programs, disaster management policies, recovery endeavors or mitigation efforts. After the destructive earthquakes in 1999, the awareness of disaster preparedness has been raised at family level, individual level and community level. The Marmara and Düzce earthquakes not only caused large scale death tolls and economic damage but also led to adverse psychological effects among the survivors.

Natural disasters that threaten the life of humans have been identified as traumatic events. Howe (1997) defined trauma as experiences such as physical and sexual abuse, painful and frightening medical procedures, exposure to situations in which violence is perpetrated on another (e.g., homicide of a parent), or involvement in a natural disaster (e.g., a hurricane).

A number of credible research reports concerning the mental health impact of natural disasters have emerged (Solomon & Green, 1992). Deep damage is seen in basic belief systems of individuals and their sense of security is shaken (Burt & Katz, 1987). People may generate a large range of traumatic reactions following a natural disaster. Those reactions that might include fear, isolation, and feeling of guilt, helplessness, anxiety, anger, or sense of insecurity are normal reactions to an “abnormal” event. Those

reactions are similar to traumatic reactions in many ways and they may disappear after returning to the normal life cycle.

One of the early Turkish studies performed investigating the psychological impacts of earthquakes was conducted by Karancı and Rüstemli in 1995. Following the Erzincan earthquake in 1992, which measured 6, 8 on the Richter scale and resulted in 541 people killed, 850 severely injured and 5500 buildings collapsed or severely damaged. The study revealed that subjects were suffering from phobic anxiety; fear and panic were the most common reactions. In a subsequent study, Karancı and Rüstemli (1999) examined earthquake expectations and preparedness in association with a group of personal, experiential, affective, and cognitive variables in a sample exposed to Erzincan Earthquake. The results showed that perceived control and fear were the major factors determining the victims' earthquake-related cognitions and preparedness.

Serious adverse psychological effects of natural disasters have also been observed in people (e.g. Başoğlu, Şalcıoğlu, & Livanou, 2002, Yıldız & Göker-Kuruoğlu, 2004). For example, one study (Yıldız & Göker-Kuruoğlu, 2004) that was carried out four years after the devastating earthquakes in 1999 revealed a high rate of psychiatric comorbidity among earthquake survivors. The prevalence rate of PTSD was reported as 40%. The major depressive disorder was identified as the most prevalent comorbid diagnosis (74.3%). According to the results of another study performed in Turkey (Başoğlu et al., 2002), PTSD rate was 43% among earthquake survivors. Some other studies from different countries showed similar results. Following Armenian Earthquake, PTSD has been diagnosed mostly among survivors (67%) along with major depressive disorder (Goenjian et al., 1994).

A brief version of cognitive behavioral therapy was used as an intervention with survivors of the 1999 earthquakes. The earthquake related fears were reduced by enhancing self-control mechanisms (Başoğlu, Livanou, Şalcıoğlu & Kalender, 2003). In a similar vein, the effectiveness of a single session fear reducing behavioral treatment among the earthquake survivors was tested in a study conducted three years later after the

earthquakes. The authors suggested that brief behavioral treatment is an effective and affordable intervention for earthquake survivors (Başoğlu, Şalcıoğlu, Livanou, Kalender & Acar, 2005). In another study, the higher rates for PTSD and depression were reported for the individuals who were close to the epicenter. Traumatic stress symptoms and depression among earthquake survivors were predicted by the degree of exposure and some demographic factors. That is to say, loss of friends and neighbors, excessive fear during earthquake, being female and lower education were the predictors of trauma symptoms while loss of relatives, previous history of psychiatric illness and closeness to the epicenter were the predictors of depression 18 months after the earthquake (Kılıç & Ulusoy, 2003). Increasing PTSD and depression rates after natural disasters are universal and consistent findings over the world (e.g. Armenian et al., 2000; Carr, Lewin, & Kenardy, 1997; Carr et al., 1995; Goenjian et al., 1994; Goenjian et al., 2000; Lima et al., 1989; Wang et al., 2000). Studies reported that PTSD rates in developed countries (Carr et al., 1997; Carr et al., 1995; Mcmillen, North & Smith, 2000) were relatively smaller than the rates in studies carried out in developing countries (Karancı & Rüstemli, 1995; Lima et al., 1989; Wang et al., 2000). Higher PTSD rates in the developing countries may be the result of large scale destruction. In a recently published study (Sümer, Karancı, Berument, & Güneş, 2005), it was reported that personal resources, earthquake experiences, coping self efficacy, and gender have direct effects on intrusion and general distress among earthquake survivors aged between 18 and 69.

To conclude, the adaptive role of resilience has been mostly studied with children and adolescence in adversity, such as poverty, parental mental illness, ethnicity and race. However, the researchers have overlooked the adaptive role of resilience in disasters studies. Agaibi and Wilson (2005) mentioned that resilience studies have been shifting from chronic adversity to traumatic events. Recent definitions of resilience now mention a trauma dimension (e.g. Bonnano, 2004; Newman, 2005). However, the association between resilience and adapting to disaster situation has not been explored by the researchers. The existing research addressed resilience after certain negative life experiences such as abortion (Major et al., 1998), war (King et al., 1998), terrorist attacks (Frederickson et al., 2003), sexual abuse (Spaccarelli, & Kim, 1995) maltreated children

(Kinard, 1998), loss and chronic grief (Bonanno et al., 2002); community violence (Howard, 1996), drug addiction (Johnson, Glassman, Fiks, & Rosen, 1989). There appears to be no research that directly investigates the role of personal resources contributing to adult resilience among earthquake survivors has been met in the literature.

It can also be concluded that although Turkish researchers, like their counterparts in Western cultures, investigated the adverse effects of earthquakes and the resulting PTSD symptom vigorously, resilience after the earthquakes has not yet received the attention it deserves. It may be that Turkish researchers became too occupied in dealing with the severe traumatic reactions occurring after the earthquakes and overlooked role of personal resources in bouncing back to normal life.

The individuals who were exposed to natural disasters may suffer from psychological problems to some extent. However, some individuals display more effective coping and better adjustment to the adverse conditions caused by the disasters. Resilience may help individuals deal with disaster effects more efficiently. There might be some external factors and internal resources positively affecting those individuals' adaptation. Resilience in the face the natural disasters might be a significant buffering mechanism that mediates severe psychological problems.

1.6 Purpose of the Study

Resilience is a crucial factor for adjustment following a trauma. It is an ability to overcome high loads of stressful events such as disasters, trauma, death or loss (Agaibi & Wilson, 2005). Resilience is a relatively new research area, which has been rarely studied in Turkey, and no study that investigates resilience after a natural disaster has been encountered in Turkish literature.

Many studies showed that being exposed to a natural disaster leads to aversive psychological impacts on survivors (Başoğlu et al., 2002; Benight & Harper; 2002; Dudley-Grant, Mendez & Zinn, 2000; Najarian, Goenjian, Pelcovitz, Mandel & Najarian,

2001; Norris, Perilla, Riad, Krzystof, & Lavizzo, 1999; Norris, et. al., 2002a; Norris et al., 2002b). As previously mentioned, no study was carried out investigating the resilience among the earthquake survivors. The present study is designed to fill this gap in the literature. Thus, the purpose of this study is to explain resilience by assessing the relationships among affective and cognitive variables that may affect the resilience among natural disaster survivors. The present research particularly aimed at generating a theoretical model that may shed a light on the personal qualities, contributing to resilience among the Turkish earthquake survivors.

1.7 Theoretical Model Accounting for Resilience

It has been argued by constructivists that human beings create their own reality through their interpretations based on their mental constructs composed of past experiences and individual differences (Mahoney, 1995b). They reflect their subjective reality when either constructive or deconstructive meaning is given to traumatic experiences. Based on their existing mental constructs, they actively produce emotive reactions and behaviors. Traumatic events like natural disasters elicit affective, cognitive and behavioral reactions as individuals' attempts to understand and cope with the traumatic event. Therefore, in case of a sudden earthquake existing cognitive constructs affect the process of eliciting emotions resulting from a stressor. There might be some individual variations in responses to traumatic events. That is to say, cognitive personal qualities result in affective responses and in turn the cognitive – affective process influences the individuals' general adjustment level.

The cognitive behavior approach holds the idea that thoughts are the determinants of functional and dysfunctional emotions and behaviors, which is psychological mental health (e.g. Beck, 1976; Ellis, 1994; Lazarus, 1991). Although most Cognitive Behavioral Therapies (CBT) emphasizes the link between thoughts and emotions, Rational Emotive Behavior Therapy (REBT) specifically assumes that cognitions elicit functional or dysfunctional emotions depending upon the quality of those cognitions. Irrational beliefs and dysfunctional beliefs are reflections of dysfunctional cognitions (Dryden & Ellis,

1988; Ellis, 1994). It is important to note that there is a significant and reciprocal cause-effect relationship among cognitions, emotions and behaviors; REBT constantly underlines the interaction between these three modalities which contributes to the emotional and behavioral disturbance (Corey, 2001). Similarly, Seligman (1995) states that happiness is determined by how we interpret what happened rather than what happened to us. Emotions are the products of belief system, cognitive appraisals, and interpretations; in short, cognitive process.

In the present investigation, it has been hypothesized that cognitive and affective personal qualities might link to psychological resilience while they interact with each other. Similar to the ABC Model is the essence of REBT. In the theory, a theoretical model based on the interaction between cognitive and affective dimensions of human beings is hypothesized in the present study. Basically, the model is based on the main assertion of REBT; that is cognitive constructs are influential in experiencing emotions and life satisfaction. It is assumed that cognitive appraisals and affective responses would explain significant amount of variance of resilience among individuals with traumatic history.

In the theoretical model, self esteem is treated as a major variable and global self esteem serve as an underlying mechanism that helps to human operate well on the environment. The notion of social identity theory, proposing that people do strive to sustain and increase their self-esteem (Tajfel & Turner, 1986) accords well with the assumption of the present study. On the basis of this assertion, self esteem develops as a result of early interactions with significant others in critical incidents. The positive influence of global self esteem can be observed in cognitive process and affective domain in individuals. The person develops some consistent favorable life goals that eventually reinforce self esteem and related pathways. Simultaneously a person also develops an optimistic worldview based on the global self esteem. That is to say, self esteem leads a person to construe positive cognitive constructs influencing the general world of view positively and utilize those cognitive constructs while creating meanings for critical life events. Since thinking patterns influence the affective side of the person, if the person utilizes positive cognitive

constructs while interpreting life events, he or she is likely to experience more positive feelings and to be satisfied with life at the same time.

In the hypothesized model, CBT is used as a core theoretical background with a positive view of human beings. The model focuses on the strengths of individuals within the framework of positive psychology. All the constructs used in the theoretical model celebrate the human capacity. Primarily, based on the idea that self esteem and resilience are two essential constructs enriching human functioning, it is assumed that these two constructs might be indirectly connected to each other through other mediator variables representing the cognitive-affective link in the person.

There is a evidence that individuals engage in a cognitive appraisal process whereby they relate the importance of event to their psychological health (Lazarus & Folkman, 1984). As a result of this cognitive evaluative process, people generate emotions. According to Lazarus, “the cognitive process whereby emotion is generated” (Lazarus, 1991, p. 357). Lazarus established a strong connection between emotions and cognitions. He stated that “Emotions are the product of reason in that they flow from how we appraise what is happening in our lives. In effect, the way we evaluate an event determines how we react emotionally. This is what it means to speak of the cognitive mediation” (Lazarus, 1999, p. 87). The present model based on the link between cognitive and affective variables.

Self esteem which is based on personal values system and standards (Coopersmith, 1967) is a critical concept to all social scientists such as developmental psychologist, clinicians or educators. Since self esteem is the overall cognitive evaluation of self-worth along with the associated feelings (Fox, 1998), its positive and negative effects can be seen in different life domains. Striving for high self esteem is a universal human need that individuals pervasively attempt to meet (Maslow, 1968; Rogers, 1961; Rosenberg, 1979; Solomon, Greenberg, & Pyszczynski, 1991). It is a superordinate construct (e.g., Maïano, Ninot & Bilard, 2004) that underlies many psychological mechanisms. The association between distress level and potential psychopathology is buffered by some personality characteristics such as self-esteem and optimism (Cozarelli, 1993); he also valued the

significant association between positive affect and optimism. Those personal qualities influence the experienced level of stress and adaptive functioning through direct and indirect mechanisms. Furthermore, the buffering role of self esteem in stressful life events was shown in previous studies (e.g., Cozzarelli., Karrasch, Sumer, & Major, 1994). That's why; self esteem has been identified as the starting point influencing other cognitive and affective constructs in the model while explaining resilience.

The model also hypothesizes that self esteem and resilience are indirectly associated. Being resilient is the indicator of good psychological functioning and adaptive behavior (Letzring, Block, & Funder, 2004). In a similar way, high self esteem is a pervasive strength in human motivation that is generally adaptive and associated with extensive positive outcomes (Pyszczynski et al., 2004). These constructs are two vital mechanisms that activate the human capacity for functioning effectively and producing positive outcomes during crisis situations, traumatic events, or risky life conditions. In the hypothesized model, self esteem, hope, optimism, positive affect and life satisfaction were used in order to explain the construct of psychological resilience.

As previously mentioned, self esteem is taken as a starting point associating with hope and optimism, which are cognitive constructs. When generating the model, it is rationalized that optimism and hope are cognitive constructs describing cognitive dimension of personality whereas positive affect and life satisfaction are more general formulations which might be influenced easily by many other reasons and they might reflect only a specific period of one's life. Furthermore, positive affect might be seen as a part of the affective component. It differs from cognitive constructs and it is expected to be influenced by cognitions. Concerning life satisfaction, although it is defined as a cognitive part of subjective well-being, the items in the Satisfaction with Life Scale are related to general pleasure or gratification in one's life. Therefore, it can be concluded that it is somewhat different from optimism and hope by nature. Accordingly, it is hypothesized that self esteem has an indirect effect on resilience following through mediator variables. The model particularly asserts that self esteem a superordinate construct directly influencing the cognitive variables, optimism and hope. In turn those

cognitive variables have direct effects on affective variables, positive affect and life satisfaction. As a result, the entire relational pattern between self esteem, optimism, hope and positive affect and life satisfaction may explain resilience among natural disaster survivors. Such a model also proposes psychological resilience has a strong dispositional base. This theoretical model as presented in Figure 1.2 was not generated or tested with empirical rationale only. Theoretical justifications mentioned above were the main guidelines when generating the model. The presented hypothesized model accounting for psychological resilience will be tested in the scope of the study.

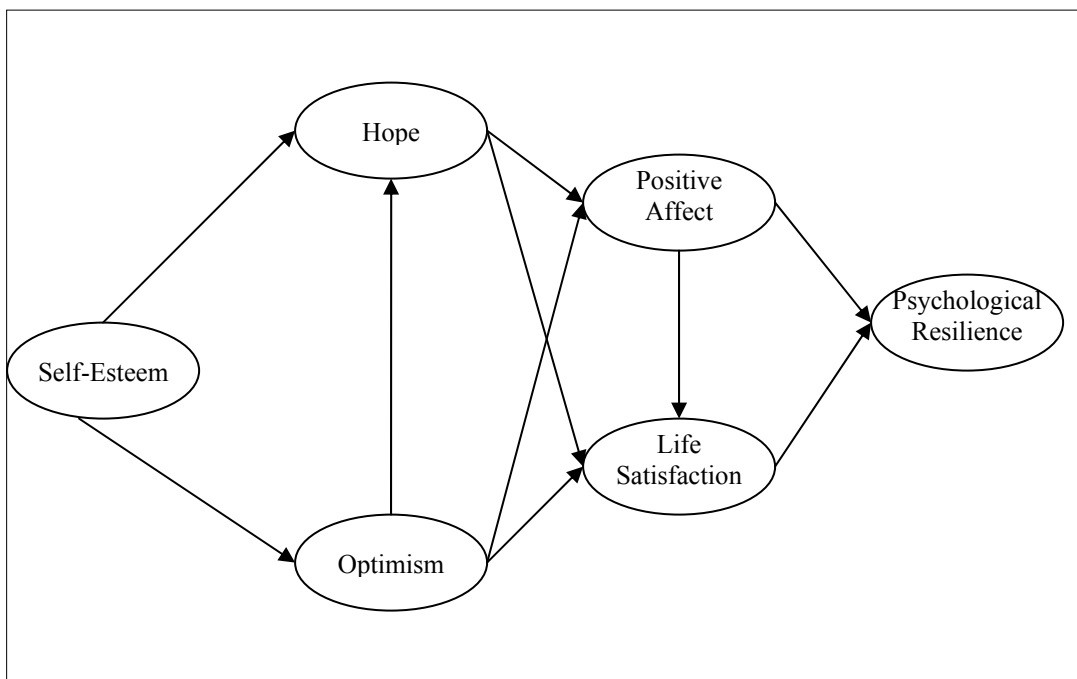


Figure 1.2. The hypothesized structural model

1.8 Research Question

The present research will seek answer for the following research question:

- How well the generated theoretical model account for the psychological resilience with regard to personal qualities?

The present study hypothesized that the dispositional cognitive and affective constructs (*hope, optimism, life satisfaction, self esteem and positive affect*) play elemental roles in pathways to *psychological resilience*. The present study also explored the relationship patterns among independent latent variables that affect resilience by assessing the relationships among cognitive and affective constructs.

1.9 Definitions of Terms

Psychological resilience: Psychological resilience is defined as a multidimensional concept regulating the adequacy of responses to normal and severe stressors including trauma (Block & Kremen, 1996).

Optimism: Optimism is defined as the cognitive disposition leading to favorable outcomes in one's life (Scheier & Carver, 1985).

Hope: Hope theory assumes (Snyder et al., 1991a) describes hope is a cognitive set based on two interrelated cognitive components: agency and pathways. The agency component refers to the person's perceived cognitive ability to initiate and maintain motivational movement toward a goal, whereas pathways refers to the perceived cognitive ability to produce effective ways to attain goals.

Life satisfaction: It reflects a global evaluation or judgment of one's satisfaction with his or her life (Diener, 1984).

Positive affect: In broaden and build theory suggested by Fredrickson (2001) assumes that positive emotions build enduring personal resources; relying on this theoretical model positive Affect reflects the level of emotional-well being in individuals (Watson, Clark, & Tellegen, 1988).

Self-esteem: Self-esteem is defined as the sense of self-respect, worthiness, and adequacy (Rosenberg, 1979).

1.10 Significance of the Study

Resilience is most often viewed as an indicator of good adjustment following adversity such as traumatic events. Resilience is a concept that has emerged from the positive psychology trend and focuses on positive attributes and strengths

A number of positive constructs have been introduced in the positive psychology literature to explain the capacity of some individuals to adapt to negative life circumstances and to maintain a positive outlook. Optimism (Carver & Scheier, 2001), sense of coherence (Antonovsky, 1993), hope (Snyder et al., 1991; Snyder, 2000b), and hardiness (Maddi & Kobasa, 1991) all refer to general traits that are correlated with general psychological well-being and promote positive feelings, thought and behaviors during adverse life events. Such personality characteristics are believed to affect resilience process and help people to function in a healthy way when recovering from negative situations and adapting to new conditions.

The strongest dimension of positive psychology is that measurable human strengths serve as buffers and those strengths help individuals to adapt stressful life events (Masten & Coatsworth, 1998). Consequently, increased interest has been directed to investigating positive qualities of individuals. Within this framework hope, optimism, self esteem, life satisfaction and positive affect can be listed as underlying constructs contributing to psychological resilience.

The significance of the study resides in providing preliminary information about the role of personal qualities promoting resilience within a theoretical model for the natural disaster survivors in Turkish culture. In this study, a theoretical model based on personal qualities identified from the literature was proposed to explain resilience among earthquake survivors in Turkish culture. The resilience model tested in this study will also contribute to the development of resilience model in the long-run.

Resilience studies are somewhat scarce in the literature. Since most of the studies in the related literature have a developmental focus, resilience in adults has been waiting for to be more fully investigated. Resilience studies have been shifting from childhood resilience to adult resilience in the face of trauma (Bonanno, 2004). Resilience might be a crucial factor for adulthood adjustment following a trauma. Internal causality of resilience in adults was the core of the present study. The results of the present study

would enrich the empirical resilience findings both in Turkish literature and world literature. The findings will contribute to further understanding of resiliency characteristics in Turkish culture specifically, however; it also will provide general guidelines for adult resilience from a broader perspective.

In the last century, more than 25 large-scale earthquakes occurred in Turkey such as Erzincan Earthquake in 1939 with a magnitude 7.9; this quake resulted in extensive casualties such as great number of death toll and large-scale economical damage. Earthquakes are never-ending reality in Turkey. Since resilience emerges in the face of adversity earthquake survivors were selected for investigation in this study.

Since natural disasters are not going to cease in a country like Turkey with a high risk of recurrent earthquakes, experts and helping professionals need empirical data to understand the qualities that contribute to becoming more resilient in the face of the traumatic events. Scientific information on long-term adjustment will be the facilitator in prevention efforts and intervention strategies. Developmentally and culturally relevant intervention strategies may be developed based on the findings of the present research. Empirical findings examining the personal resources that may help earthquake survivors better cope with traumatic events gain importance as the mitigation effort. The results of the study may give some clues about resilience when trying to alleviate the adverse effects of natural disasters in future.

The studies examining the psychological effects of earthquakes in the literature were primarily carried out in developed Western countries. Hence, the empirical findings mostly reflect the characteristics of Western people. The urgent need for more research in diverse cultures is obvious and the likelihood of observing severe adverse psychological effects of earthquakes is high. The significance of the present study lays in suggesting ways explaining resilience in adult earthquake survivors.

There is no study up to date in Turkey investigating the positive qualities leading to resilience in distressing life challenges like earthquakes. This study will be an initial

effort in adult resilience in Turkish literature. There is one doctoral study examining the resilience construct among Turkish children poverty. The comprehensive study adopting a developmental perspective was a great effort in understanding of external and internal protective factors contributing to academic resilience (Gizir, 2004).

Although the findings of this study are generated from earthquake survivors, the results might be applicable to other traumatic contexts to some degree. It is believed that resilience can be observed at any point of life course and its associations with other constructs should be investigated in detail.

In the current study, optimism, hope, life satisfaction, positive affect and life satisfaction are the personal qualities going toward psychological resilience. There is no study to date investigating the prospective roles of these personal qualities. In this respect, this study examining the direct and indirect relationship between personal qualities and resilience has originality and uniqueness.

The significance of the study also resides in adaptation of ego resilience scale into Turkish. The validity and reliability evidence for the scale was documented in the study. For future studies; it provides an alternative way to measure psychological resilience.

This model integrates a range of variables in a unified model. Up to date, the existing studies examined resilience with regard to limited variables. However, this study was an initial attempt to generate a model integrating a collection of variables within a structured schema. The model explaining psychological resilience using many variables set basis for additional research. The model may provide some clues for the future resilience studies.

1.11 Limitations of the Study

This study has some limitations that may impinge on the generalizability of the results and these limitations should be recognized when interpreting the results.

First, relatively small number ($N = 363$) of sample size is the most notable limitation in this study. However, the nature of the sample made it difficult to recruit a large sample. Seven years after the disaster, it was difficult to reach large number of participants in the earthquake affected region.

Second, the data were collected online which can be seen as a disadvantage. Availability of participants was limited to Internet users, which might be interpreted as biased sampling. One study (Gosling, Vazire, Srivastava & John, 2004) compared the data collected online with the data collected using traditional methods. Of importance, the authors concluded that online data showed diversity just like the data collected using traditional methods; another conclusion was that participants in online studies take the study seriously and provide accurate information like the participants in traditional studies. On the other hand, collecting data online reduces the error in data entry process, which might be seen as an advantage. Since the data were collected online, the participants themselves are the only decision makers when completing the questionnaire.

Third, there might be other psychological constructs contributing to resilience in general. This study is limited to hope, optimism, life satisfaction, positive affect and self-esteem. The results accounted for the relational resilience patterns only among personal qualities used in the study. The results of the study may provide some empirical guidelines only for psychological resilience. Only some internal factors that vary in individuals were taken into consideration.

Fourth, since the nature of the sample characteristic is being exposed to earthquake the sampling process was the most serious challenge of this study. Reaching the individuals who were in the earthquake area in 1999 was hard to manage. Although initial sampling plan was to collect the data from the students and adults separately and to compare those two groups it was not possible to reach enough number of college students. That's why, two groups of sample were combined. However, the student sample was quite younger than the adult sample. The age difference might be seen as a limitation of the present study.

Finally, since resilience is a concept that is difficult to measure other instruments should be used to quantify psychological resilience. Using alternative measures and determining the correlation between resilience scales could bring stronger evidence to the study in order to avoid measurement errors.

The absence of qualitative data might be seen as another limitation. Supporting the results with qualitative findings would be supplementary. However, in the scope of the present study only quantitative methods were utilized.

CHAPTER II

METHOD

The previous introductory chapter presented a literature based background for the purpose and significance of the study. In this section, the overall design of the study and methodological procedures covering sample selection, information about the psychometric properties of the measures, data collection and data analysis procedures are presented. In addition, the results of the confirmatory factor analyses employed to the measures are provided.

2.1 Population and Sample Selection

In the present research, the population was composed of those individuals who were exposed to earthquakes occurred in 1999 in Marmara region of Western Turkey. Kocaeli, Sakarya, Yalova, Bolu and Düzce were the most affected where the greatest destruction occurred. In these towns more than 18,000 people died, 49,000 people injured, 380,000 building damaged or destroyed (American Red Cross). Therefore, purposive sampling method was used and participation in the research was limited to being residents in Kocaeli, Adapazarı, Yalova, Düzce or Bolu where the greatest damage and loss of life occurred.

Three different samples were selected from the earthquake region in the present study:

- 1) An adult sample consisting of academicians, other university personnel and the people who reached the web-based survey. These data were collected online (235 participants)
- 2) A student sample comprised of METU students who were also exposed to earthquake in 1999. These data were also collected online. (67 participants)

3) Second adult sample composed of teachers in the secondary schools of Kocaeli region. These data were collected through paper-pencil administration. (61 participants).

A total of 408 participants were reached. Thirty eight cases were excluded from the data because the participants reported that they were not exposed to earthquake as they were out of the town during the disaster. In addition, one case who did not report gender was also omitted. After the deletion of inappropriate data, the total number of participants participated in the study was 370 (229 male, 140 female). The age of the participants ranged between 17 and 58, with a mean age of 33.33 and standard deviation of 9.65. Ten participants did not report their ages.

In order to detect extreme values in the data univariate and multivariate outlier check were carried out. No case with standardized scores in excess of 3.29 was found in the data (Tabachnick & Fidell, 2001). Alternatively, the histogram of dependent variable with normal curve was checked. Trimmed mean score (39.66) which is calculated by discarding a certain percentage of the lowest and the highest scores and then computing the mean of the remaining scores was so close to the mean (39.79). The Mahalanobis distance, which is a measure multivariate distance, was used to search for multivariate outliers. Seven cases exceeding the critical chi square value were detected and excluded from the data as potential multivariate outliers. The remaining sample size after outlier check was 363 (224 male, 138 female). There was one missing case regarding gender info. The mean age of the sample was 33.30 (SD = .517) and the age of the participants ranged between 17 and 58. The distribution of the sample regarding age variable is displayed in Figure 2.1.

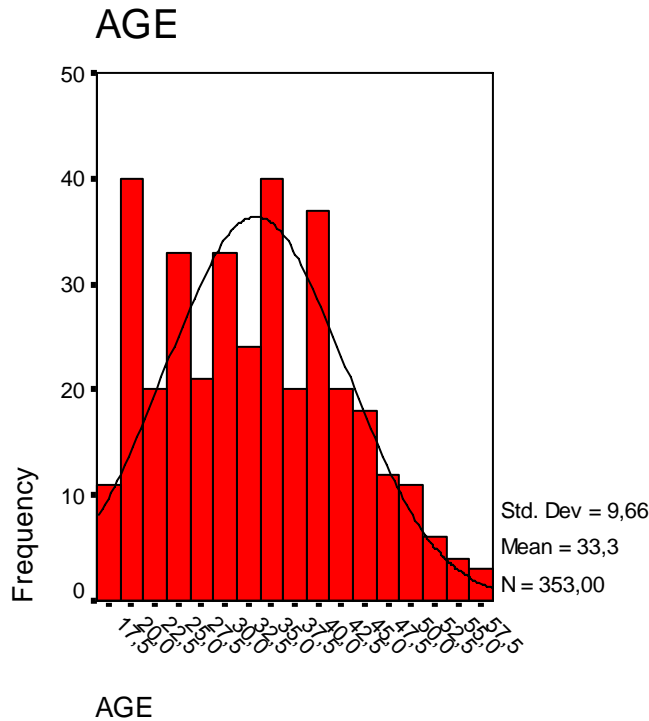


Figure 2.1 The distribution of the sample with respect to age

The participants took part in from different earthquake affected cities. The distribution of the sample with respect to the cities/districts can be seen in Table 2.1.

Table 2.1 The distribution of the sample with respect to the districts

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Kocaeli	175	48.2	48.2	48.2
	Adapazarı	98	27.0	27.0	75.2
	Yalova	22	6.1	6.1	81.3
	Düzce	35	9.6	9.6	90.9
	Bolu	33	9.1	9.1	100.0
	Total	363	100.0	100.0	

The participants were also asked about their educational background. Majority of the participants had college or graduate degree. Even less than 1% of them had primary school degree. 23% of had high school degree. The distribution of the sample with respect to the educational background is given in Table 2.2.

Table 2.2 The distribution of the sample with respect to educational background

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Primary	1	.3	.3	.3
	High school	84	23.1	23.1	23.4
	College	164	45.2	45.2	68.6
	Graduate	114	31.4	31.4	100.0
	Valid	363	100.0	100.0	

Personal details in the demographic part of the questionnaire that were asked to the participants in order to summarize the earthquake experiences of the participants as follows:

1. *Did your house collapsed because of the earthquake?*
2. *Were you under debris?*
3. *Was one of your family members under debris?*
4. *Did you loose any family members?*
5. *Did you live in tents?*
6. *Did you loose any friend?*

The sampling distributions with respect to the questions above are provided.

Table 2.3 Distribution of the sample with respect to earthquake experience

	Frequency	Percent	Valid Percentage
<i>Collapsing house</i>			
Yes	43	11.8	14.6
No	252	69.4	85.4
Total	295	81.3	100.0
Missing	68	18.7	
<i>Being under debris</i>			
Yes	12	3.3	4.1
No	283	78.0	95.9
Total	295	81.3	100.0
Missing	68	18.7	
<i>Family members under debris</i>			
Yes	49	13.5	16.6
No	246	67.8	83.4
Total	295	81.3	100.0
Missing	68	18.7	
<i>Lost of a family member</i>			
Yes	35	9.6	11.9
No	260	71.6	88.1
Total	295	81.3	100.0
Missing	68	18.7	
<i>Living in tents</i>			
Yes	220	60.6	74.6
No	75	20.7	25.4
Total	295	81.3	100.0
Missing	68	18.7	
<i>Lost of a friend</i>			
Yes	216	59.5	73.2
No	79	21.8	26.8
Total	295	81.3	100.0
Missing	68	18.7	

2.2 Procedures

The data collection procedure involves two consecutive phases in the current study. In the first phase, paper-pencil form of the questionnaire booklet was sent to the teachers working in Kocaeli state schools through school counselors. The participants used the scantron sheets provided to respond to the items in the questionnaire booklet. In the second phase, data were collected online through web-based survey covering all the measures used in the study. Useful email addresses in both governmental and private web sites and online discussion groups were searched for and the study was introduced by sending the standard e-mails. Self-responsibility and mitigation for future earthquakes were mentioned in the standard e-mails as the motivation sources. Web-based survey link was provided in those e-mails. Volunteer participants completed all the measures online and submitted it. The approximate duration for the completion of the instruments was about 20-25 minutes. Participation in the study was anonymous. All data were collected in the first half of 2006.

The details of data collection process were provided below. Data for the investigation were collected in three rounds as outlined below.

Round I

Initially, the researcher decided to collect data from Kocaeli and contacted Guidance Research Center in the town. All the measures used in the study were combined in a questionnaire booklet. Background and the purpose of the study were explained in the instruction of the booklet. Anonymity of the collected data was assured. Contact number and name of the researcher were provided in case of any question or uncomfortable situation that might happen during the data collection process. Through the help of Guidance Research Center the researcher contacted the school counselors individually and explained the purpose and the procedure of the study. School counselors were requested to reach the teachers who work in their school and experienced the earthquake. Three hundred and fifty questionnaires were distributed to the teachers. The return rate was rather low and only 89 of them were returned.

Round II

In the second round, in an attempt to increase the sample size, the researcher decided to collect online data. A web site that covers all the measures used in the study along with an instruction that explained the purpose of the study was constructed and activated. Simultaneously, the presidents of two universities (Kocaeli University and Sakarya University) were informed about the study and called for to send a standard e-mail to the personnel about the research. The example of the standard e-mail can be seen in Appendix A. In the e-mail, the background of the study, the contact info about the researcher, the web site covering the questionnaire were provided and was sent to the academic personnel in Kocaeli university and to both academic and administrative personnel in Sakarya University. The return rate of completed questionnaires was not enough to carry out the study. Additional alternative ways were attempted to collect data. The researcher searched for the official web sites of governmental units such as Regional Chief Police Offices, Directorates of the Regional Educational Councils, Directorates of the Regional Health Councils, Municipalities in the Marmara Region, Governorships of the Marmara Region and its districts, directorate of the regional finance and tax offices. In addition, private companies, online societies, discussion groups, e-forums, and chambers of industry, Regional Bodies of the Lawyers, Regional Bodies of Medical doctors, local press associations and radio stations in those towns were searched to increase the number of participants in the study. The standard e-mail was sent to abundant e-mail addresses obtained from the active governmental and non governmental web sites mentioned above.

Round III

Concurrently, the list of e-mail addresses of the students in METU whose hometown is Kocaeli, Adapazarı, Yalova, Bolu, or Düzce was gathered from Computer Center in METU in the third round. There were 524 students in the list and another standard e-mail similar to a consent form was prepared for the students (see Appendix B). In this e-mail, the students were informed about the study and told to reply the e-mail if they were willing to participate in the study. They would be free to ask any question about the study. They were also told that if they decide to participate in the study,

they will receive another e-mail (see Appendix C) that includes the link where the questionnaire can be found. The web link was not provided in the first e-mail because the researcher would like to find out approximately how many students could be reached.

2.3 Overall Design of the Study

This study is designed to investigate the relationships among affective and cognitive personal qualities leading to resilience among natural disaster survivors. This was a survey study designed to evaluate a potential theoretical model for adult resilience. A hypothesized model based on related literature was specified and tested. Indirect and direct relationships among the variables affecting resilience were explored. The variables selected from the literature review were both affective and cognitive constructs relating to adaptive function in the face of trauma or adversity.

The variable representing the affective domain was *positive affect* and cognitive variables were *dispositional hope*, *optimism* and *life satisfaction*. *Self-esteem* was another essential predictor for both affective and cognitive personal qualities affecting resilience. *Dispositional hope*, *optimism*, *positive affect*, *life satisfaction* and *self-esteem* were regarded as independent latent variables while *psychological resilience* was valued as the only latent dependent variable. Thus, the design of the study is proposing and testing a structural model accounting for the pathways to resilient personality. Some demographic questions and certain questions related to earthquake experience were also asked to the participants to describe the general profile of the sample.

In the present study, *Model generating approach* (Jöreskog & Sörbom, 1993) was suitable to describe the model testing process in the present study. The tentative model is not the only solution in the population; it could be an alternative solution. A priori initial model based on theoretical associations with latent variables was specified and tested and then model-trimming method was used to modify the model. Confirmatory factor analyses were carried out to confirm the constructs used in the

structural equation model before model generating. In addition, the current study aimed at exploring the plausible relational pattern among multiple latent independent variables each of which measured by multiple indicators and outcome variables that were represented by multiple indicators.

2.4 Data Analyses

Structural Equation Model was run in order to test the validity of the theoretically hypothesized model and measurement models for dependent and independent variables by utilizing LISREL (Linear Structural Relations Statistics Package Program) 8.3 for Windows (Jöreskog & Sörbom, 1999). The structural equation modeling process includes two main steps: validating the measurement model and testing the fitness of the structural model.

Structural Equation Modeling

(SEM) Structural equation modeling is a powerful statistical technique for analyzing data that are designed to assess relationships among both directly measured variables and latent (i.e., the underlying hypothetical constructs) variables. In SEM, each latent variable is represented by multiple measured variables that serve as the indicators of the construct (Jöreskog & Sörbom, 1993).

SEM is used for confirmatory procedures rather than exploratory procedures. It is a powerful and comprehensive alternative way to generate measurement models taking the interactions into accounts, with measurement errors among multiple latent dependent and independent variables. However, a strikingly important rule is the theoretical insight and justifications of the researcher in the model generating process. SEM-based procedures have considerable advantages over other statistical techniques since it gives more flexibility to the researcher to explore the interaction between theoretical specifications and obtained data. The researcher has the opportunity to propose alternative models specifying the direct or indirect relationships among predictor, moderator and criterion variables (MacCallum, 1986).

The purpose of a model is to account for the variation and covariation of measured variables. Covariance matrix of measured variables such as item scores or factor scores is used to analyze. The specified model assesses the hypothesized relationship pattern among measured and latent variables. The results cover overall indexes of model fit as well as parameter estimates, standard errors, and test statistics for each free parameter in the model.



Briefly, a structural equation model is a hypothesized pattern of direct and indirect linear relationships among a set of measured variables and latent variables (MacCallum & Austin, 2000).

Model Identification

Structural equation models are used to evaluate models in three ways: (1) *strictly confirmatory*: A model is tested using SEM goodness-of-fit tests to determine if the pattern of variances and covariances in the data is consistent with a structural model specified by the researcher. However as other unexamined models may fit the data as well or better, an accepted model is only a not-disconfirmed model; (2) *Alternative models*: two or more structural models to determine which has the best fit are tested; and (3) *Model development*: A specified tentative model has been taken as an original model, which is the most common approach (Jöreskog, 1993). In the event that the original model has not showed reasonable fit to the data, the model needs to be modified and tested again. *Model development approach* was followed in the present study. In the applications of SEM, confirmatory and exploratory purposes are combined: a model is tested using SEM procedures and found to be unacceptable, and an alternative model is then tested based on modification indexes suggested by SEM. This is the most common approach found in the literature. The problem with

the model development approach is that models confirmed in this manner are post-hoc ones which may not be generalized to other data.

Several important suggestions that can lead to more successful specification search in SEM have been mentioned (MacCallum, 1986; MacCallum, Roznowski & Necowitz, 1992; Silvia & MacCallum, 1988) such as: carefully specifying the initial model, gathering a large sample, applying theoretically guided modifications, continuing search for better models even after a model with a non-significant (χ^2) has been obtained, and focusing only on a pre-specified set of fixed parameters that are considered substantively meaningful. Two common approaches for model modification in SEM involve reducing or increasing constraints in the model being tested (Chou and Bentler, 1990). Theory-trimming (Pedhazur, 1982) which is a familiar practice which implies deleting the non-significant paths or adding free parameters in model generating (Kelloway, 1998).

Sample size adequacy

An important issue in research design involves the determination of the sample size necessary to achieve adequate power for hypothesis testing. Sample size should not be small as SEM relies on tests which are sensitive to sample size as well as to the magnitude of differences in covariance matrices and estimated parameters. SEM like factor analysis requires sufficiently large samples to compute residual based statistics. The rule of thumb for sample size in factor analysis which is at least 300 cases can be appropriate to SEM applications (Tabachnick & Fidell, 2001). However it is more useful to think how many participants per estimated parameter when applying SEM. Boomsma (1983) stated that sample size around 200 is reasonable for small to medium models. There was no missing data regarding observed and latent variables.

Boomsma (1983) recommends a sample size of approximately 200 cases for moderately complex models. Bentler and Chou (1987) suggested more strict

guidelines for the required sample size that the ratio of sample size to estimated parameters would be between 5:1 and 10:1.

Another rule of thumb found in the literature suggested by Tabachnick and Fidell, (2001) is that sample size should be at least 50 more than 8 times the number of dependent variables in the model. Another sample size criterion requires having at least 15 cases per measured variable or indicator (Stevens, 1996). At least 5 cases per estimated parameter (including error terms as well as path coefficients) is also generally well-known sample size criterion in the literature (Bentler & Chou, 1987) recommend. The sample size of the present study met all the criteria given above.

Assessing the Fit of the Model: Goodness of fit statistics

Goodness of fit measures is used to determine the model being tested is rejected or accepted. In order to confirm a model using SEM requires that all the paths in the model should be significant. If the model is accepted, path coefficients in the model are interpreted. According to Kline (1998), standardized path coefficients with values more than .50 can be described as large effects; values around .30 are has medium effects; and path coefficients with less than .10 show small effect.

Structural equation modeling has no single test that best describes the strength of a specified model. Several researchers determined various set of indicators for a good fit. There are dozens of fit indexes that have been used and continually refined. For instance, Kline (1998) suggests reporting at least four tests, such as chi-square, Goodness of fit index (GFI), Normed fit index (NFI) or Comparative Index (CFI); Non-Normed fit index (NNFI) and Standardized root mean square residual, (SRMR).

In reference to the model fit assessing, there is an incongruity among fit indexes to report in the studies SEM utilized. Goodness of fit Index (GFI), which is the ratio of (Jöresborg & Sörbom, 1989) was not taken as assessing criteria because it is not generally recommended in a recent review of literature study (Schreiber, Stage, King, Nora, Barlow, 2006). In the same vein, in an earlier study (cited in Steiger,

1990) it was mentioned that GFI which is the ratio of variance accounted for in the sample covariance matrix by the estimated population covariance matrix and the adjusted GFI (AGFI) computed by LISREL can be seriously biased. In this study, following goodness of fit measures are taken into account in assessing model fit:

The ratio between chi-square and degrees of freedom

The chi square is evaluated with degrees of freedom equal to the differentiation between total number of degrees of freedom and the number of estimated parameters (Tabachnick & Fidell, 2001). Smaller chi-square values that exceed the .05 probability level are deemed as acceptable. That is to say, a good fit is displayed by non-significant chi square value. However, the chi square statistic is sensitive to sample size and number of categories of the response variables (Bentler & Bonett, 1980; Tabachnick & Fidell, 2001); with small samples inaccurate probability levels may result since the computed χ^2 may not show the distribution of χ^2 (Tabachnick & Fidell, 2001). If the χ^2 value is significant, the model will be rejected as not showing good fit with the data.

Due to the nature of χ^2 statistics which incline to increase when the sample size increases especially over 200 cases (Schumacker & Lomax, 1996), the normed chi square adjusted according to degrees of freedom is a well-defined rule of thumb. The ratio between χ^2 / df should be 1 and 3 or less than 3 for a good fitting model (Carmines & McIver, 1981; Kline 1998). Klem (2000) suggested more flexible criteria for the ratio of χ^2 to df , which the ratio value of less than 5 is considered as a satisfactory indicative for a good fit.

Root mean square error of approximation (RMSEA)

RMSEA which is based on the analysis of residuals was developed by Steiger (1990). RMSEA with smaller values indicating better fit to the data. It assesses the amount of model misfit, and values under .05 are considered to be indicative of very good fitting models (Fan & Wang, 1998). RMSEA is sensitive to the misspecification of the factor loadings; if both indices did indicate good fit, the latent

variables and measurement model would be considered well- specified (Linden et al., 2006). Similarly, Browne and Cudeck (1993) suggested that a value for the *RMSEA* of .05 or lower would indicate a good fit of the model and a value of about .08 or lower would indicate a reasonable error of approximation.

Standardized root mean square residual, Standardized RMR (SRMR)

The smaller the standardized RMR, the better the model fit. SRMR is the average discrepancy between the hypothesized and observed variances and covariances in the model, based on standardized residuals. *Standardized residuals* are fitted residuals divided by the standard error of the residual. SRMR values ranges from 0 to 1 and it is 0 when model fit is perfect. SRMR values of .08 or less indicates a good fitting model (Hu & Bentler, 1999), however Kelloway (1998) suggested that values less than 0.05 are favorable.

Comparative fit index (CFI)

The comparative fit index (CFI, Bentler, 1990) compares the hypothesized model against an independence model and is ranged between 0 and 1. Values above .90 are generally indicators of good fitting models. Traditionally, values of .90 or greater are interpreted as evidence of models that fit well. However, the more recent literature suggests that better fitting models produce CFI values around .95 (Hu & Bentler, 1999). CFI also avoids underestimation of fit from sampling variability associated with other fit indices.

Normed Fit Index (NFI)

The NFI developed by Bentler and Bonett (1980) assesses the estimated model by comparing the χ^2 value of the model to the χ^2 value of the independence model (Tabachnick & Fidell, 2001). That is to say, NFI reflects the proportion by which the researcher's model improves fit compared to the null model (random variables (Bentler & Bonett, 1980). NFI has a fit index between 0 and 1 range. High values (usually greater than .90) are valued as acceptable good fitting model. NFI may underestimate fit for small samples, according to Ullman (2001).

Non-Normed fit index (NNFI)

The non-normed fit index (Bentler & Bonett, 1980) also called the Bentler-Bonett *non-normed fit index* is the same with the *Tucker-Lewis Index, (TLI)*. NNFI is similar to NFI, but penalizes for model complexity. NFI is not guaranteed to vary from 0 to 1. NNFI values can be less than zero or more than one (Kelloway, 1998). It is one of the fit indexes less affected by sample size. If the NNFI value was below .90, one would need to re-specify the model. Some authors have used the more liberal cutoff of .80 since TLI tends to run lower than GFI. However, more recently, Hu and Bentler (1999) have suggested $NNFI \geq .95$ as the cutoff for a good model fit.

Our criteria when deciding on the goodness of fit indices to report, based on the suggestions in previous studies. We tried to select the indicators least affected by sample size and most recommended ones. CFI and RMSEA are among the measures least affected by sample size (Fan, Thompson, & Wang, 1999). Hu and Bentler (1999) suggested following indices for continuous data to evaluate the goodness of fit: $RMSEA < .06$, $NFI > .95$, $CFI > .95$ and $SRMR < .08$. Consistent with recommended goodness of fit indices made by Hu and Bentler (1999), normed chi-square and NNFI were added to the goodness of fit measures in order to assess the measurement models and the structural model.

Computer Programming for SEM

LISREL 8.30 for windows with SIMPLIS Command Language was used for the syntaxes that govern the formulations and the relationships among latent variables and outcome variable. Maximum Likelihood Model (ML) was used in all LISREL applications because the data was distributed normally. For all the statistical procedures carried out, the level of significance was set as .05

In the present study, as recommended by MacCallum and Austin (2000), Martens (2005) and McDonald and Ho (2002) multiple theoretically derived models were identified. When conducting SEM, there might be more than one model explaining the possible relationship pattern or theory. In order to avoid confirmation biases that

may occur with testing only one model, initially three hypothesized models (Figure 2.1, 2.2 and 2.3) were undertaken and other alternative models for obtaining a better model using model trimming method was tested. Although there is strong evidence indicating that those variables are strong correlates of resilience in the literature, there is no widely accepted theory which accounts solely for the resilience construct. Since there is no well-built theoretical rationale for testing a solid resilience model, testing alternative models and taking the model generating steps seem more meaningful toward theory construction. However, the relational patterns among variables were attempted to be explored under theoretical justifications to be able to explain and interpret the associations in the model.

Steps in Data Analysis

The consecutive steps involved in data analysis were as follows:

1. Test of normality of the distribution of the data was checked using SPSS 13.0. The raw score was calculated as standardized scores and the normal distribution of the data was checked with normal Q-Q plots histogram.
2. Descriptive statistics regarding sample characteristics were performed.
3. As preliminary analysis, correlations among dependent and independent variables were calculated in order to get a possible guideline signaling the relationships among variables.
4. The possibility of the multicollinearity among highly correlated variables was checked.
5. A series of exploratory factor analyses (EFA) were conducted using SPSS 13.0 to decide to observed variables in the measurement models and the specified theoretical model.
6. A series of confirmatory factor analyses were conducted to verify the factors obtained through EFA using LISREL 8.3.
7. A structural equation model was tested in order to decide how well the generated model fit to the data using LISREL 8.3.

The specified theoretical model presented in the first chapter was tested to account for psychological resilience in the scope of the current study. As mentioned before, the hypothesized model was specified according to theoretical justifications explained in the first chapter in detail. Identified latent variables for measurement models were *Psychological Resilience*, *Optimism*, *Pathways* and *Agentic Thinking* representing dispositional hope, *General*, *Life Satisfaction*, *Positive Affect* and *Self-Esteem*. The indicators pointing out the latent variables in the structural model was explained in the following section.

2.5 Measures and Measurement Models for the Latent Variables

A set of measures for the variables used in the study was combined in a questionnaire booklet. The Turkish forms of all the measures can be seen in Appendix D. The detailed information about the psychometric properties of the measures is provided below along with the evidence for the construct validity of each scale.

Matching with the idea of confirming the research results obtained through exploratory procedures (Jöreskog & Sörbom, 1993) an analogous strategy was put into practice. In this section, first of all, while discovering distinct factors turning into latent variables in confirmatory factor analyses Principal Component Analyses with varimax rotation using Kaiser Normalization on scales were run for dependent and independent variables. Comrey and Lee (1992) set criteria for interpreting factors: loadings greater than .71 are excellent; loadings around .63 are very good; loadings around .55 are good; and loadings less than .32 are poor. Although only items with loadings higher than .32 should be interpreted (Tabachnick & Fidell, 2001), the researcher set a more strict criterion and only items that had factor loadings above .40 taken into account. Successively, confirmatory factor analyses in which measured variables were taken as latent variables and evaluated by their factors were performed. In all measurement models, first order confirmatory factor analysis was employed. In the following section, each measure used in the study was explained in detail and subsequently the results of exploratory factor analysis and

confirmatory factor analysis for each variable were provided. Additionally, the latent variables in the structural model were formulated.

2.5.1 Measure of Psychological Resilience

The Ego-Resiliency Scale that was developed by J. Block and Kremen (1996) was utilized to quantify psychological resilience. The scale consists of 14 items and it is Likert type scale with 4-point ranging from 1 (*does not apply at all*) to 4 (*applies very strongly*). The original sample was composed of 95 participants at age 18 and 23. The coefficient alpha reliability of the scale reported by Block and Kremen was .76. The cross-time correlations (five years) were .51 for the female sample and .39 for the male sample but when adjusted for the attenuation effect, they changed to .67 and .51 for the female and male samples respectively. No factor analysis was carried out in the original study.

Psychological Resilience measured by Ego-Resilience Scale was treated as a latent construct in the present study. In adapting the original scale to Turkish first the scale was translated into Turkish by four experts: an English Language Teaching instructor who holds a master degree, working at a private university in Turkey; a graduate student who has been pursuing in her PhD in multilingual and multicultural education, focusing on teaching English as a second language in a Southern state university in the US; a graduate who has a master degree in English literature; a counselor who has a PhD. degree in counseling from an English-medium university in Turkey and spent almost one year in the US as a visiting scholar in an American university. Subsequently, the best combination of the five different translations was selected by the researcher. Two more judges evaluated and agreed on the appropriateness of the translation: a faculty in an English medium university in Turkey and a PhD student in multilingual and multicultural education in the US, also experienced in teaching English as a foreign language. Final form of the Turkish version of the scale was administered to the participants.

Exploratory and confirmatory factor analyses were run in order to explore the factorial structure of the scale in a Turkish sample of earthquake survivors.

2.3.1.1 Principal Component Analysis for Ego Resilience Scale

In order for providing evidence of the construct validity and gathering independent factors to use in the further structural model, 14 items of Ego-Resiliency (ER) scale were subjected to principal component analysis (PCA) with varimax rotation using Kaiser Normalization through SPSS 13.0. The results revealed three factors with eigen values exceeding 1, accounting for 47, 63 percent of the total variance. The first, second and the third factors accounted for the 29 percent, 11 percent and 7 percent of the variance, respectively. Viewing Catell's scree plot test (1966), three factors were also apparent. The results of the factor analysis are displayed in Table 2.4.

Table 2.4 Loadings and communalities of the factor analysis of ER scores

	Communalities	Components		
		1	2	3
1. Personal strenghts relating recovery (ER1)				
02. Item 02	.644	.734	.318	.058
14. Item 14	.408	.695	-.059	.207
13. Item 13	.594	.648	.414	.050
10. Item 10	.209	.447	.082	.042
2. Positive Self-appraisals (ER2)				
09. Item 09	.422	-.147	.605	.185
06. Item 06	.457	.239	.593	.220
12. Item 12	.420	.304	.564	.097
01. Item 01	.345	.240	.535	-.035
04. Item 04	.530	.402	.488	.093
3. Openness to new experience (ER3)				
07. Item 07	.583	.121	-.064	.751
08. Item 08	.486	.181	.050	.671
11. Item 11	.632	.106	.463	.638
05. Item 05	.437	-.228	.329	.526
03. Item 03	.503	.393	.298	.510

In order to get additional validity evidence for ER scale for Turkish participants, concurrent and divergent validity were also investigated. As aforementioned resilience appeared to be highly correlated with self esteem (Benetti & Kambouropoulos, 2006) and positive and negative emotions (Fredrickson et al., 2003; Tugade, & Frederickson, 2004). Thus, Positive and Negative Affect Schedule (PANAS) (Watson et al., 1988) and Self Esteem Scale (Rosenberg, 1989; 1965) were used to investigate the correlations among resilience and self esteem and positive and negative emotions in the present study. A different sample that was composed of 496 college students (339 females, 157 males) from the School of Education from Middle East Technical University was also utilized to examine the concurrent and divergent validity of the ER scale. The mean age of the participants was 21.35 (SD = 1.50), with a range of 18 – 26. Table 2.5 shows the correlations among resilience, self esteem, emotions in the research sample and the additional sample.

Table 2.5 The evidence for divergent and concurrent validity evidence for ER scale

Additional Sample Size = 496 Original Sample Size = 370	ER	Self Esteem	Positive Emotions
ER	1		
Self Esteem	.45* , .46*		
Positive Emotions	.56* , .64*	.54* , .53*	
Negative Emotions	-.38* , .46*	-.45* , .46*	-.28* , -.32*

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

Cronbach Alpha was also calculated separately for both the total scale and the subscales. A value of .80 which is such a good value for a relatively short scale was found for the total scale. Cronbach Alpha coefficients were .66, .63, .67 for the three subscales named ER1 (*Personal Strengths Relating Recovery*); ER2 (*Positive Self-Appraisals*) and ER3 (*Openness to new experience*) respectively. The correlations among the scores of the factors and total score were also calculated. Moreover, the correlation coefficients between the total ER score and the factors, ER1 (*Personal Strengths Relating Recovery*); ER2 (*Positive Self-Appraisals*) and ER3 (*Openness to new experience*) were: .73, .81, .81, respectively. All the correlations were significant at the 0.01 level (2-tailed)

2.3.1.2 Confirmatory Factor Analysis for Ego Resilience Scale

First order confirmatory factor analyses based upon individual items in ER scale using asymptotic covariance matrix and estimation method of weighted least square (Jöreskog & Sörbom, 1993) was performed. One item (item 4) with high cross loading was omitted (MacCallum & Austin, 2000) in order to get interpretable and refined factor structures.

The results indicated a good fit to examine how well three factor models approaches to the data. All items loaded sufficiently and significantly on their respective factors thus supporting a three factor model for the ER scale in Turkish culture. The R^2 's ranged from .14 to .86 and item 9 and 10 had the lowest three R^2 's. Among the items in the ER scale item 11 has a great value of R^2 (.86). In order for capturing the optimal measurement model for the ER scale, modifications based on the suggestions (one error covariance and one path from *item 3* to latent variable were added) made by LISREL 8.3 and theoretical meaningfulness were performed. According to the modifications suggested by LISREL, *item 3* was loaded on the first factor (*Personal Strengths Relating Recovery*) as well. For future studies, this item should be scored both in first and third factor. Table 2.6 shows the standardized lambda-x Estimates, *t*-values and squared multiple correlations of the items in the ER scale in two confirmatory factor analyses.

Table 2.6 Standardized Estimates, *t*-values and squared multiple correlations for the ER items

	CFA		
	λ	<i>t</i>	R^2
1. Personal strenghts relating recovery (ER1)			
02. Item 02	.79	25.70	.63
14. Item 14	.53	12.30	.28
13. Item 13	.76	23.70	.57
10. Item 10	.37	7.62	.14
2. Interpersonal Insight (ER2)			
09. Item 09	.42	8.69	.17
06. Item 06	.64	16.13	.41

Table 2.6 (continued)

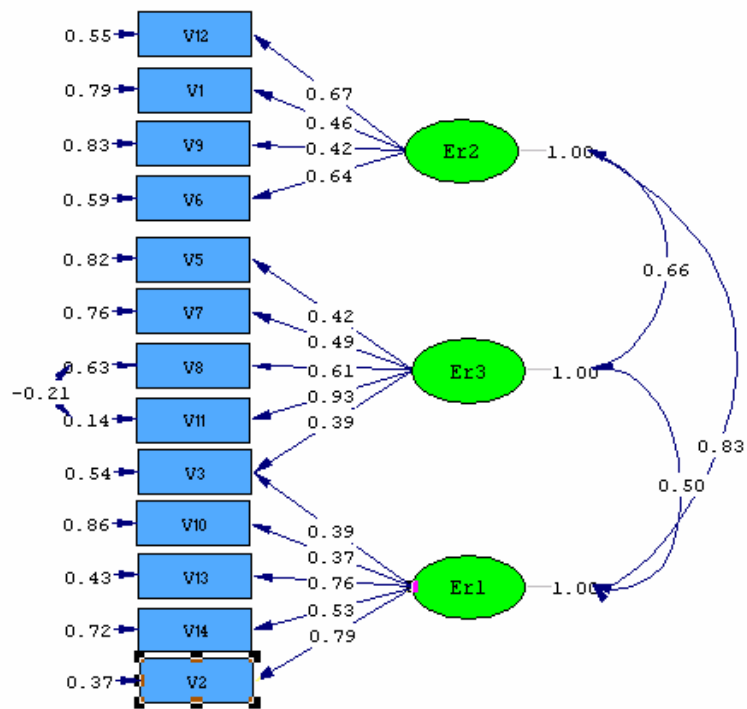
12. Item 12	.67	16.90	.45
01. Item 01	.46	9.80	.21
3.Openness to new experience (ER3)			
07. Item 07	.49	11.13	.24
08. Item 08	.61	11.52	.37
11. Item 11	.93	23.04	.86
05. Item 05	.39	6.88	.46
03. Item 03	.42	9.23	.18

Chi square which evaluates the absolute fit of the tested model to the data (Bollen, 1989) was significant, χ^2 (60, N= 363) = 109.04 $p < .05$. The collective goodness of fit indices used in this study ($\chi^2 / df = 1.81$; RMSEA = .048; SRMR = .064; GFI = .98; AGFI = .97; CFI = .94) indicated that the first order confirmatory model was a good solution for the data. The final measurement model with two modifications included three factors and 14 indicators. Three-factor solution for the ER scale proved to be a good fit to the data. The goodness of fit measures was summarized in Table 2.7.

Table 2.7 Summary of fit indices from the measurement model of ER

Indexes	Measurement Model for ER_ 3 Factors	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen, 1989)
χ^2, df	109.04;,60	
χ^2 / df	1.81.	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.048	Confidence interval for RMSEA (0.033; 0.062)
SRMR	.064	SRMR < .05
GFI	.98	GFI > .90
AGFI	.97	AGFI > .90
CFI	.94	CFI > .90

As a result, the three factor structure was verified both the results of exploratory and confirmatory factor analyses. The Turkish version of Ego Resiliency scale can be used as a measure of trait based resilience. The path diagram (Figure 2.1) of the first-order measurement model of trait based resilience with standardized path coefficients in this chapter instead of appendix since this is the first attempt for providing validity evidence for ego resilience construct in Turkish culture. Estimates of parameters in measurement model of ego resilience with *t*-values were provided in Appendix E.



Chi-Square=109.04, df=60, P-value=0.00011, RMSEA=0.048

Figure 2.2 The standardized estimates for three-factor, 13-item ER Scale

2.5.2 Measure of Self Esteem

Self-esteem is defined in the present study as the sense of self-respect, worthiness, and adequacy (Rosenberg, 1979). The starting point of the hypothesized model in this study was assessed by Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965, 1989) which measures the general evaluation of one's worthiness as a human being. It is the most widely used measure of self esteem in social science research (Blascovich & Tomaka, 1991) and it is also considered by most researchers to be a valid measure of self esteem (Guindon, 2002). The scale is composed of ten items. Participants respond to the self-evaluative items on a 4-point scale. 5 of ten items are positively worded while the rest of them are worded negatively. Higher scores on the scale indicate greater positive self-worth. The original sample of the scale consisted of high school students and significant correlations with other self-esteem scales were reported in a validity evidence study (Rosenberg, 1979). The later studies have supported both the one dimensional structure (e.g., Corwyn, 2000) and two dimensional structures (e.g., Ang, Neubronner, Oh, & Leong, 2006; Feather & Bond, 1983; Tafarodi & Milne, 2002) for the scale. Eight alternative models of factor structure of the RSES were evaluated among three different samples using CFA approach and the results indicated that RSES is a unidimensional constructs both for adults and adolescents.

This extensively used measure was first adapted into Turkish by Çuhadaroğlu (1986). She provided construct validity evidence for RSES by comparing the scores of clinical (neurotic and psychotic) and normal adolescents. Test-retest reliability coefficient was .71 with a 4-week time period. In another study, Tuğrul (1994) provided construct validity evidence for the RSES by comparing the scores of children who has alcoholic fathers with the scores of children who has non-alcoholic fathers; additionally Cronbach alpha reliability was reported as .76

Self- esteem is conceptualized as subjective appraisals about general sense of self-worth which has been shown to be one of the main constructs determining psychological and social adjustment and well-being. Self-esteem is regarded as broad

and valid construct across different cultures which represent self including cognitive, behavioral and affective aspects (Blascovich & Tomaka, 1991). It might be the most studied construct in field of psychology relating endless variables. The Rosenberg Self-Esteem (RSES, Rosenberg, 1965) scale which was translated into 28 languages and was validated across 53 nations (Schmitt, Allik, 2005) was used in the current study. In the large review study (Schmitt, Allik, 2005), it was found that self esteem was associated with neuroticism, extraversion, and romantic attachment styles within nearly all nations, and RSES scores were above theoretical midpoint indicating generally positive self appraisals are universal without cultural differences. From a cross-cultural point of view, the authors (Schmitt, Allik, 2005) underlined a central difference across nations which imply neutral response to positive items in more collectivist cultures. In other words, in developed countries, the total score of negatively worded items and positively worded items were closer.

As carried out in the previous analyses, in the first place PCA with varimax rotation using Kaiser Normalization analysis was conducted on the items of RSES to explore the factor structure derived from the data. The results of PCA revealed two factors with eigen values above 1 (4.29, 1.32 correspondingly) accounting for 56 percent of the total variance. There were no items with cross loadings. There were seven items in the first factor, and the rest of the items were loaded on the second factor. The items were not discriminated as positively and negatively worded. *Item 6 and 7* (“*Kendime karşı olumlu bir tutum içindeyim.*” And “*Genel olarak kendimden memnunum*”) were apparently loaded on the first factor in which negatively worded items clustered. These two items were the most extreme positive self appraisals in the scale. The participants might have hesitated to give the impression of boasting and they might have a tendency to decrease their scores on the positively worded items. If one checks the remaining positive items, it can be seen that the rest were relatively less pretentious statements. This factor structure which is theoretically different from the expected might be the expression of cultural orientation. The summary of two-factor solution of RSES was presented in Table 2.8 the Cronbach alpha value (.85) showed good internal consistency for the RSES.

Table 2.8 Loadings and communalities of the factor analysis of RSES

	Communalities	Components	
		1	2
10. Bazen kendimin hiç de yeterli bir insan olmadığını düşünüyorum.	.683	.823	.080
09. Bazen kesinlikle kendimin bir işe yaramadığımı düşünüyorum.	.644	.800	.066
06. Kendime karşı olumlu bir tutum içindeyim.	.597	.720	.279
07. Genel olarak kendimden memnunum.	.582	.688	.329
03. Genelde kendimi başarısız bir kişi olarak görme eğilimindeyim.	.471	.663	.178
08. Kendime karşı daha fazla saygı duyabilmeyi isterdim.	.363	.595	.097
05. Kendimde gurur duyacak fazla bir şey bulamıyorum.	.483	.587	.372
01. Kendimi en az diğer insanlar kadar değerli buluyorum.	.645	.136	.792
02. Bazı olumlu özelliklerim olduğunu düşünüyorum	.641	.159	.785
04. Bende diğer insanların bir çoğunun yapabildiği kadar bir şeyler yapabilirim	.514	.185	.693

Although two-factor solution was derived from EFA, assumed two factor structure is likely to be a statistical artifact due to positively and negatively worded items (Carmines & Zeller, 1979; Marsh, 1996). Thus, the total score of RSES was used in the structural model. Unidimensional structure of RSES was tested via first order CFA to describe the latent variable corresponding self-worth. Asymptotic covariance matrix and estimation method of weighted least square (Jöreskog & Sörbom, 1993) were used. The items in the RSES were utilized as observed variables in the measurement model. According to the results, all the path coefficients were significant. As presented by the goodness of fit statistics (Table 2.9) the one-factor solution with ten items (one error variance was added) for RSES showed acceptable fit to the data.

Table 2.9 Summary of fit indices from measurement models of RSES

Indexes	Measurement Model for RSES	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen,1989)
χ^2 , df	103,41; 34	
χ^2 / df	3.04	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.075	Confidence interval for RMSEA (0.059; 0.092)
SRMR	.011	SRMR < .05
GFI	.98	GFI > .90
AGFI	.97	AGFI > .90
CFI	.95	CFI > .90

Table 2.10 displays the standardized lambda-x Estimates, *t*-values and squared multiple correlations of the items in RSES regarded as observed variables in the one-factor model verified in the confirmatory solution.

Table 2.10 Standardized estimates, *t*-values and squared multiple correlations for the RSES items

	CFA		
	λ	<i>t</i>	R ²
03.Genelde kendimi başarısız bir kişi olarak görme eğilimindeyim.	.69	22.10	.47
05.Kendimde gurur duyacak fazla bir şey bulamıyorum.	.71	23.70	.51
06.Kendime karşı olumlu bir tutum içindeyim.	.82	35.25	.67
07.Genel olarak kendimden memnunum.	.82	35.56	.66
08.Kendime karşı daha fazla saygı duyabilmeyi isterdim.	.55	14.36	.30
09.Bazen kesinlikle kendimin bir işe yaramadığımı düşünüyorum.	.68	21.49	.46
10. Bazen kendimin hiç de yeterli bir insan olmadığımı düşünüyorum.	.71	23.52	.50
01. Kendimi en az diğer insanlar kadar değerli buluyorum.	.63	18.03	.40
02. Bazı olumlu özelliklerim olduğunu düşünüyorum	.65	18.73.	.42
04. Bende diğer insanların bir çoğunun yapabildiği kadar bir şeyler yapabilirim	.59	15.88	.34

2.5.3 Measure of Dispositional Hope

Hope was assessed using Dispositional Hope Scale (DHS, Snyder et al., 1991a). DHS is an extensively used trait based hope scale that measures one's global level of hope. It is a 12-item scale with four filler items. The pioneers (Snyder, 1989; Snyder

et al., 1991a, Snyder, 1994) have defined hope as a cognitive construct with two sub-constructs: pathways and agentic thinking. A recent study (Roesch & Vaughn, 2006) validated the two-factor structure of the scale. Likewise in the original study, each subscale (pathways and agentic thinking) has four items. Item numbers in pathways subscale were exactly the same as in the original sample. Items, 1,4,7,8 are in pathways subscale while items 2, 9, 12, 10 are in the agency thinking subscale. The maximum score and the minimum score that can be gathered from the scale are 32 and 8 respectively. Snyder et al., (1991) reported satisfactory alpha coefficient ranges for the total scale, pathways and agency thinking subscales as follows respectively: .71 to .76; .63 to .80; .71 to .76. The scale has also considerable construct, concurrent and discriminant validity evidence as well.

DHS is adapted into Turkish by Akman and Korkut (1993). Internal reliability of the Turkish version of the scale was reported as .65 (Cronbach Alpha). Test-Retest reliability was calculated as well by the researchers and it was found as .66 with four week interval. Inconsistent with the original study, adaptation study of the scale and another graduate level study (Denizli, 2004) revealed unidimensional factor structure across Turkish university students. In the latter study, exploratory factor analysis using maximum likelihood model with varimax rotation accounted for 31% of the total variance. Factor loadings ranged between .51 and .61.

Promotion of resilient personality, the ability to bounce back from adversity requires being hopeful (Werner & Smith, 1992). Hope is a latent variable used in the structural models. Dispositional Hope Scale (DHS) was used to define the latent variable measuring hope. Principal component analysis with varimax rotation using Kaiser Normalization was conducted on the scores of DHS. The rotated factor structure obtained through EFA indicated that two factors accounted for 57 percent of the total variance. There were two items (items 2 and 8) with high cross loadings. Of the eight items, two items (item 2 and 8) with high cross loadings were omitted (MacCallum & Austin, 2000) in order to get interpretable and refined factor structures standing for each item to load on only one factor. Items should preferably

load greater than .40 on the relevant factor and less than .40 on all other factors (Stevens, 1996). PCA with varimax rotation using Kaiser Normalization was run for the second time. The number of factors with eigen values greater than one was two accounting for 42 percent and 17 percent of the total variance respectively. Factor loadings and communalities can be seen in Table 2.11. In total 59 percent of the variance was explained by the factors corresponding the latent hope variable in the structural model. The Cronbach alpha coefficient was .82 in the present sample.

Table 2.11 Loadings and communalities of the factor analysis of DHS

	Communalities	Components	
		1	2
10.Hayatta oldukça başarılı olmuşumdur.	.655	.808	.050
12.Kendim için koyduğum hedeflere ulaşırım.	.612	.756	.201
09.Geçmiş yaşantılarım beni geleceğe iyi biçimde hazırladı.	.539	.699	.225
04. Herhangi bir problemin bir çok çözüm yolu vardır.	.673	-.031	.820
01.Sıkıntılı bir durumdan kurtulmak için pek çok yol düşünebilirim.	.598	.271	.724
07. Benim için çok önemli şeylere ulaşmak için pek çok yol düşünebilirim.	.483	.371	.588

While asymptotic covariance matrix and estimation method of weighted least square (Jöreskog & Sörbom, 1993) were used; consecutively, the confirmatory solution with two-factor hypothesized model yielded a good fit to the data ($\chi^2 / df = 1.83$; RMSEA = .048; SRMR = .036; GFI = .98; AGFI = .96; CFI = .98). Table 2.12 tabulates the goodness of fit statistics for the two-factor model. The results supported the measurement of latent variables (two factors) assessing hope.

Table 2.12 Summary of fit indices from measurement models of DHS

Indexes	Measurement Model for DHS	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen,1989)
χ^2 , df	14,68; 8	
χ^2 / df	1.83	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.048	Confidence interval for RMSEA (0.0 ; 0.086)
SRMR	.036	SRMR < .05
GFI	.99	GFI > .90
AGFI	.98	AGFI > .90
CFI	.98	CFI > .90

Table 2.13 shows the standardized lambda-x Estimates, *t*-values and squared multiple correlations of the items in DHS regarded as observed variables in the two-factor model verified in the confirmatory solution.

Table 2.13 Standardized estimates, *t*-values and squared multiple correlations for the DHS items

	CFA		
	λ	<i>t</i>	R ²
Pathways			
01.Sıkıntılı bir durumdan kurtulmak için pek çok yol düşünebilirim.	.67	14.55	.46
04.Herhangi bir problemin bir çok çözüm yolu vardır.	.51	10.11	.27
07.Benim için çok önemli şeylere ulaşmak için pek çok yol düşünebilirim.	.63	13.31	.40
Agentic Thinking			
09.Geçmiş yaşantılarım beni geleceğe iyi biçimde hazırladı.	.64	14.60	.41
10.Hayatta oldukça başarılı olmuşumdur.	.65	14.95	.42
12.Kendim için koyduğum hedeflere ulaşıyorum.	.69	16.23	.48

2.5.4 Measure of Optimism

Optimism is defined as the cognitive disposition leading to favorable outcomes in one's life (Scheier & Carver, 1985). Life Orientation Test (LOT; Scheier & Carver, 1985) which has been the most widely used instruments to measure optimism in psychological research was used in the current study. It is an eight-item self report

measure (along with four filler items) assessing generalized expectancies for positive versus negative outcomes.

Basically, the items in the scale are general statements indicating the cognitions with positive aspect of life. There are four positively worded (e.g., "In uncertain times, I usually expect the best") items and four negatively worded items (e.g., "If something can go wrong with me, it will") in total eight items in the scale. The respondents are expected to rate the items on a 5-point Likert scale ranging from 0 (*strongly agree*) to 4 (*strongly disagree*). A total score is computed by adding positive items and reversed negative items and higher scores on the LOT displays greater disposition for positive outlook. Although the factor structure of the scale yielded two factors, according to the original authors, using the scale with unidimension makes more sense. However, the authors in their more recent study acknowledged that there may be values in examining the two factors separately (Scheier et al., 1994).

Cronbach's alpha for the scale was .76 and test-retest reliability was .79 and adequate levels of convergent and discriminant validity have been reported by the original authors. Reasonable psychometric properties of the scale were reported in different studies. The LOT was translated into Turkish and it turned out that Turkish version of LOT is reliable and valid (Tezer & Aydın, 1991). The Internal consistency of the scale was assessed by Cronbach alpha (.72) and test-retest reliability with a four week time interval (.77). The validity evidence of the LOT was assessed by explanatory and following confirmatory factor analyses for the present study.

Optimism which is a dispositional personality trait toward a resilient personality was regarded as a latent variable in the structural models. It was measured by Life Orientation Test (LOT; Scheier & Carver, 1985). Principal component analysis with varimax rotation using Kaiser Normalization revealed two factors eigen values above 1 (3.05, 1.36) accounting for 55 percent of the total variance and factor loadings between .837 and .611. The two factors consisting of four items explained 38 percent and 17 percent of the variance respectively. Table 2.14 presents the factor loadings

and communalities of the factor analysis performed on the individual items in LOT. In order to determine the internal consistency level of the scale Cronbach Alpha was calculated and it was found as .75 for the current sample. The results of EFA showed that the items in LOT were differentiated as positively and negatively worded. The general scoring way of LOT is after reversing negatively worded items, items scores are summed to obtain an overall optimism score representing greater optimism (Scheier et al., 1994). Thus, also based on the suggestion made by Scheier and Carver (1985), the researcher decided to use total score of LOT instead of the raw scores obtained through factors.

Table 2.14 Loadings and communalities of the factor analysis of LOT scores

	Communalities	Components	
		1	2
04. Herşeyi hep iyi tarafından alırım	.709	.837	.091
11. Her türlü olayda bir iyi yan bulmaya çalışırım.	.638	.795	.080
05. Geleceğim konusunda hep iyimserimdir.	.647	.754	.279
01. Ne olacağının önceden kestirilemediği durumlarda hep en iyi sonucu beklerim.	.387	.611	.119
09. Hiçbir şey benim istediğim yönde gelişmez.	.673	.285	.769
08. İşlerin istediğim gibi yürüyeceğini nerdeyse hiç beklemem.	.590	.147	.754
03. Bir işimin ters gitme olasılığı varsa mutlaka ters gider.	.470	.059	.683
12. Başıma iyi şeylerin geleceğine pek bel bağlamam.	.306	.066	.549

As a second step, a confirmatory factor analysis (one error covariance was added) was conducted to test the stability of the one-factor structure for optimism as latent variable in the structural model. The results were summarized in Table 2.15. The goodness of fit measures ($\chi^2 / df = 4.29$; RMSEA = .095; SRMR = .011; GFI = .98; AGFI = .96; CFI = .91) suggested that the hypothesized model fit well. While performing CFA, asymptotic covariance matrix and estimation method of weighted least square (Jöreskog & Sörbom, 1993) were utilized. The results of the study provided satisfactory support for the latent variable measuring optimism in structural models.

Table 2.15 Summary of fit indices from measurement model of LOT

Indexes	Measurement Model for LOT	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen,1989)
χ^2 , df	81.59; 19	
χ^2 / df	4.29	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.095	Confidence interval for RMSEA (0.075 ; 0.12)
SRMR	.11	SRMR < .05
GFI	.98	GFI > .90
AGFI	.96	AGFI > .90
CFI	.91	CFI > .90

Table 2.16 depicts the standardized lambda-x Estimates, *t*-values and squared multiple correlations of the items in LOT regarded as observed variables in the one-factor model verified in the confirmatory solution.

Table 2.16 Standardized estimates, *t*-values and squared multiple correlations for the LOT items

	CFA		
	λ	<i>t</i>	R ²
01.Ne olacağının önceden kestirilemediği durumlarda hep en iyi sonucu beklerim.	.50	11.72	.25
03.Bir işimin ters gitme olasılığı varsa mutlaka ters gider.	.50	12.07	.25
04.Herşeyi hep iyi tarafından alırım	.68	19.83	.47
05.Geleceğim konusunda hep iyimserimdir.	.78	27.06	.61
08.İşlerin istediğim gibi yürüyeceğini nerdeyse hiç beklemem.	.63	17.39	.40
09.Hiçbir şey benim istediğim yönde gelişmez.	.80	27.76	.63
11.Her türlü olayda bir iyi yan bulmaya çalışırım.	.61	15.79	.37
12.Başıma iyi şeylerin geleceğine pek bel bağlamam.	.37	7.93	.14

2.5.5 Measure of Life Satisfaction

Satisfaction with Life Scale (SWLS) with five items (e.g., “*I am satisfied with my life*”) originally developed by Diener and his colleagues (Diener et al., 1985) was used to measure the satisfaction level in one’s life. SWLS is not specified any domain of life to quantify satisfaction level but instead it addresses general life satisfaction. It is a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly*

agree). Higher scores on SWLS are associated with higher levels of general life satisfaction.

The internal consistency coefficient for the original SWLS was .87 and factor analysis resulted in one factor explaining 66% of the variance. Sümer (1996) carried out the adaptation study of SWLS into Turkish. Life satisfaction differs from the affective components of happiness in that it is based on a reflective judgment.

Resilience is positively correlated with adaptational outcomes like life satisfaction (Wagnild & Young, 1993). Life satisfaction is regarded as another latent variable in the structural models. Life satisfaction which is conceptualized as the judgmental component (Andrews & Withey, 1976) is one factor in the more general construct of subjective well being. Life satisfaction is measured by Satisfaction with Life Scale (SWLS; Diener et al., 1985) which composed of only five items. Items in SWLS differ from the items describing affective adjectives; items are reflective and judgmental general statements.

The validity evidence of the SWLS was assessed by explanatory and confirmatory factor analyses and the reliability of SWLS was evaluated by Cronbach Alpha coefficient for the present sample. PCA with varimax rotation using Kaiser Normalization was performed on the items in SWLS. Consistent with the original factor structure of the SWLS, the EFA resulted in unidimensional factor structure of SWLS. 63 percent of the total variance was explained by one factor with eigen value greater than 1 (3.187). The communalities of the five items were .59, .59, .74, .73, .55 were respectively. The Cronbach alpha value was .85 for the current study.

The unidimensional factor model was specified in which the five items were hypothesized as indicators of only one factor. The hypothesized model (one error covariances was added) presenting the original factor structure displayed good fit to the data. Goodness of fit indices was as follows: ($\chi^2 / df = 2.76$; RMSEA = .069; SRMR = .017; GFI = .99; AGFI = .96; CFI = .99). The results of measurement

model were shown in Table 2.17. While performing CFA, asymptotic covariance matrix and estimation method of weighted least square (Jöreskog & Sörbom, 1993) were utilized.

Table 2.17 Summary of fit Indices from measurement models of SWLS

Indexes	Measurement Model for DHS	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen, 1989)
χ^2 , df	11,40; 5	
χ^2 / df	2.28	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.059	Confidence interval for RMSEA (0.0090 ; 0.11)
SRMR	.027	SRMR < .05
GFI	1	GFI > .90
AGFI	.99	AGFI > .90
CFI	.99	CFI > .90

Table 2.18 presents the standardized lambda-x Estimates, *t*-values and squared multiple correlations of the items in SWLS regarded as observed variables in the single-factor model verified in the confirmatory solution.

Table 2.18 Standardized estimates, t-values and squared multiple correlations for the SWLS items

	CFA		
	λ	<i>t</i>	R ²
01.Yaşamım idealime büyük ölçüde yaklaşıyor.	.69	21.79	.48
02.Yaşam koşullarım mükemmel.	.71	23.11	.50
03.Yaşamımdan memnunum	.85	39.34	.72
04.Yaşamda şu ana kadar istediğim önemli şeylere sahip oldum.	.83	36.33	.68
05.Yaşamımı bir daha yaşasaydım hiç bir şeyi değiştirmek istemezdim.	.66	19.51	.44

2.5.6 Measure of Positive Affect

The Positive and Negative Affect Schedule (PANAS, Watson et al., 1988) is a 20-item scale with two independent sub scales: Positive Affect (PA) and Negative Affect (NA). Positive Affect reflects the level of emotional-well being whereas

Negative Affect makes reference to emotional distress. Each subscale has ten affective descriptors. Ratings are made on 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Total scores for the PA and NA subscales are calculated by summing the relevant items. These two factors constitute the affective dimensions of positive and negative emotionality.

Negative and positive affect do not represent two poles of a single continuum rather they are two separate affective continua. (Watson & Clark, 1984; Watson & Tellegen, 1985). PA and NA function as independently and in a health related context. Negative affect (NA) includes such aversive emotions as guilt, fear, anger, disgust, and anxiety whereas positive affect (PA) involves such positive states as joy, interest, enthusiasm, inspiration and the like. Satisfactory reliability and validity evidence for PANAS is documented in the original study (Watson et al., 1988). The reported internal reliability values for the average time reference were .88 (PA) and .87 (NA). A recent study (Ostir, Smith, Smith & Ottenbacher, 2005) proved that PANAS has excellent reliability across old population with inpatients in medical rehabilitation. The scale is adapted into Turkish by Gençöz (2000) and Cronbach alpha levels for PA and NA were .83 and .86, respectively.

Positive emotions are predictable key factors of resilient personality or active ingredients (Frederickson & Losada, 2005) within human flourishing. Positive emotions lead to consequential personal resources which have adaptive value in face of adversity and increase well-being. Positive and Negative Affect Scale (PANAS, Watson et al., 1988) was used to quantify the positive affect. The scale has two subscales: Positive and Negative Affect. Negative and positive affect are independent constructs (Watson & Clark, 1984; Watson & Tellegen, 1985) and the original authors treated the Positive Affect (PA) and Negative Affect (NA) items like separate scales. Only positive affect subscale was used in the present study. PA describes people with high energy, enthusiasm, concentration, pleasurable engagement, cheerfulness and confidence. They willingly engage and confront the environment, including the social environment (Watson, Clark & Harkness, 1994).

In order to examine factor structure of the scale, PCA with varimax rotation using Kaiser Normalization was computed on the items of the scale. Only one item (*item 19*) was with complex loadings, loaded significantly (greater than .40) on two subscales. This item was omitted from the data and PCA analysis was run again. The *item 19* was *active*; it is hypothesized that this item was not discriminative in the Turkish form of the scale because of translation since the item was directly translated into Turkish. The Turkish word for the *item 19* may not reflect the exact meaning of the item in the English form.

The results revealed two interpretable factors accounting the 47 percent of the total variance. The eigen values of the two factors were 3.07 and 1.14. Table 2.19 displays the results of the exploratory factor analysis. The reliability of the scale was assessed by Cronbach alpha value and it was found as .75 for the present study.

Table 2.19 Loadings and communalities of the factor analysis of PA

	Communalities	Components	
		1	2
16.Kararlı	.639	.732	.320
05.Güçlü	.574	.720	.236
17.Dikkatli	.525	.685	.237
12.Uyanık	.388	.621	-.053
09.Hevesli	.578	.232	.724
03.Heyecanlı	.504	-.263	.659
14.İlhamlı	.349	.223	.547
01.İlgili	.418	.379	.524
10.Gururlu	.247	.227	.442

In the original study (Watson et al., 1988), PA was reported as a single factor. Single factor model was tested via CFA to test the latent variable for positive affect. Similar to previous applications, asymptotic covariance matrix and estimation method of weighted least square (Jöreskog & Sörbom, 1993) were used. One factor model of PA did show reasonable fit to the data ($\chi^2/df = 2.53$; RMSEA = .065; SRMR = .068; GFI = .98; AGFI = .97; CFI = .91).

One-factor structure, which is compatible with the original study, obtained through CFA was explored in detail. Although the results showed good fit to the data and all the path coefficients were significant; R^2 of the *item 3* was incredibly low (.036). The *item 3 (excited)* was checked and it was considered that the translation (*heyecanlı*) of the item might cause the problem. Since the item was translated into Turkish directly, it may be misunderstood by the participants. Contrary to the positive intention of the item, the translation has a negative meaning in the use of Turkish. The measurement model excluding *item 3* was tested subsequently. The researcher decided to include the *item 3* in the further analysis. Since the goodness of fit indicators of the measurement model (excluding item 3) did not show a significant difference ($\chi^2 / df = 3.02$; RMSEA = .075; SRMR = .068; GFI = .98; AGFI = .97; CFI = .91). The goodness of fit measures for both models was presented in Table 2.20. Consequently, since the measurement model did not improve enough, only *item 19* based on EFA was not used in further analysis when generating structural models.

Table 2.20 Summary of fit indices from measurement models of SWLS

Indexes	1 st Measurement Model for PA	2 nd Measurement Model for PA (excluding item 3)	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen, 1989)
χ^2, df	68.56;27	60.41; 20	
χ^2 / df	2.53	3.02	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.065 (0.046 ; 0.085)	.075 (0.054 ; 0.097)	Confidence interval for RMSEA
SRMR	.068	.068	SRMR < .05
GFI	.98	.98	GFI > .90
AGFI	.97	.97	AGFI > .90
CFI	.91	.91	CFI > .90

Table 2.21 presents the standardized lambda-x Estimates, *t*-values and squared multiple correlations of the items in PA regarded as observed variables in the one-factor model verified in the confirmatory solution.

Table 2.21 Standardized estimates, t-values and squared multiple correlations for the PA items

	1 st CFA		
	λ	t	R ²
01.İlgili	.62	11.18	.38
03.Heyecanlı	.25	4.28	.064
05.Güçlü	.75	15.49	.56
09.Hevesli	.73	13.55	.53
10.Gururlu	.45	7.79	.20
12.Uyanık	.39	7.17	.15
14.İlhamlı	.54	9.61	.29
16.Kararlı	.87	18.84	.76
17.Dikkatli	.69	13.93	.48

2.6 Summary of measurement models

A two-stage analysis with Exploratory and Confirmatory Factor Analysis (EFA and CFA) was performed on the items of the scales quantifying the both dependent and independent variables to formulate the hypothetical constructs served as confirmed latent variables in the structural models. Both EFA and CFA analyses were conducted by following the standard procedures. Principal component analysis with varimax rotation was performed for each variable (*psychological resilience, optimism, hope, life satisfaction, positive affect and self-esteem*). Factor loadings below .40 were not taken into consideration. Items with cross loadings (loaded significantly more than one factor) were omitted from the factor structure to capture reliable latent variables (MacCallum & Austin, 2000).

Based on the factorial structures resulted from EFA, a series first order confirmatory factor analyses were carried out in row to investigate how well the indicators define the latent variable used in the further analyses. The measurement models obtained through a set of first order confirmatory factor analyses used in the structural models

with standardized path coefficients and *t*-values are displayed in Appendix E with respect to each variable.

Entire view of EFA and CFA resulted in nine latent variables defined by factor scores or item scores of the related measure:

- Resilience:
 - *Personal strengths relating recovery, Interpersonal Insight, and Openness to new experience*: The theoretical construct *psychological resilience* was formulated by three components gathered from EFA of ego resiliency scale (ER; Block & Kremen, 1996). Three components of *psychological resilience* were regarded as latent variables and the related items served as indicators.
- *Optimism*:
 - The latent variable of optimism assessing general positive expectancies about life outcomes was defined by the total score of LOT (Scheier & Carver, 1985) although the EFA yielded two factors.
- *Dispositional Hope*
 - *Pathways and Agentic Thinking*: Since theoretically, the construct of hope is clearly formulated by two cognitive constructs, hope variable was treated as two different latent variables. The factor structure was theoretically consistent and verified through CFA. Each latent variable representing dispositional hope was defined by related items.
- *Positive affect* :
 - Positive emotional state was regarded as latent variable and assessed by Positive Affect which underlines basic positive emotions (Watson & Tellegen, 1985). The EFA resulted in two-factor solution in the present study but the construct generally is used as unidimensional and formerly defined as positive representative of affect construct (Watson & Tellegen, 1985).

- *Self esteem*
 - Human beings are universally in need of high self-esteem (James, 1890). That is to say, people continually search for positive sense of self-worth related to their success. That's why self esteem is the underlying latent variable in the specified structural model. As mentioned before, although there are some studies indicating the two-factore structure of RSES (e.g., Tafarodi & Milne, 2002), on the other hand some researchers advocate that those factors represents separate dimensions of the construct (e.g., Corwyn, 2000; O'Brien, 1985). Self esteem scores obtained through RSES (Rosenberg, 1965) clustered into two factor structures in the present study. However, since the scales was designed to measure global self-worth, the researcher decided to use total score of RSES as an indicator of latent variable of global self-esteem in the structural model.
- *General Life Satisfaction*
 - The latent variable of general life satisfaction created by the five items in the SWLS (SWLS; Diener et al., 1985). Both EFA and CFA results support the unidimensional structure for SWLS, however, since the total number of item is limited in the scale, the researcher defined the latent variable of life satisfaction representing general life pleasure using five items in SWLS as indicator variables.

The latent and observed variables with respect to related items defined by measurement models in order to use in the structural models were summarized in Table 2.22.

Table 2.22 Latent and observed variables in SEM with corresponding items & factors

LATENT VARIABLES	OBSERVED VARIABLES
Ego-Resilience1	Personal strenghts relating recovery (ER1)
	02. Item 02
	14. Item 14
	13. Item 13
	10. Item 10
Ego-Resilience2	Interpersonal Insight (ER2)
	09. Item 09
	06. Item 06
	12. Item 12
	01. Item 01
Ego-Resilience3	Openness to new experience (ER3)
	07. Item 07
	08. Item 08
	11. Item 11
	05. Item 05
	03. Item 03
Optimism	LOT_ Total Score
	04. Herşeyi hep iyi tarafından alırım
	11. Her türlü olayda bir iyi yan bulmaya çalışırım.
	05. Geleceğim konusunda hep iyimserimdir.
	01. Ne olacağının önceden kestirilemediği durumlarda hep en iyi sonucu beklerim.
	09. Hiçbir şey benim istediğim yönde gelişmez.
	08. İşlerin istediğim gibi yürüyeceğini nerdeyse hiç beklemem.
	03. Bir işimin ters gitme olasılığı varsa mutlaka ters gider.
	12. Başıma iyi şeylerin geleceğine pek bel bağlamam.
Hope	HOPE1: Agentic Thinking
	10. Hayatta oldukça başarılı olmuşumdur.
	12. Kendim için koyduğum hedeflere ulaşıyorum.
	09. Geçmiş yaşantılarım beni geleceğe iyi biçimde hazırladı.
	HOPE2: Pathways Thinking
	04. Herhangi bir problemin bir çok çözüm yolu vardır.
	01. Sıkıntılı bir durumdan kurtulmak için pek çok yol düşünebilirim.
	07. Benim için çok önemli şeylere ulaşmak için pek çok yol düşünebilirim.
Life Satisfaction	LS1 01. Yaşamım idealime büyük ölçüde yaklaşıyor.
	LS2 02. Yaşam koşullarım mükemmel.
	LS3 03. Yaşamımdan memnunum

Table 2.22 (continued)

	LS4 04.Yaşamda şu ana kadar istediğim önemli şeylere sahip oldum.
	LS5 05.Yaşamımı bir daha yaşasaydım hiç bir şeyi değiştirmek istemezdim.
Positive Affect	Positive Affect _ Total Score
	16.Kararlı
	05.Güçlü
	17.Dikkatli
	12.Uyanık
	09.Hevesli
	14.İlhamlı
	01.İlgili
	10.Gururlu
	03. Heyecanlı
Self-Esteem	Self Esteem _ Total Score
	10. Bazen kendimin hiç de yeterli bir insan olmadığımı düşünüyorum.
	09.Bazen kesinlikle kendimin bir işe yaramadığımı düşünüyorum.
	06.Kendime karşı olumlu bir tutum içindeyim.
	07.Genel olarak kendimden memnunum.
	03.Genelde kendimi başarısız bir kişi olarak görme eğilimindeyim.
	08.Kendime karşı daha fazla saygı duyabilmeyi isterdim.
	05.Kendimde gurur duyacak fazla bir şey bulamıyorum.
	01. Kendimi en az diğer insanlar kadar değerli buluyorum.
	02. Bazı olumlu özelliklerim olduğunu düşünüyorum
	04. Bende diğer insanların bir çoğunun yapabildiği kadar bir şeyler yapabilirim

CHAPTER III

RESULTS

The following sections present the results of the statistical analyses carried out in the study. The chapter mainly contains two main sections. In the first section, the results of multivariate normality of the observed variables and descriptive statistics were reported. In the second section specified hypothesized model concerning the relationships between resilience and other personal qualities/dispositions (*optimism, hope, life satisfaction, positive affect and self esteem*) were outlined. Model testing was conducted using the program LISREL 8.30 (Scientific Software International, Lincolnwood, IL) Maximum likelihood (ML) estimation method was chosen to examine the overall fit of the models to the corresponding observed variance–covariance matrices. Covariance matrix was used when testing the model.

3.1 Descriptive Statistics and Correlational Analysis

Descriptive statistics for the observed variables which are the items in ER (*ER1, ER2, ER3, ER5, ER6, ER7, ER8, ER9, ER10, ER11, ER12*) subscale scores of dispositional hope (Pathways and agentic thinking); the total scores of other scales (*LOT, Life Orientation Test; PANAS, Positive Affect Subscale and RSRS, Rosenberg*); and the item values of life satisfaction scale (*SWLS, Satisfaction With Life Scale, Self-Esteem Scale*) used in the study were summarized in Table 3.1. In two variables, Kurtosis values slightly exceeded 1, indicating non-normality for those variables. However, much social science data fail to satisfy normality assumption (Micceri, 1989). Thus, the researcher did not take any transformation on the variables.

In some studies sample correlation matrix or sample covariance matrix was provided whereas in some others the authors did not illustrate correlation or covariance matrix of their sample. However, McDonald and Ho (2002) suggested that availability of correlation matrix should be the general rule for the researchers as it can be informative to the reader. Since there is less agreement in which form the results should be reported in the SEM studies, the correlation matrices was provided in Table 3.2., Table 3.3 and Table 3.4 in order to match a standard in reporting SEM.

Table 3.1 The descriptive statistics for the observed variables

	N	Trimmed		SD	Skewnes	Kurtosis
		Mean	Mean			
ER1	363	3.35	3.3140	.63550	-.508	-.012
ER10	363	3.08	3.0634	.74616	-.304	-.582
ER11	363	2.98	2.9642	.77341	-.263	-.536
ER12	363	2.61	2.6336	.71733	.313	-.528
ER13	363	3.06	3.0386	.74970	-.379	-.295
ER14	363	2.88	2.8623	.76727	-.203	-.420
ER2	363	2.88	2.8788	.73707	-.096	-.305
ER3	363	2.59	2.5895	.86975	.242	-.797
ER5	363	2.65	2.6364	.96628	.044	-1.053
ER6	363	2.85	2.8292	.83668	-.096	-.816
ER7	363	2.25	2.2810	.84314	.292	-.452
ER8	363	2.78	2.7631	.82707	-.006	-.778
ER9	363	2.77	2.7851	.67970	.030	-.395
Agentic	363	9.76	9.6942	1.57419	-.477	.066
Pathways	363	10.56	10.4793	1.37117	-.626	-.101
LS1	363	3.01	3.0110	1.03256	.054	-.681
LS2	363	2.76	2.7851	.96519	.368	-.455
LS3	363	3.37	3.3802	1.00212	.043	-.826
LS4	363	3.28	3.2920	1.04200	.085	-1.024
LS5	363	2.47	2.5262	1.17819	.640	-.502
Optimism	363	19.99	19.9504	4.84942	-.137	-.024
Positive affect	363	36.70	36.6006	4.79096	-.268	.282
Self Esteem	363	23.07	22.9339	4.57486	-.195	-.642

Table 3.2 The correlations among major variables

	ER1	ER2	ER3	Agentic Pathways	Self Esteem	Positive Affect	Optimism	Life Satisfac.
ER1	1	.586 ^(**)	.531 ^(**)	.511 ^(**)	.500 ^(**)	.496 ^(**)	.538 ^(**)	.365 ^(**)
ER2		1	.448 ^(**)	.468 ^(**)	.392 ^(**)	.452 ^(**)	.593 ^(**)	.443 ^(**)
ER3			1	.296 ^(**)	.300 ^(**)	.210 ^(**)	.435 ^(**)	.196 ^(**)
Agentic Pathways				1	.439 ^(**)	.601 ^(**)	.544 ^(**)	.456 ^(**)
Self-Esteem					1	.472 ^(**)	.463 ^(**)	.458 ^(**)
Positive Aff.						1	.529 ^(**)	.447 ^(**)
Optimism							1	.418 ^(**)
Life Satisf.								1

* p< 0.001 level (2-tailed).

The correlations among major study variables were fairly high and significant. The correlation coefficients among the latent variables used in the finalized model were presented in Table 3.2. The highest three correlation coefficients were between *self-esteem* and *Pathways* (.601); *positive affect* and *Ego Resilience 2* (.593); and between *positive affect* and *Ego Resilience 1* (.563). The lowest correlation among latent variables was found between *Ego Resilience 3* and *life satisfaction* (.196).

Correlations for the dependent and independent observed variables were provided separately. Table 3.3 presented the correlational values among dependent observed variables used in the study while Table 3.4 depicted the correlations among independent observed variables.

From the correlation matrix (Table 3.3) the correlation coefficients among items in ER ranged between .114 and .508. The highest correlation was between *ER2* (*Beni allak bullak eden durumların üstesinden çabucak gelirim ve kısa sürede kendimi toparlarım.*) and *ER13* (*Kendimi rahatlıkla oldukça “güçlü” kişiliğe sahip biri olarak tanımlayabilirim*). Interestingly, some items in the scale were not correlated at all. For instance, *ER5* was not correlated with *ER2*, *ER12* and *ER14* at the accepted significance level. There were no significant correlations between *ER1* and *ER7*; *ER1* and *ER8*. This finding might be indicating that those items represent truly independent components of ego resilience. As can be seen from the correlation matrix, *ER7* was not correlated with *ER13*. The remaining items were significantly correlated with each other.

Table 3.3 The correlations among dependent observed variables

	ER1	ER2	ER3	ER5	ER6	ER7	ER8	ER9	ER10	ER11	ER12	ER13	ER14
ER1	1	.311 ^(**)	.214 ^(**)	.119 ^(*)	.252 ^(**)	.072	.074	.157 ^(**)	.173 ^(**)	.259 ^(**)	.180 ^(**)	.270 ^(**)	.157 ^(**)
ER2		1	.418 ^(**)	.039	.338 ^(**)	.122 ^(*)	.166 ^(**)	.080	.245 ^(**)	.259 ^(**)	.412 ^(**)	.508 ^(**)	.390 ^(**)
ER3			1	.170 ^(**)	.325 ^(**)	.286 ^(**)	.352 ^(**)	.224 ^(**)	.091	.491 ^(**)	.272 ^(**)	.359 ^(**)	.279 ^(**)
ER5				1	.213 ^(**)	.214 ^(**)	.203 ^(**)	.141 ^(**)	.059	.404 ^(**)	.074	.096	.033
ER6					1	.150 ^(**)	.249 ^(**)	.183 ^(**)	.093	.383 ^(**)	.356 ^(**)	.380 ^(**)	.187 ^(**)
ER7						1	.329 ^(**)	.130 ^(*)	.108 ^(*)	.384 ^(**)	.180 ^(**)	.083	.162 ^(**)
ER8							1	.170 ^(**)	.118 ^(*)	.324 ^(**)	.170 ^(**)	.157 ^(**)	.162 ^(**)
ER9								1	.092	.274 ^(**)	.286 ^(**)	.157 ^(**)	.076
ER10									1	.114 ^(*)	.152 ^(**)	.297 ^(**)	.150 ^(**)
ER11										1	.305 ^(**)	.317 ^(**)	.192 ^(**)
ER12											1	.365 ^(**)	.169 ^(**)
ER13												1	.365 ^(**)
ER14													1

* p< 0.05 level (1-tailed).

** p< 0.01 (1-tailed).

Table 3.4 The correlations among independent observed variables

	SE	LS1	LS2	LS3	LS4	LS5	PA	Optimism	Agentic	Pathways
SE	1	.355 ^(**)	.251 ^(**)	.371 ^(**)	.362 ^(**)	.279 ^(**)	.529 ^(**)	.447 ^(**)	.601 ^(**)	.472 ^(**)
LS1		1	.482 ^(**)	.538 ^(**)	.554 ^(**)	.497 ^(**)	.353 ^(**)	.374 ^(**)	.454 ^(**)	.252 ^(**)
LS2			1	.616 ^(**)	.560 ^(**)	.411 ^(**)	.248 ^(**)	.288 ^(**)	.309 ^(**)	.180 ^(**)
LS3				1	.706 ^(**)	.532 ^(**)	.289 ^(**)	.443 ^(**)	.382 ^(**)	.263 ^(**)
LS4					1	.547 ^(**)	.319 ^(**)	.415 ^(**)	.439 ^(**)	.258 ^(**)
LS5						1	.205 ^(**)	.307 ^(**)	.352 ^(**)	.143 ^(**)
PA							1	.418 ^(**)	.544 ^(**)	.463 ^(**)
Optimism								1	.456 ^(**)	.458 ^(**)
Agentic									1	.439 ^(**)
Pathways										1

** p< 0.01 (1-tailed).

All of the correlation coefficients among observed independent variables were significant and in theoretically expected direction (see Table 3.4). The lowest correlation was between *LS5 (Yaşamımı bir daha yaşasaydım hiç bir şeyi değiştirmek istemezdim)* and *positive affect* (.205). The highest correlation was .706, between *LS3 (Yaşamımdan memnunum)* and *LS4 (Yaşamda şu ana kadar istediğim önemli şeylere sahip oldum)*.

3.2 Hypothesized Structural Model

In the hypothesized model, the basic assumption supported by theoretical foundations in the first chapter is that self esteem as a superordinate variable affecting our cognitions and those cognitive constructs might have an influence on our emotions. Accordingly, *self esteem* was as a base for *hope (agentic thinking and pathways)* and *optimism*. Theoretically suggested, the *hope* variable was taken as two different sub-constructs constituting dispositional hope: *Agentic thinking and Pathways*. When generating the model, it was conceptualized that *optimism* and *hope* were cognitive constructs describing only one dimension of personality whereas *positive affect* and *life satisfaction* were more general formulations which might be influenced easily by many diverse factors and might reflect only a specific period of one's life. Further, *positive affect* might be considered as an affective phenomenon. Thus, it differs from cognitive constructs. Concerning *life satisfaction*, although it is defined as a conjoint cognitive affective part of subjective well-being, the items in the Satisfaction with Life Scale are related to general pleasure or gratification in one's life. Therefore it is also a disparate construct than *optimism* and *hope*. Thus, the researcher hypothesized that *self esteem* might have an indirect effect on resilience through these mediators. The diagram of the theoretically specified model can be seen in Figure 3.1.

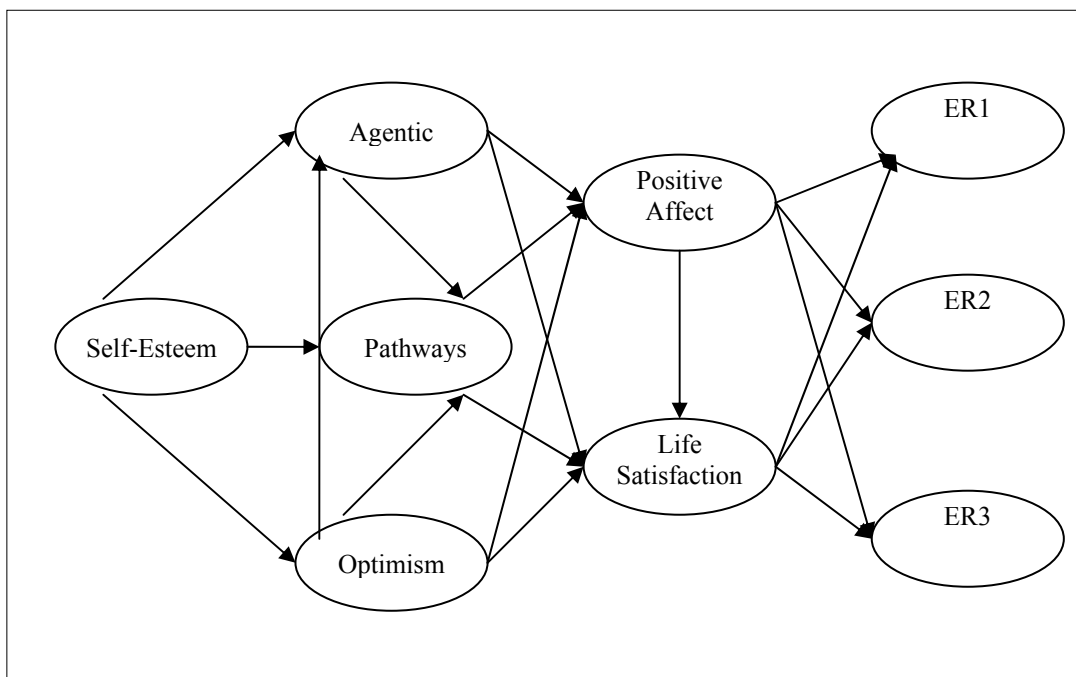


Figure 3.1 The Hypothesized Model

As seen from the diagram (Figure 3.1), the direct three paths from *self esteem* to the two construct of hope (*agentic thinking* and *pathways*) and *optimism* were estimated. Additionally, the paths from the cognitive variables of *optimism*, *agentic thinking* and *pathways* to *positive affect* and *life satisfaction* were estimated. Subsequently, the six paths, pointing to the three different representations of resilience were from *positive affect* and *life satisfaction*. Namely, it was estimated that *self-esteem* was hypothesized as a predictor of being hopeful and optimistic which, in turn, led to experiencing greater life satisfaction and positive affect. It was assumed that gratification or pleasure in life and capability to experience positive emotions might be directly related to resilience; therefore *self esteem*, *optimism* and *hope (agentic thinking and pathways)* might have indirect effects on resilience.

In summary, the hypothesized model (Figure 3.1) in which *optimism*, *hope (agentic thinking and pathways)*, *positive affect and self esteem* and *life satisfaction* were all predictor variables while *Ego Resilience 1*, *Ego Resilience 2* and *Ego Resilience 3* were the criterion variables, was tested. Figure 3.2 represents the conceptual diagram

of the specified model with latent and observed variables. In the specified model (Figure 3.2), direct and indirect effects of independent latent variables on the dependent latent variable were tested.

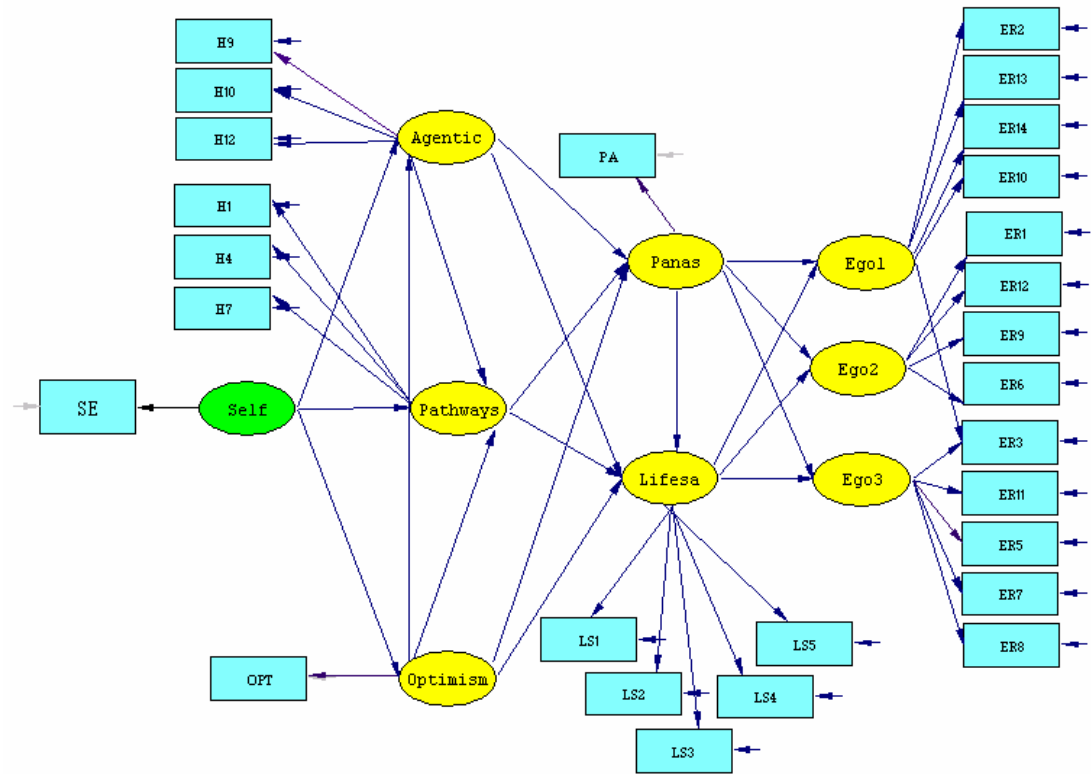


Figure 3.2 The conceptual diagram of the hypothesized model

The model was tested using Maximum Likelihood estimation method. A covariance matrix was also utilized in the analysis. In addition to the goodness of fit statistics, the significance of the hypothesized paths in the model was taken into account regarding *t*-test results. The result indicated that all direct path coefficients from predictor variables to the criterion variables were not significant in the path diagram except five paths. Figure 3.3 represents the coefficients in standardized values, significant and non-significant paths. The non-significant paths are shown in red lines in the Figure 3.3. The standardized coefficients with factor correlates and *t*-values for the model were provided in Appendix F (Figure F 1.1; Figure F 1.2).

The parameters that represented “correlated errors among subscales of the same measurement instruments” (Byrne, 1994, p. 163) were estimated for the dependent latent variables. That is to say, since the representations of resilience (*Ego Resilience 1*, *Ego Resilience 2*, *Ego* and *Ego Resilience 3*) are expected to be highly related to each other, dependent latent variables were let to correlate in the model. In fact, most of the variables are the positive attributes of the personality and, obtaining significant correlations among the variables to some extent was highly expected.

According to the first part of the model, the path coefficients of estimated parameters from *self-esteem* to the cognitive variables (*optimism*, *agentic thinking* and *pathways*) were significant. The path from *self-esteem* to *optimism* had a coefficient value of .51. The paths from *self-esteem* to *agentic thinking* and *pathways* had significant path coefficients (.67 and .30 respectively).

Possible relationships between cognitive variables were also estimated in the model. The path from *agentic thinking* to other sub-construct of hope, *pathways* was not significant (.24). Consistent with the hypothesis that optimism is significantly related to hope, the paths from *optimism* to the variables representing dispositional hope were significant. The standardized path coefficients were .25 and .33 for *agentic thinking* and *pathways* respectively.

The assumption of the specified model derived from the cognitive-affective link that was explained in the first chapter. The parameters from cognitive variables (*optimism*, *agentic thinking* and *pathways*) to affective variables (*life satisfaction* and *positive affect*) were estimated. Of the six estimated parameters assessing the cognitive-affective link, two were not significant. Path from *pathways* to *life satisfaction* (.15) and path from *optimism* to *positive affect* (.01) were non-significant in the model.

As indicated by Figure 3.3, one of the paths from the variables forming dispositional hope to *life satisfaction* was significant (.61 for *agentic thinking*) while the other path

was non-significant (.15 for *pathways*). On the other hand, both *agentic thinking* and *pathways* were the significant predictors of *positive affect* (.50 and .33; respectively).

Surprisingly, the path indicating *optimism* that had a non-significant relationship with *positive affect* produced a very low standardized path coefficient (.01). In addition, the path from *positive affect* to *life satisfaction* was not significant (.11) whereas *optimism* had a significant path pointing to *life satisfaction* (.34).

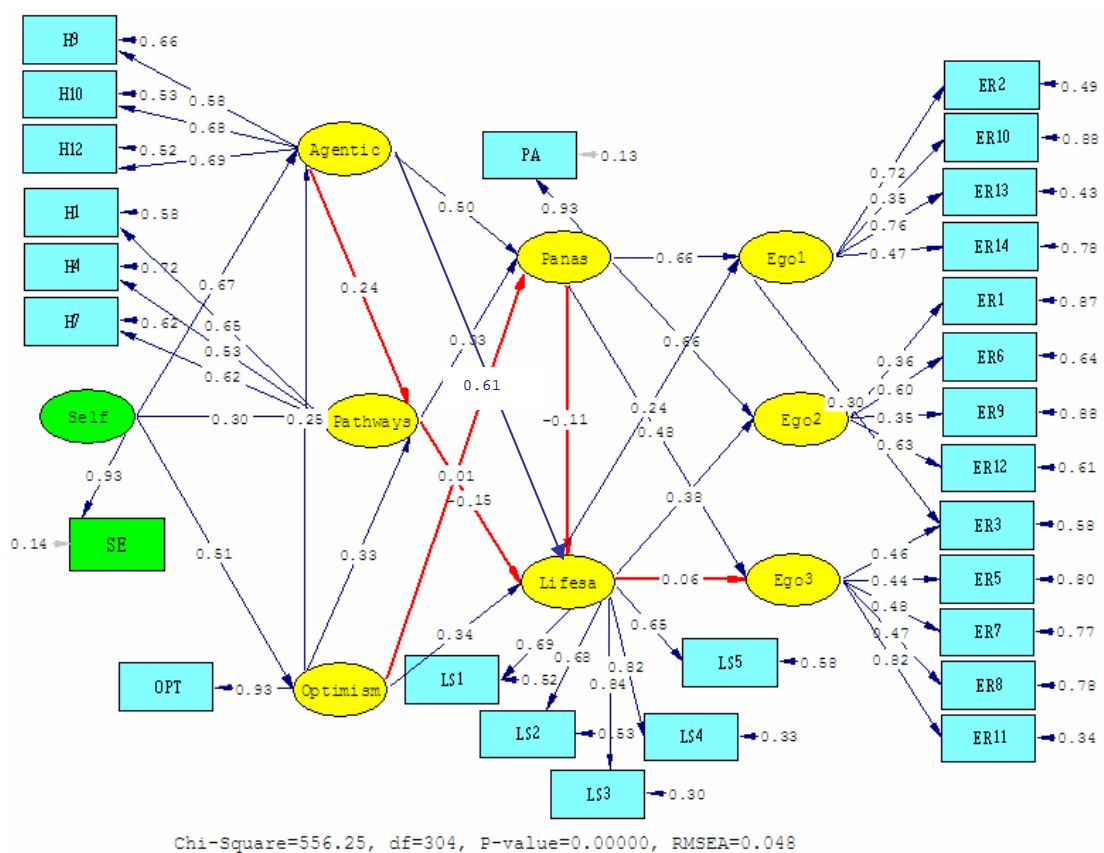


Figure 3.3 The coefficients in standardized values for the hypothesized model

In the final part of the model, the six paths from *life satisfaction* and *positive affect* pointing to each representation of resilience were estimated. Only one path coefficient was non-significant. The path coefficient from *life satisfaction* to *Ego*

Resilience 3 (.06) was not significant. On the other hand the rest of the paths pointing the three representations of resilience were significant (see Figure 3.3).

According to the model, *life satisfaction* seems to be related to *Ego Resilience 1* (.24) and *Ego Resilience 2* (.38). All the representations of resilience; *Ego Resilience 1* (.66), *Ego Resilience 2* (.66), and *Ego Resilience 3* (.48) were predicted by *positive affect*. Both *life satisfaction* and *positive affect* predicted *Ego Resilience 1* and *Ego Resilience 2*. These results clearly indicated that *positive affect* was a strong predictor of components of resilience. As shown in Appendix F Figure F 1.2 five out of 45 paths were not significant in the third hypothesized model.

The goodness of fit measures indicated a good fit to the data. As presented in Table 3.5 the overall fit of the hypothesized model resulted in the following fit statistics: χ^2 (304, $N= 363$) = 556.25; $\chi^2 / df = 1.60$; RMSEA = .048; SRMR = .053, GFI = .90; AGFI = .87; CFI = .92. The results did suggest a satisfactory fit of the model to the data.

Table 3.5 Summary of fit indices for the initial structural model

Indexes	The Hypothesized Model	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen,1989)
χ^2 , df	556.25; 304	
χ^2 / df	1.60	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.048	Confidence Interval for RMSEA (0.042 ; 0.054)
SRMR	.053	SRMR < .05
GFI	.90	GFI > .90
AGFI	.87	AGFI > .90
CFI	.92	CFI > .90

Since the specified structural model did empirically sound well, the researcher decided to trim the hypothesized model in order to create an alternative model which explains the dependent variables better.

3.2.1 Model Trimming

The hypothesized model was trimmed by deleting the five non-significant paths and adding modifications to develop a better fitting, parsimonious model. Thus, a new nested model was generated and tested. In a similar vein, all the significant paths pointing to dependent and independent latent variables in the hypothesized model stayed in the trimmed model and dependent latent variables were let to correlate since they are the factors of resilience construct. The conceptual path diagram of the trimmed model is presented in Figure 3.6.

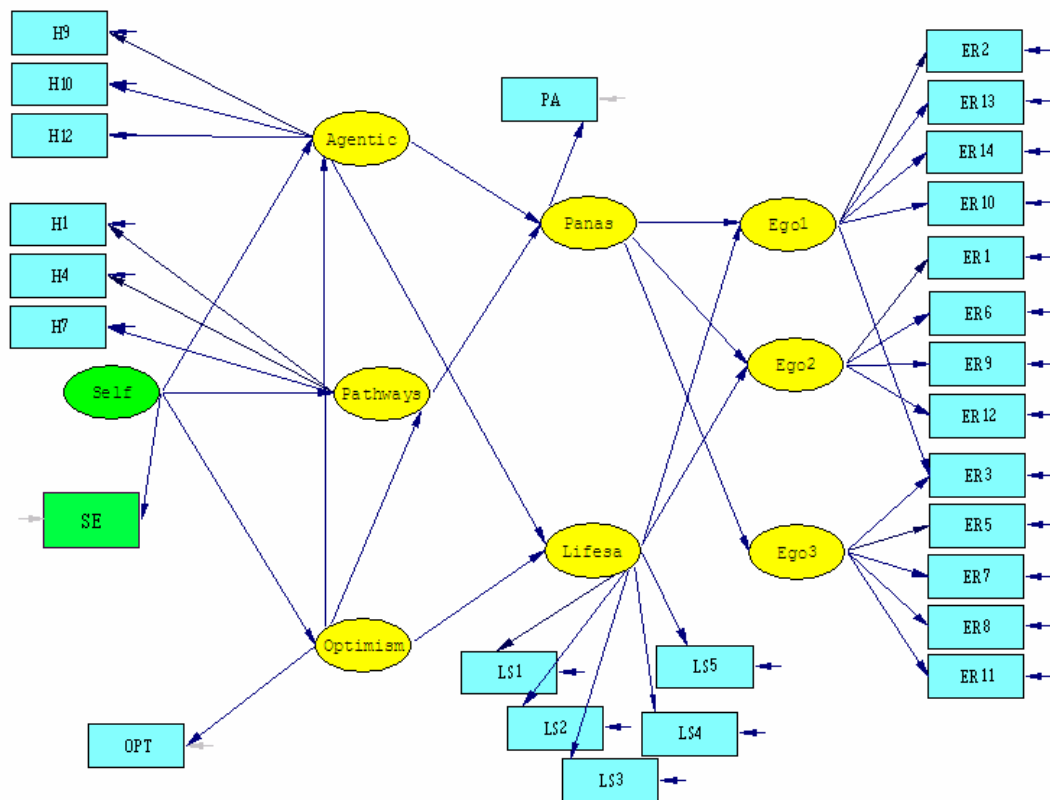


Figure 3.4 The conceptual diagram of the trimmed structural model

In order to improve the trimmed model, only one error covariances was set to be freely estimated (correlated), according to the Lagrange multiplier test, yielding statistics very crucial to pinpointing the misfit in misspecified models (Byrne, 1994).

That is, the error covariance between ER11 (*Yeni ve farklı şeyler yapmaktan hoşlanırım*) and ER8 (*Bir çok insandan daha meraklıyım*) was added to the model. Since these two items were very similar, it was reasonable to let them correlate. Since the goodness of fit statistics showed acceptable fit to the data, no further modifications were undertaken.

After this parameter of error covariances were set free, there was a slightly drop in the chi-square and minor increase in the other goodness of fit measures. The trimmed model which includes many estimated parameters appeared theoretically and empirically meaningful, although sample size of the present study was relatively small. Based on this limitation, for the purpose of avoiding estimation error, the researcher decided to assess the overall fit of the trimmed model by adding an additional goodness of fit statistic which was not sensitive to sample size.

Conventionally, a model having a good fit to the data yields a small chi-square with a non-significant probability. However, it is widely acknowledged that the chi-square likelihood ratio test is sensitive to large sample sizes; therefore, a revised NFI that takes sample size into account should be the index of choice (Bentler, 1990; Byrne, 1994). The NNFI and CFI have been believed as robust to sampling characteristics. Thus, in order to evaluate the overall fit of the trimmed model, NNFI was included in the criteria of goodness of fit statistics.

The results of the goodness of fit statistics [$\chi^2(308, N=363) = 554.49$; $\chi^2/df = 1.80$; RMSEA = .047; SRMR = .053, GFI = .90; AGFI = .88; CFI = .92; NNFI = .91.] did provide an adequate evidence for the overall fit of the trimmed model. All the estimated parameters produced significant *t*-values and the ratio between chi-square and *df* was within the acceptable limits (see Figure 3.5). In addition, the goodness of fit statistics indicated that the model did fit well to the data. The standardized coefficients were presented in Figure 3.5 for the trimmed model.

The results, as displayed in Table 3.6, suggested that the trimmed model also yielded acceptable goodness of fit indices and the entire fit indices reached similar values in the trimmed model. All standardized structural path estimates were significant in the predicted direction, ranging from .22 to .82 ($p < .01$).

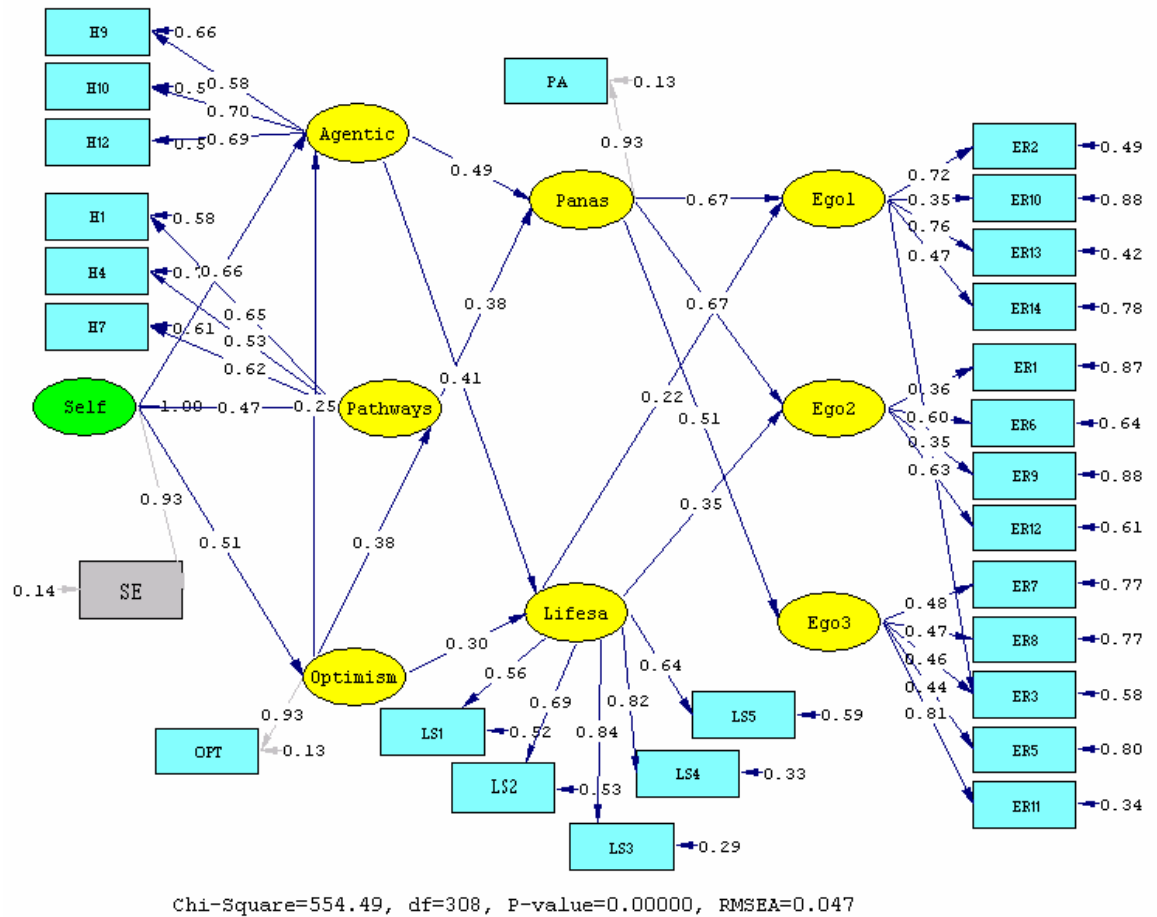


Figure 3.5 The coefficients in standardized values for the trimmed model

Table 3.6 Summary of fit indices for the trimmed structural model

Indexes	The Hypothesized Structural Model	The Trimmed Structural Model	Criteria (Schmacker & Lomax, 1996; Bentler, 1990; Bollen, 1989)
χ^2 , df	556.25; 304	554.49; 308	
χ^2 / df	1.60	1.80	$\chi^2 / df < 3$ (Kline, 1998)
RMSEA	.048 (0.042 ; 0.054)	.047 (0.041 ; 0.053)	90% Confidence Interval for RMSEA
SRMR	.053	.053	SRMR < .05
GFI	.90	.90	GFI > .90
CFI	.92	.92	CFI > .90
NNFI	.91	.91	NNFI > .90
AIC	704.25	694.49	Smaller value better fit

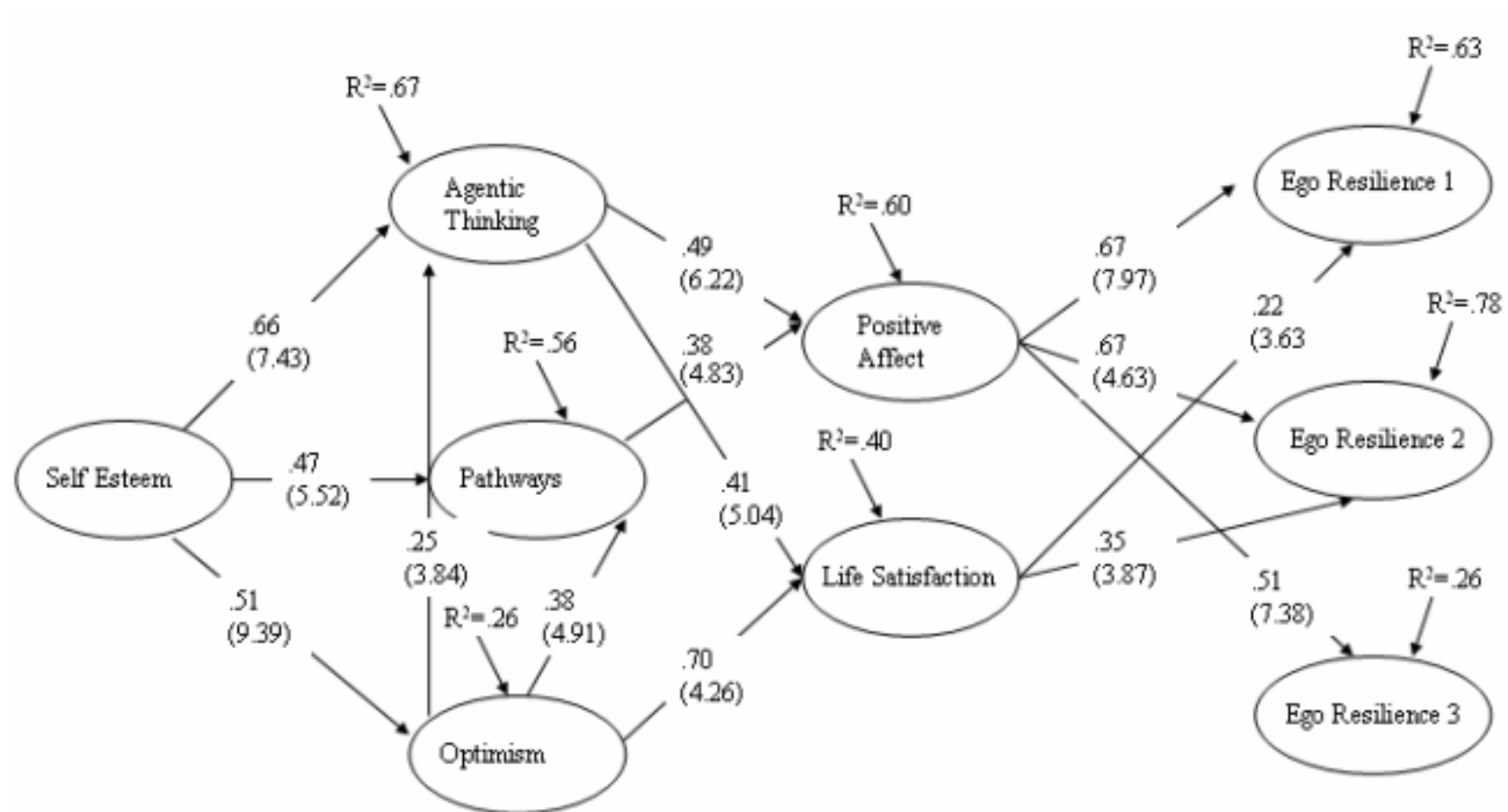


Figure 3.6 The structural model of psychological resilience

Figure 3.6 depicts the estimated parameters in the finalized model where path coefficients were in standardized values and t -values. R^2 values for the each latent variable were provided in the figure. Obtained t -values are also provided in parentheses.

In addition, the coefficients in standardized values and t -values with the modification for the trimmed model were provided in Appendix F (Figure F 1.3; Figure F 1.4). Table 3.10 presents standardized path coefficients (estimates), t -values and squared multiple correlations for the trimmed structural model. Path coefficients of observed variables with respect to related latent variables can also be seen in Table 3.7. All the estimated parameters produced significant t -values.

Table 3.7 Standardized estimates, t -values and squared multiple correlations for the trimmed model

OBSERVED VARIABLES	λ estimates	t values	R^2
Personal strenghts relating recovery (ER1)			
02.Beni allak bullak eden durumların üstesinden çabucak gelirim ve kısa sürede kendimi toparlarım.	.53	10.54	.51
10.Harekete geçmeden önce genellikle etraflıca düşünürüm.	.26	5.76	.12
13.Kendimi rahatlıkla oldukça “güçlü” kişiliğe sahip biri olarak tanımlayabilirim.	.57	10.77	.58
14.Birine kızdığımda, makul bir sürede bunun üstesinden gelirim.	.36	7.65	.22
Interpersonal Insight (ER2)			
01.Arkadaşlarıma karşı cömertimdir.	.23	4.33	.13
06.Çok enerjik bir insan olarak tanırım.	.50	5.11	.36
09.Tanıştığım insanların çoğu sevilebilecek ve canayakın kişilerdir.	.24	4.30	.12
12.Günlük yaşantım ilgimi çeken ve beni mutlu eden şeylerle doludur.	.45	5.14	.39
Openness to new experience (ER3)			
03.Yeni ve alışılmadık durumlarla uğraşmak hoşuma gider.	.40	7.51	.42
05.Daha önce hiç tatmadığım yeni yiyecekleri denemekten hoşlanırım.	.43	7.69	.20
07.Daha önceden bildiğim bir yerlere giderken her seferinde farklı yollar kullanmayı severim	.41	8.46	.23
08.Bir çok insandan daha meraklıyım.	.39	8.27	.23
11.Yeni ve farklı şeyler yapmaktan hoşlanırım.	.63	13.40	.66

Table 3.7 (continued)

Agentic Thinking			
09.Geçmiş yaşantılarım beni geleceğe iyi biçimde hazırladı.	.44	8.63	.34
10.Hayatta oldukça başarılı olmuşumdur.	.45	9.69	.49
<i>Table 3.7 continued</i>			
12.Kendim için koyduğum hedeflere ulaşıyorum.	.45	9.65	.48
Pathways			
01.Sıkıntılı bir durumdan kurtulmak için pek çok yol düşünebilirim.	.38	8.85	.42
04. Herhangi bir problemin bir çok çözüm yolu vardır.	.32	7.84	.28
07. Benim için çok önemli şeylere ulaşmak için pek çok yol düşünebilirim.	.42	8.69	.39
Life Satisfaction			
01.Yaşamım idealime büyük ölçüde yaklaşıyor.	.62	9.24	.48
02.Yaşam koşullarım mükemmel.	.71	13.31	.47
03.Yaşamımdan memnunum	.90	16.79	.71
04.Yaşamda şu ana kadar istediğim önemli şeylere sahip oldum.	.91	16.26	.67
05.Yaşamımı bir daha yaşasaydım hiç bir şeyi değiştirmek istemezdim.	.81	12.32	.41

The total variance explained by the finalized model in three representations of resilience was rather high for two subscales. R^2 values were .63, .78 and .26 for three factors of Ego Resilience respectively. All the R^2 values for the structural equations used in the model were listed in Table 3.11.

Table 3.8 Squared multiple correlations for structural equations

	ER1	ER2	ER3	Agency	Pathways	LifeSa	PosAffect	Optimism
R^2	.63	.78	.26	.67	.56	.40	.60	.26

When two models are nested in sequence, the difference between the two is tested using $\chi^2_{\text{difference}}$ test (Kelloway, 1998). The difference between the two chi square values was equal to 1.76. Chi-square difference test indicated that the trimmed model was not significantly different than the hypothesized model. [$\chi^2_{\text{diff}}(4, N = 363) = .779; p < .01$]. Chi square difference test result indicated that the additional parameter did not significantly improve the model. However, several fit indices are used to consider the degree of parsimony in the model. The Akaike Information Criterion (AIC) which is a measure of parsimonious fit (Kelloway, 1998) is helpful index to

use when comparing competing models (Tabachnick & Fidell, 2001). This index helps to choose the most parsimonious model. Between two AIC measures, smaller values indicate the model with a better fit. In order to provide supplementary evidence for the results indicating that the finalized model has a better fit than the third hypothesized model, the model AIC value was taken into account. The model AIC was smaller in the finalized model, as presented in Table 3.6. In addition, since all the non-significant paths were removed from the structural model, the trimmed model was suggested and it will be called as finalized model in the subsequent sections.

The steam leaf plot depicts that standardized residuals are centered around zero and symmetrically distributed and a symmetrical steam leaf plot with most in the middle and fewer in the tail is an indicator of a good model (Jöreskog & Sörbom, 1993). The steam leaf plot is presented in Figure 3.7.

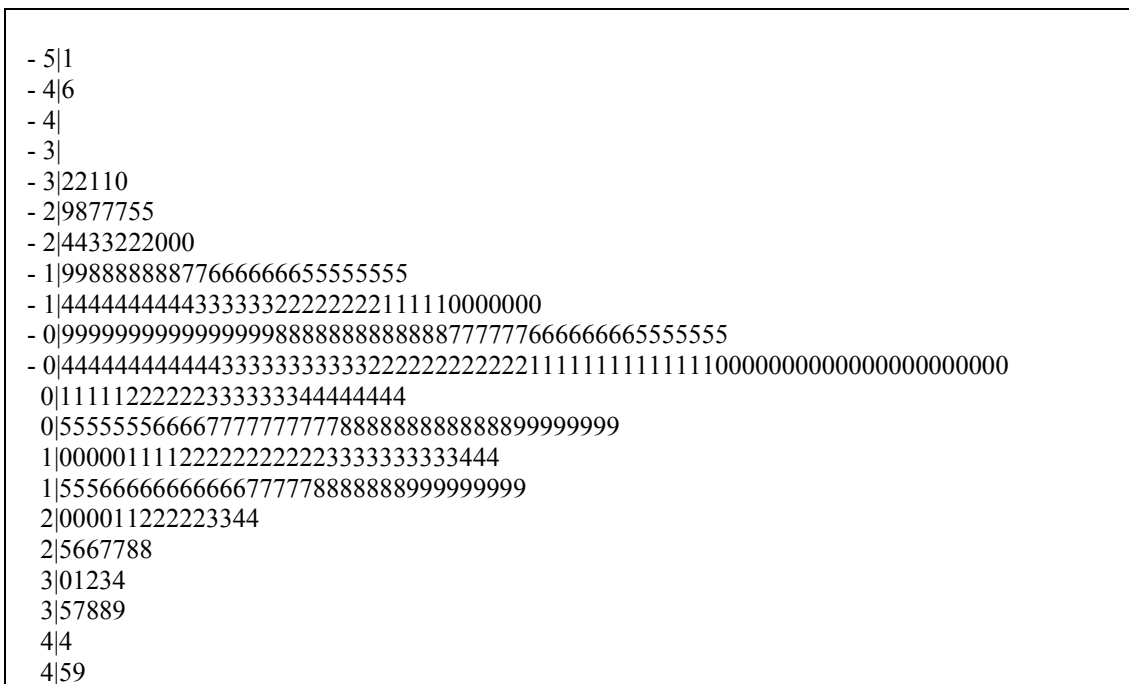


Figure 3.7 The Stemleaf Plot of Standardized Residuals of the Finalized Model

A path coefficient is a standardized regression coefficient showing the direct effect of an independent variable on a dependent variable in the path model. The absolute magnitudes of path coefficients above .50 indicate a large effect size while path coefficients less than .10 indicate a small effect size. Finally, medium effect is determined by path coefficient values around .30. When interpreting the effect size of estimated parameters, this guideline was considered. The standardized total effect of the latent variables on the observed variables is presented in Table 3.9.

Table 3.9 Standardized total effects of the latent variables on the observed variables

	Ego2	Ego1	Ego3	Agentic	Pathways	PosAffect	Optimism	LifeSa
Pos Affect				2.16	1.66	4.43	1.17	
Optimism							4.53	.58
LS1				.44			.28	.67
LS2				.27			.27	.85
LS3				.35			.34	.85
LS4				.35			.34	.76
LS5				.31			.30	
H1					.38		.14	
H4					.32		.12	
H7					.41		.16	
H9				.43			.11	
H10				.44			.11	
H12				.44			.11	
ER1	.23			.11	.06	.15	.07	.08
ER2		.53		.22	.13	.35	.14	.12
ER3		.26	.40	.21	.14	.38	.12	.06
ER5			.43	.11	.08	.22	.06	
ER6	.50			.24	.13	.34	.16	.18
ER7			.41	.10	.08	.21	.06	
ER8			.39	.10	.08	.20	.05	
ER9	.24			.11	.06	.16	.08	.08
ER10		.26		.11	.06	.17	.07	.06
ER11			.63	.16	.12	.32	.08	
ER12	.45			.21	.11	.30	.14	.16
ER13		.57		.24	.14	.38	.15	.12
ER14		.36		.15	.09	.24	.10	.08

3.2.1.1 Direct Relationships

The structural equation indicated that *self esteem* was directly related to the three cognitive variables, and those estimated paths produced significant *t*-values (see Figure 3.7). *Self-esteem* has large total effects on *agentic thinking* (.79); *pathways* (.67) and *optimism* (.51). As can be followed through Table 3.10, it can be concluded

that three cognitive oriented variables significant predictors of *self esteem* by interpreting the relatively large path coefficients and significant *t*-values.

Two structural equations setting the two direct relationships from *optimism* to the variables representing dispositional hope (*agentic thinking* and *pathways*) were estimated. The results showed that *optimism* was significantly and directly related to both *agentic thinking* (.25) and *pathways* (.38). The two paths produced medium size path coefficient value with medium size effect (see Table 3.10 and Figure 3.7).

Optimism was significantly and directly related to *life satisfaction* as well. As presented in Table 3.10 and Figure 3.7, even the path coefficient was large (.70) enough the effect size was moderate (.40).

Another structural equation assessed the direct relationship between cognitive oriented variables (*agentic thinking* and *pathways*) and affective variable, *positive affect*. As displayed in Figure 3.7, both paths were significant, that is to say, *agentic thinking* (.49) and *pathways* (.38) forming dispositional hope is predictors of *positive affect*. Additionally, a direct path from *agentic thinking* to *life satisfaction* was significant with a medium size magnitude (.41).

Finally, the structural equations included in the model assessed the direct relationships from *life satisfaction* and *positive affect* variable pointing out the representations resilience (see Figure 3.7). As can be seen in the Figure 3.7, the three direct paths from *positive affect* to the three representations (*Ego Resilience 1*, *Ego Resilience 2*, and *Ego Resilience 3*) of resilience were significant. The path coefficients were .67, .67 and .51 respectively. The direct influences of *positive affect* on the three representations (*Ego Resilience 1*, *Ego Resilience 2*, and *Ego Resilience 3*) were approximately moderate (Table 3.10).

On the other hand, among the three direct paths from the conjoint cognitive-affective variable of *life satisfaction*, to the three representations (*Ego Resilience 1*, *Ego Resilience 2*, and *Ego Resilience 3*), only two paths were significant. That is to say, *life satisfaction* was a predictor of *Ego Resilience 1* and *Ego Resilience 2*. The standardized total effects of *life satisfaction* on *Ego Resilience 1* (.22) and *Ego Resilience 2* (.35) were relatively small although the related *t*-value was significant. Rather than the conjoint cognitive-affective variable of *life satisfaction*, an affective variable, *positive affect*, seems to be a stronger predictor of resilience. It has the largest path coefficients in the finalized model. The standardized total and indirect effects of latent variables were listed in Table 3.10.

Table 3.10 Standardized total and indirect effects of latent variables

	Agentic Thinking	Pathways	PosAff	Optimism	LifeSa	Self Esteem
Total Effects						
ER2	.47	.25	.67	.32	.35	.59
ER1	.42	.25	.67	.26	.22	.53
ER3	.25	.19	.51	.14		.33
Agentic Thinking				.25		.79
Pathways				.38		.67
PosAff	.49	.38		.26		.64
Optimism						.51
LifeSa	.41			.40		.48
Indirect Effects						
ER2	.47	.25		.32		.59
ER1	.42	.25		.26		.53
ER3	.25	.19		.14		.33
Agentic Thinking						.13
Pathways						.20
PosAff				.26		.64
Optimism						
LifeSa				.10		.48

3.2.1.2 Indirect Relationships

Considering the indirect relationships among latent variables all the indirect relationships were significant and in the theoretically expected directions. The *self esteem* variable had the largest and significant indirect effect on the latent variable, *positive affect* (.64) which goes through the *agentic thinking* and *pathways*. The

second largest indirect effect (.59) was on *Ego Resilience 2* and the path came from *self esteem* while *agentic thinking*, *pathways* and *positive affect* were mediators between two (see Table 3.10). In a similar vein, *Self esteem* has also large indirect influence on *Ego Resilience 1* (.53); however it has rather a small indirect effect on *Ego Resilience 3* (.33).

The model estimated indirect relationships between cognitive variables (hope and optimism) and resilience. Firstly, as presented in Table 3.10, the cognitive variable *agentic thinking* has large indirect effects on the dependent latent variables (*Ego Resilience 1*, *Ego Resilience 2*, and *Ego Resilience 3*), while *positive affect* was a mediator (.42; .47; .25 respectively). Secondly, the magnitude of indirect effects of other hope variable, *pathways* on the dependent latent variables (*Ego Resilience 1*, *Ego Resilience 2*, and *Ego Resilience 3*), were smaller (.25; .25; .19 respectively). Lastly, the indirect effects of optimism on the three dependent outcome variables were moderate for *Ego Resilience 1* and *Ego Resilience 2* (.32; .26; .14 respectively). The effect size of the path coefficient indicating the indirect relationship between *optimism* and *Ego Resilience 3* was relatively small (.14). In all three parameter estimates *life satisfaction* and *positive affect* played the mediator roles. The magnitude of the path indicating the indirect relationship between *optimism* and *positive affect* was moderate (.26).

When either direct or indirect effects of *self esteem* on the other latent variables were taken into consideration all the path coefficients indicated considerable impacts and, the magnitude of those paths were large enough except the path specifying the indirect effect from *self esteem* to *Ego Resilience 3* (.33). That is to say, it has the smallest effect on *Ego Resilience 3*. The highest magnitude was .79 which demonstrated a strong relationship between *agentic thinking* and *self esteem*. The indirect effect of *self esteem* on *life satisfaction* was .48 (see Table 3.10).

Considering the indirect effects of latent variable on the indicators (items of *Ego Resilience Scale*) of the three dependent latent variables (*Ego Resilience 1*, *Ego Resilience 2*, and *Ego Resilience 3*), positive *affect* seems to have considerable effects on all the items in ER scale. The largest impact came from *positive affect* to *ER13* and *ER3* (.38), as shown in Table 3.11. The second largest influence of *positive affect* was on *ER2* (.35). According to the results, the weakest effect size was on *Er1* (.15)

Table 3.11 Standardized indirect effects of latent variables on observed variables

	Ego2	Ego1	Ego3	Agentic	Pathways	PosAffect	Optimism	LifeSa
Pos Affect				2.16	1.66		1.17	
Optimism								.58
LS1				.24			.28	.67
LS2				.27			.27	.85
LS3				.35			.34	.85
LS4				.35			.34	.76
LS5				.31			.30	
H1							.14	
H4							.12	
H7							.16	
H9							.11	
H10							.11	
H12							.11	
ER1				.11	.06	.15	.07	.08
ER2				.22	.13	.35	.14	.12
ER3				.21	.14	.38	.12	.06
ER5				.11	.08	.22	.06	
ER6				.24	.13	.34	.16	.18
ER7				.10	.08	.21	.06	
ER8				.10	.08	.20	.05	
ER9				.11	.06	.16	.08	.08
ER10				.11	.06	.17	.07	.06
ER11				.16	.12	.32	.08	
ER12				.21	.11	.30	.14	.16
ER13				.24	.14	.38	.15	.12
ER14				.15	.09	.24	.10	.08

Regarding the effect sizes of the relationships between *agentic thinking* and the items in ER scale, similar results were obtained. The two largest effect sizes of *agentic thinking variable* were on *ER13* and *ER6* (.24). The indirect relationships between *agentic thinking* and *ER7* and *ER8* had the lowest effect sizes (.10) (see Table 3.11).

The second hope variable, *pathways* has the largest effect on *ER13* and *ER3* (.14); however, the smallest effect was on the *ER1*, *ER9* and *ER10* (.06).

As can be followed in Table 3.11, while taking the impacts of *optimism* on the items in ER scale into consideration, the largest effect was on *ER6* (.16) and the second largest impact was on *ER13* (.15) while the indirect relationships between *optimism* and *ER7* (.06) and *optimism* and *ER7* (.05) had the lowest effect size .

As consistent with the finalized model suggesting that positive affect is strong predictor of resilience, it can also be concluded that positive affect has larger impacts on the items in ER scale than other variables.

CHAPTER IV

DISCUSSION

A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.
— *Sir Winston Churchill*

This final chapter covers the main conclusions of the study, the practical implications for counseling practice and research, and recommendations for future research. The model tested in the scope of this study was discussed in detail. In addition, although the adaptation of the Ego Resilience Scale was not one of the goals of the present research a summary regarding the psychometric properties of the scale with disaster survivors was provided in the conclusion section for the sake of clarity and convenience.

4.1 Conclusions

Recently, there has been a growing research interest in resilience that was considered as a crucial factor for adjustment following trauma. Resilience has been described as the ability to overcome high loads of stressful events such as trauma, death or loss (Agaibi & Wilson, 2005). Considering that resilience is a research area which has been rarely studied in Turkey; the researcher first reviewed the existing literature in detail to decide the mostly correlated variables and personal qualities to be included in the study. It is assumed that the personal qualities have vital roles in exploring the pathways toward resilience. In general, the broad purpose of this study is to enlighten the concept of resilience by assessing the relationships among affective and cognitive variables that possibly contribute to resilience among natural disaster survivors.

The main assumption of the study was that positive personal qualities might be associated with better psychological adjustment. Depending on this postulation, the present study aimed at generating a fitted theoretical model accounting for resilience with regard to personal qualities. The hypothesized model and the model derived from the hypothesized model were tested to explore the relationship patterns among the personal qualities affecting resilience.

4.1.1 The Psychometric Properties of Ego Resilience Scale

First of all, since the Ego Resilience Scale was a one-factor model in the original study and in some other studies (Fredrickson et al., 2003; Tugade, & Frederickson, 2004) a single factor solution for Ego Resiliency Scale was tested first; however, although the result of the single factor solution for the Ego Resiliency Scale was not reported in the study, the confirmatory factor analyses results did not support the single factor solution. As the multidimensional nature of the resilience concept was stated by the original authors, (Block & Kremen, 1996) in the following step the dimensions that could be differentiated in the scale were explored using factor analysis. Exploratory factor analysis yielded a three-factor solution for Turkish disaster survivors. The factors were labeled as *Personal Strengths Relating to Recovery*; *Positive Self-Appraisals* and *Openness to New Experience*.

According to confirmatory factor analyses, multiple fit indices confirmed the three-factor model for Ego Resilience Scale obtained through exploratory factor analyses; however, it suggested slight modifications. Although all the items loaded sufficiently and significantly on their respective factors the present researcher is concerned about the problems associated with the translation of two items (*item 9* and *10*) items. Despite not receiving any negative feedback from the participants about the clarity of those two items, more accurate expressions of those two items might be needed to deal with such issues for future reevaluations. Since those two items that relates with positive perception of others (*Most of the people I meet are likable*) and represents the planning ability of a person (*I usually think carefully about something before*

acting) may well be the reasonable representations of resilience. The revisions in translations may be provided and the factor structure may be retested.

As expected, Ego Resilience scores were significantly correlated with the scores gained from its sub-dimensions, *Personal Strengths Relating to Recovery*, *Positive Self-Appraisals* and *Openness to New Experience*. *Personal Strengths Relating to Recovery* correlated with both *Positive Self-Appraisals* and *Openness to New Experience*. The correlation between *Positive Self-Appraisals* and *Openness to New Experience* was significant as well. Inter-factor correlations were moderate, however; the correlations between Ego Resilience and three factors were much stronger than inter-factor correlations. These results suggested that the factors are correlated but could be considered as separate factors.

The results of reliability efforts also showed satisfactory internal consistency and stability for the scale. Of significance, this study is the first attempt in adapting an adult resilience scale into Turkish. Overall, despite its aforementioned drawbacks, the results revealed that Ego Resiliency scale is a valid and reliable measure of psychological resilience.

4.1.2 The Hypothesized Model Accounting for Resilience

Before the model testing step, the correlation matrix regarding the latent variables that showed the relationships among personal qualities and resilience were investigated. The results revealed that the strongest associations were between the two resilience components (*Personal Strengths Relating to Recovery*, *Positive Self-Appraisals*) and positive affect. In fact, the correlations between the same resilience components and rest of the variables appeared to be strong enough. The results also suggested that pathways and life satisfaction were significantly correlated with two resilience components, but produced smaller correlation coefficients. The magnitude of the association between life satisfaction and the two resilience components was weaker than the other variables, but still significant. The correlation coefficients were

satisfactory for all associations. The last component of resilience, *Openness to New Experience*, seemed to have weaker associations with the examined personal qualities than do the other two components. Positive affect had the strongest association and life satisfaction had the weakest association with the third component of resilience.

Regarding the correlations among independent variables, the correlation coefficients were significant and in the theoretically meaningful directions. For instance, positive affect was correlated with life satisfaction ($r=.35$) which was similar the correlation coefficient ($r = .40$ to $.50$) reported by Lucas et al (1996).

4.1.2.1 The Hypothesized Model and the Trimmed Model

The assumption stating that self esteem would provide a foundation for cognitive based personal qualities, hope and optimism, to predict resilience was supported by the results of the hypothesized model. The underlying principle of the model was to discriminate the personal qualities based on their nature that is cognitive, affective or combined. Hope (pathways and agentic thinking) and optimism are regarded as cognitive constructs, life satisfaction is accepted as a conjoint cognitive-affective construct, and positive affect is considered as an affective construct. The relationships among the variables in the hypothesized model were based on this categorization. The mediating effects of those constructs on resilience were presumed; consequently the indirect effect of self esteem on resilience was scrutinized.

With the assumption that our thoughts are influential on our feelings (Cormier & Cormier, 1998) initially, the association between self esteem and optimism and the association between self esteem and hope were examined. Consecutively, these cognitive constructs may be related to the emotional constructs, positive affect and life satisfaction. In turn, they would all impinge on resilience, which implies that self

esteem, hope and optimism would have indirect effects on resilience whereas positive affect and life satisfaction would have direct effects on resilience.

The results revealed that self esteem significantly predicted optimism and hope variables (pathways and agentic thinking). Optimism also significantly predicted both pathways and agentic thinking; thus it seems that optimism is associated with dispositional hope. Concerning the significance of the relationships between cognitive variables and emotional related constructs, there were significant associations between hope variables and positive affect. In addition, optimism and agentic thinking were significantly related to life satisfaction. On the other hand, surprisingly, the association between optimism and positive affect and the association between pathways and life satisfaction were not significant.

Moreover, in the hypothesized model, positive affect was significantly related to all dimensions of resilience; *Personal Strengths Relating to Recovery*, *Positive Self-Appraisals* and *Openness to New Experience*. These results clearly indicated that positive affect made an important contribution to resilience. Furthermore, although life satisfaction was a predictor of *Personal Strengths Relating to Recovery* and *Positive Self-Appraisal*, it did not predict the third dimension of resilience, namely, *Openness to New Experience*. In conclusion, the hypothesized model suggested some theoretically meaningful relationships and the results did provide a good fit to the data. However, since there were some non-significant paths in the model, model trimming was followed.

The hypothesized model was trimmed and some theoretically justified modifications have been done. The trimmed model produced satisfactory goodness of fit values. According to the chi-square difference test, the trimmed model and the hypothesized model did not differ. Unlike the hypothesized model, the trimmed model did not have any non-significant paths. Moreover, the hypothesized relationships were thoroughly meaningful in terms of theoretical reasoning. Hence, the trimmed model

was suggested as the finalized model to account for psychological resilience among the Turkish disaster survivors.

All the hypothesized relationships among personal qualities and resilience were significant in the finalized model. The explained variances for the first two dimensions of resilience (*Personal Strengths Relating to Recovery*, *Positive Self-Appraisals*) were pretty high. It might be concluded that the selected personal qualities were rather relevant to *Personal Strengths Relating to Recovery* and *Positive Self-Appraisals* dimensions of resilience than the *Openness to New Experience* dimension. It is noteworthy that there may be some confounds that might explain the *Openness to New Experience* dimension better.

Considering the proportions accounted for the total variance for each latent variable in the finalized model, the variables of agentic thinking, pathways, positive affect, and the two dimensions of resilience, *Personal Strengths Relating to Recovery* and *Positive Self-Appraisals* had the highest ratios. The remaining variables had relatively lower proportions. In this respect, the model suggests that, among all the variables, dispositional hope and positive affect were the strongest predictors.

4.2 Discussion Regarding the Finalized Model

The finalized model strongly supports the idea that positive affect is such an essential element in resilience that it predicts all dimensions of resilience. This finding is consistent with the assumptions of Fredrickson's (2001) "*Broaden and Build Theory*" regarding positive emotions. The theory posits that higher positive affect leads to broader competence to recover from stressful events. The results of the present study revealed that positive affect most strongly predicts the first dimension of resilience identified as *Personal Strengths Relating to Recovery*. However, this does not mean that positive affect is unrelated to the other two dimensions. On the contrary, positive affect seems to have significant relationships with other resilience dimensions, *Positive Self-Appraisals* and *Openness to New Experience*. These

findings verify that experiencing positive emotions may be crucial elements in the activation process of resilience following adverse events (Folkman & Moskowitz, 2000, Tugade, Frederickson & Barrett, 2004). Furthermore, the strong association found between positive affect and resilience is consistent with the findings reported by Tugade and Fredrickson (2004). Indeed, following terrorist attacks in the United States, research indicated that resilient individuals reported increases in psychological growth after the attacks. Positive emotions experienced after the attacks completely mediated the relationship between resilience and coping variables (Tugade & Fredrickson, 2004).

The results also showed that life satisfaction was another predictor of resilience, only predicting the first and second dimension, *Positive Self-Appraisals*. Although life satisfaction was not a strong predictor of resilience as much as the positive affect, the results demonstrated that life satisfaction also contributed to resilience.

When assessing the indirect effects suggested by the model (see Table 3.13), positive affect mediates the effect of dispositional hope on all dimensions of resilience. The largest effect was on *Personal Strengths Relating to Recovery* and *Positive Self-Appraisals*. Its effect on the third dimension, *Openness to New Experience*, was medium. This indirect relationship going through a mediator variable can be interpreted as hopeful individuals are likely to experience positive feelings that in turn, may generate resilience. Overall, the findings of the current study supported that hope was positively related with resilience. Similar results were obtained in a previous study (Irving, Telfer, & Blake, 1997) which proposed that dispositional hope provides a beneficial effect in the face of combat-related trauma.

Similarly, the cognitive construct, optimism seems to have indirect medium effects on resilience through life satisfaction. However, those effects were smaller than the effects of hope variables; the smallest being on the third dimension, *Openness to New Experience*. The largest effects of both optimism and agentic thinking were

observed on the second dimension, *Positive Self-Appraisals*. The indirect relationship between the second dimension of resilience; *Positive Self-Appraisals* and optimism through life satisfaction might be interpreted as individuals who hold optimistic views are more likely to experience greater life satisfaction that in turn, may facilitate resilience.

Another important finding indicates that hopeful individuals are likely to experience positive emotions, which is stressed in Hope Theory by Snyder and his colleagues (1991a). According to Hope Theory, emotions are “the squeal of cognitive appraisals of goal-related activities” (p. 571). It can be commented that positive emotions are the outcomes of being hopeful, which requires striving toward to attain specific goals.

Regarding the finalized model, the question that might be asked here is why one of hope variables, pathways, is not directly related to life satisfaction while optimism and other hope variable, agentic thinking strongly related to life satisfaction. A possible explanation comes from the definitions of hope, optimism and life satisfaction. Bryant and Cvengros (2004) that hope is more related to the personal attainment of specific goals, whereas optimism focuses more on positive reappraisal considering the expected quality of future outcomes in general. On the other hand, life satisfaction reflects the individual’s appraisal of his or her life as a whole (Diener, 2000). That is, the shared attribute in the definitions of optimism and life satisfaction, is that both appear to deal with cognitive appraisals in a holistic manner. However, the construct of hope seems to be more goal-specific. Hence, the absence of a direct relationship between hope and life satisfaction, despite the significant relationship between optimism and life satisfaction, might be warranted. Second, pathways is action-oriented variable which leads an individual to think about what actions need to be done in order to achieve a specific goal. Therefore, it might not be directly related to general evaluation of life.

The cognitive constructs, dispositional hope and optimism were significantly related to the super-ordinate construct, self-esteem. The suggested model depicts that those cognitive constructs are well-built contributors of self-esteem while hope is also a predictor of optimism. That is to say, individuals with higher self-esteem tend to be more optimistic and hopeful. Furthermore, all of these variables are indirectly related to resilience. These findings confirm the previous findings suggesting that hope, optimism, and confidence are the potential pathways to resilience (Luthans, Vogelgesang & Lester, 2006).

As mentioned in the first chapter, self-esteem is a pervasive force in human motivation that is generally adaptive and associated with a wide range of desirable outcomes (Pyszczynski et al., 2004). The findings of the present study reside in the same line with the general idea about self-esteem and suggest that self-esteem has both direct and indirect effects on hope, optimism, positive affect and resilience.

Indeed, self-esteem has indirect and large impacts on the first dimension of resilience, *Personal Strengths Relating to Recovery*. The indirect effect of self-esteem on the first dimension of resilience was mediated by dispositional hope variables and positive affect. In addition, self-esteem also has a large indirect effect on the second dimension, *Positive Self-Appraisals* as well. This time the mediators are optimism and life satisfaction. Finally, self-esteem has a relatively moderate indirect relationship with *Openness to New Experience* dimension of resilience through the mediators of hope and positive affect. In conclusion, the data suggest that there is a complex interaction between self-esteem and the dimensions of resilience by means of optimism, hope, positive affect and life satisfaction. A recent study (Benetti & Kambouropoulos, 2006) indicated that resilience exerted significant positive indirect effect on self-esteem via positive affect, but no significant direct relationships between resilience and self-esteem. The findings obtained in the present study confirmed the previous findings.

Moreover, self esteem has an indirect effect on positive affect while two hope variables mediate the relationship between the two whereas it is also indirectly related to life satisfaction while optimism is a mediator. This finding is consistent with the findings of an earlier study that demonstrated an association between self esteem and positive affect (Wood, Heimpel & Michela, 2003). Overall, it might be concluded that the finalized model reflected the fundamental role of self esteem in humans' life.

4.2.1 Concluding Remarks regarding Resilience

The supported link between self-esteem and resilience may indicate the vital role of those two concepts in promoting healthy personality development. The model further supports the idea of cognitions influence feelings. Basically, though keeping within the general framework of positive psychology, the logic of the model resides in cognitive behavioral approach. Briefly, the results regarding resilience generally suggest:

1. Resilience and self esteem are indirectly related.
2. Both life satisfaction and positive affect are predictors of resilience; however, positive affect seems to be the stronger predictor,
3. Optimism has a significant indirect relationship with resilience via life satisfaction,
4. Dispositional hope has a significant indirect relationship with resilience via positive affect.

4.3 Implications for Theory and Practice

Self-Actualization (Maslow, 1968) and *fully-functioning* person concepts derived from the earlier positive psychology approaches are the most familiar terms for counselor practitioners, counseling students and academicians in counseling departments. This study appreciates the view that human beings strive toward growth and development rather than only toward maintenance of stability (Maslow, 1970),

which is the main idea behind all humanistic approaches and positive psychology. The implications of this study serve for understanding how people could be helped to move toward becoming optimally functioning beings when faced with adversity.

The major goal of positive psychology is “to begin to catalyze a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities” (Seligman & Csikszentmihalyi, 2000, p.5). Likewise, contemporary counseling approaches propose an important counseling tool; positive assets search that helps people in their growth process. Many clients seeking for psychological help are most likely to feel weak and unable to find anything positive in life (Rathunde, 2001). In such cases, counselor use of positive asset search helps individuals to be aware of their strengths. Thus, in the long run, people may come to counseling and psychotherapy sessions to discover their potentials and discuss about their strengths instead of their weaknesses. The findings of the present study support the growth inducing role of positive qualities like positive affect, optimism and hope in the face of adversity.

It has been reported that psychological resilience was associated with the increase in other psychological resources, including life satisfaction, optimism and tranquility while positive affect played a mediator role in crisis situations (Fredrickson et al., 2003). According to the authors, resilience is “a host of other psychological resources” (p.373). Therefore, further exploration of resilience concept, which activates the psychological resources during and after crises within a comprehensive meta-theory, comes into consideration. The interplay of personal qualities in predicting resilience obtained from the suggested model in the present research might also contribute to the attempts in developing resilience theory as it did shed a light to the interactions of dispositional qualities in resilience.

The results of the current study may also shed a light for counseling theory and practice while discovering the human strengths. As suggested by Linley et al (2006), the results may contribute to positive psychology at *the pragmatic level* accounting

for the research methodologies and practical applications used by positive psychologists. The implications of the present study might be observed in the efforts striving for what makes people more resilient.

It is hoped that a better understanding of the relationship between human strengths and resilience which enables individuals to show better adaptation in face of the trauma will contribute to improved counseling efforts to enhance the personal qualities of clients and to increase optimal functioning. For example, positive coping strategies, positive reappraisals, constructive conflict resolution strategies, problem focused approaches, relaxation techniques, cognitive reframing, searching for positive meanings in daily events might be the therapeutic interventions following trauma. In a similar vein, Miller (2003) stressed the role of resilience in therapy setting; he offered some ways for conceptualizing resilience in therapy. He emphasized the role of therapist in drawing out client's strengths. He also claimed that resilience is applicable to all individuals who display the signs of better adjustment. Hence, this study agrees with the previous studies (Davidson et al., 2005) suggesting the need for the enhancement of resilience in therapeutic environment.

Holaday and McPhearson (1997) carried out a qualitative study with 39 individuals with severe burns and investigated the core elements of resilience among them. One burn survivor described resilience as "being deep inside of you, it's already there but you have to use it" (p.345). The suggested model accounting for the pathways toward psychological resilience agrees with the power of positive internal qualities in individuals. Of significance, individuals should be taught about how to call forth those qualities from inside when needed. In one study (Vanderpol, 2002); the author also clearly stated the importance of dispositional qualities in resilience from his point of view. He acknowledges that "...in the absence of certain inborn resilient qualities, instilling or developing resilience is difficult." Although the present researcher acknowledges the dispositional personal qualities she also agrees with the

following definition of resilience: “a developable capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress and increased responsibility” (Luthans, 2002, p. 702).

The debate in the literature about the nature of the resilience whether it is trait-like or process (Jacelon, 1997) appears to be a waste of time. Rather, research efforts are better to be directed toward unifying a resilience model after trauma, covering all different viewpoints. Particularly, the question, how inner protective mechanisms could be used for enhancing resilience against trauma, might be answered in future studies. Understanding resilience after trauma is also critical to developing successful post-trauma interventions.

The results of the present study may help to provide a framework for building positive qualities to make one’s life more meaningful. A latest study (King et al., 2006) has attached an existential dimension to the empirical findings related to positive affect. The results of the study showed that individuals with positive incline to feel that life is meaningful. Furthermore, positive emotions may increase sensitivity to the meaning relevance of a situation. Since our results strongly suggest that positive affect has a great impact on resilience, existential themes might be influential on resilience as well. Although this study was carried out with adults, school counselors might also benefit from what the findings imply, since generally the findings suggest the importance of installation of hope for healthy and resilient outcomes. Conclusively, the counseling centers at universities might find useful hints in the study. When working with clients who feel desperate or pessimistic, they can infuse the main suggestions of the present study into their ways of helping.

The results of the study also imply that self-esteem is a psychological need serving an important adaptive function to well being (e.g., Sheldon, 2004). The results also acknowledge the pervasive role of self-esteem in resilience, which is in line with other studies (Benetti & Kambouropoulos, 2006; Karairmak & Aydın, 2005). Indeed,

similar to the present findings, Benetti and Kambouropoulos (2006) also reported indirect effects of trait resilience on self-esteem via positive affect. The link between two important constructs, namely self-esteem and resilience, in psychological health may inspire practitioners when they develop preventive counseling programs. For example, the link between self esteem and resilience supported by other psychological resources might be a key element in national based and large-scale school counseling interventions or prevention efforts.

Previous research suggests that people strive to maintain positive affect (e.g. Larsen, 2000). The present research also provided satisfactory evidence for the importance of positive affect in achieving better outcomes. Positive affect should somehow be included and elevated in the counseling applications. In addition, as Frederickson, et al (2003) suggested, the result regarding positive affect as a vital ingredient within resilience would contribute a lot to stress and coping models emphasizing the role of positive emotions (Folkman, 1997). The results regarding positive affect reported here extended the past efforts (Frederickson et al., 2003) one-step forward. The authors reported the importance of positive affect in resilience during crises. The present research findings also showed the significance of positive affect in resilience long after the crises occurred. Finding ways to cultivate positive emotions in individuals seems to be the most essential component in better adjustment ability and coping with stress. Agreeing with Frederickson, et al (2003) cultivating positive emotions may be suggested for both clinical settings and other settings such as school environment.

To conclude, the results converge that cognitions about life events in general, are related to the emergence of the experienced emotions, which lead to psychological well being. The complex relational pattern obtained in this model points out that strengthening the internal resources may encourage new approaches to improve adaptation to challenging life events.

4.4 Recommendations for Research and Practice

An earthquake is a serious death-facing threat for people. It is difficult to predict when an earthquake will occur. It suddenly changes the normal circle of life, which happened to the survivors of Marmara and Düzce Earthquakes in 1999. Natural disasters that threaten the people's lives are the examples of traumatic events. Exposing a natural disaster leads to aversive psychological impacts on survivors (e.g., Benight & Harper, 2002; Norris et al., 1999). Natural disasters, exclusively earthquakes bring uncertainty to the lives of people. Not only natural disasters, other traumatic events such as man-made disasters, serious traffic accidents, or terrorist attacks are the facts of real world in Turkey. Hence, resilience is such an important phenomenon that should not be ignored by the researchers and practitioners.

The prevalence rate of exposure to trauma is very high and most people go through at least one traumatic event over the course of their lives (Norris et al, 2003). A study (Connor et al., 2003) proved that greater levels of resilience predict lower degrees of PTSD symptom severity. Resilience seems to come into the scene when dealing with trauma. Exploring the nature of adulthood resilience appears to be essential in managing traumatic events. Researchers need to address dimensions of trauma theory in their resilience approach incorporating different developmental periods. Seeking answers to some questions seems important in face of trauma. For instance, does resilience change according to the level of traumatization? It is believed that direct victimization and vicarious traumatization might change the displayed resilient behaviors, cognition and emotions. Experiencing a significant loss after trauma might be another factor affecting resilience in the face of trauma.

Many authors include trauma as a dimension in their resilience definition (e.g. Masten, 2001). For example, resilient individuals who can return to a former state following trauma are seen as invulnerable to negative life events (Bolig & Weddle, 1988). Unfortunately, most of the studies solely focus on chronic adverse life conditions such as poverty or parental mental illness. The number of resilience

studies following trauma is relatively fewer than those with a chronic adversity focus. More studies investigating good psychological adjustment after traumatic events should be designed and discussions on the implications of those studies in academic platforms would be beneficial. Findings from this study would invite further exploration of resilience construct in the face of trauma or other adverse conditions. Further research may be designed to extend the findings of the current study to different settings and to diverse risk groups.

Most disaster and trauma studies reveal gender differences in emotional stress following a natural disaster (Fothergill, 1998; Norris et al., 2002a). Women usually report greater emotional stress and traumatic reactions than men (Rubonis & Bickman, 1991). Therefore, the greater risk is associated with females (Breslau et al., 1998; Kessler et al., 1995). Although gender differences reported in trauma studies, resilience is not treated as gender specific (Zeidner & Endler, 1996). Possible gender differences at different ages should be explored in studies combining resilience and trauma.

It is also recommended that future studies consider other personal and environmental factors that might affect resilience in adults. For instance, spiritual tendencies may help individuals find the needed meaning and power to survive (Valentine & Feinauer, 1993). Holding spiritual beliefs could increase the possibility of finding positive meanings in life events (Folkman, 1997; Frederickson 2002; Frederickson et al., 2003). In this respect, spiritual aspects of humans might be contributing to resilience. For future studies, the possible connection should be examined.

In this study the participants from different developmental stages were mixed. It was the only way to reach enough number of participants. However, in order to overcome this limitation for future studies, the model can be tested with various developmental stages.

Resilient individuals are found to be more resistant to depression (Frederickson et al., 2003). Therefore, resilience in therapy sessions might be thought as a significant outcome variable that could be worked on. In further research, resilience mechanisms underlying ordinary human adaptational system (Masten, 2001) might be investigated from an outcome and process research perspective.

An additional interesting perspective to define resilience more accurately might involve investigating cultural variations or cultural resources that might create cross-cultural differences. According to one cross-cultural study (Karairmak & Figley, 2006); American college students reported higher resilience scores than Turkish college students. A recent international collaboration aims at examining adolescence resilience across eleven different cultures. (Ungar, Lee, Callaghan & Boothroyd, 2005). Since it is a very large-scale study, the results are not published yet. The authors also mentioned the inadequacy of resilience studies in a cultural context.

In interpreting the results, several limitations should be taken into consideration. First, self-report instruments were used in the study. If other data collection methods could have been used the present results would have confirmed. Additionally, since the sample size of this study is relatively small, the study might be replicated with larger number of disaster survivors. The sample of the study was composed of natural disaster survivors and the data were collected long after the earthquakes occurred. The sample only included the survivors of earthquake. These findings may not be generalized to other disaster or trauma population; instead it can only provide an empirical base. Future studies might investigate the internal factors affecting resilience with different groups of disaster survivors also a comparison of those who were affected by the earthquake and those who were not. Another shortcoming with respect to the sample was that the education level of the study was fairly high. It might reflect the real situation in Turkey, which limits the generalization of the findings.

Another recommendation might be related to data collection and statistical methods. The results gathered from the present research are based on quantitative methods. It would be inspiring to replicate the study with qualitative methods in order to explore the core elements in resilience.

This study does not provide exact prescriptions for resilience. It only proposes possible paths to psychological resilience within its limitations. It would be feasible if the interrelations of the variables could be replicated in future. More research is required to confirm the interrelational pattern obtained in the present research.

Online data collection might be considered another limitation in the present research. The participants were provided access information to enter the web-site that they could find the questionnaire. They completed and submitted the questionnaire online. Although online data collection might be criticized in some aspects, it certainly has some advantages over paper-pencil tests. In addition to ease the data entry and eliminating potential errors, it definitely reduces the response time (Franceschini, 2000). Furthermore, online data collection also reduces the cost (Schleyer & Forrest, 2000).

In the case of the present research, the participants completely used their free will participating in the study. There was no other external factor that could affect their decision. It is believed that they provided honest responses. Several authors have mentioned that self-disclosure is increased when people use Web-based surveys as compared to traditional data collection methods (e.g. Joinson, 1999; Moon 2000). It was also found that an Internet survey offered the necessary guarantee of anonymity to allow respondents to release accurate data (Conboy, Domar, & O'Connell, 2001).

Another advantage of online data collection would be that the participants might have found the online questionnaire more attractive as it is easier to follow and completing it certainly takes less time. Hence, using the online form might have

attracted the attention of the participants. There is evidence that the Internet is becoming more acceptable as a method of collecting data (Dillman et al, 2001; Cartwright, Thompson, Poole, & Kester, 1999).

Representativeness of the sample is such a significant issue that the researchers cannot underestimate its importance for the generalizability of the results. Ensuring the representativeness of the defined population is the responsibility of the researchers. Although it might be thought that online data collection may bring limitations to research studies, use of internet for diverse reasons have been becoming more popular. In our country the Internet is becoming a part of daily life and business life, particularly in metropolitan cities. Besides, people are increasingly interested in using Internet for many purposes. It is hoped that as a way of communication the Internet will become more wide spread. To sum up, online data collection both challenges researchers in many aspects such as ensuring confidentiality or representativeness of the population and provides many possibilities such as easy data entrance, reduced cost or reaching large number of people.

Resilience as a research topic does still needs to be explored further by the researchers and the field of resilience requires more standardized and valid instruments. Since resilience in adulthood is not well explored, more research findings obtained through different scales would enrich the existing knowledge. Resilience outcomes from literature and qualitative measures should be determined first and culturally specific quantitative measuring those outcomes should be developed.

In conclusion, resilience is an essential element of adaptation, it is important for researchers and clinicians to examine the adaptive construct deeply both from public health perspective and a clinical sense. It is believed that the findings of the present study contribute to the understanding of psychological resources leading to positive outcomes. This study is the first to examine the link between resilience and other

variables among Turkish adult disaster survivors despite its limitations mentioned before.

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APPENDICES

APPENDIX A

EXAMPLE OF THE FIRST STANDARD E-MAIL

Merhaba,

Ben depremin insanlar üzerindeki psikolojik etkisi üzerine çalışan Orta Doğu Teknik Üniversitesi'nde (ODTÜ) Eğitim Fakültesi'nde Psikolojik Danışma ve Rehberlik alanında doktora yapan bir araştırmacıyım. Ayrıca, depremden sonra deprem bölgesinde gönüllü olarak çalışan onlarca kişiden biriyim. Deprem sadece binalarda değil gonullerimizde de derin izler acti.

Çalışmamın amacı, olumlu kişilik özelliklerinin doğal afetlerin yarattığı olumsuz etkilerle başa çıkabilmedeki rolünü araştırmaktır. Daha önce maddi ve manevi anlamda büyük yaralar aldığımız doğal afetlere karşı artık daha dirençli ve hazırlıklı olmamız adına hepimizin yapabileceği birseyler olduğuna inanıyorum.

Bu araştırmanın, 1999 Marmara ve Düzce Depremleri SIRASINDA **deprem bölgesinde (Kocaeli Yalova, Adapazarı, Bolu, Düzce) olan kişilerde** yürütülmesi hedeflenmektedir.

Sizden beklediğimiz, deprem deneyimi geçirmiş bir birey olarak bu araştırmanın bir parçası olmanız ve hazırladığımız anketteki soruları cevaplamanızdır. Anket, ilk bakışta uzun görünmesine rağmen oldukça hızlı cevaplanabilir niteliktedir. Anketi aşağıdaki linkte bulabilirsiniz. Bu anketi kurumunuzdaki depremi yaşamış başka insanlara e-posta yoluyla iletmeniz mümkün mü ?

Eğer bu araştırmaya katkıda bulunmak istiyorum diyorsanız 20 dakikanızı ayırarak soruları içtenlikle cevaplamanız araştırmaya çok büyük katkı sağlayacaktır.

ANKETE ULAŞMAK İÇİN : <http://www.fedu.metu.edu.tr/aozlem/>

Daha önce yaşadıklarımızdan ders almamızı sağlayacak ve toplumsal sorumluluk taşıyan bu davranışınız araştırmamız için son derece önemlidir. Bilime yapacağınız katkı için şimdiden teşekkürler...

Çalışma hakkında daha fazla bilgi almak isterseniz bana ulaşabilirsiniz.

Özlem KARAIRMAK

ODTÜ Eğitim Fakültesi, Eğitim Bilimleri Bölümü, Oda No: 408 Tel: 210 41 85

APPENDIX B

EXAMPLE OF THE SECOND STANDARD E-MAIL

Sevgili Öğrenci,

Ben depremin insanlar üzerindeki psikolojik etkisi üzerine çalışan ODTÜ, Eğitim Fakültesi'nde çalışan bir araştırmacıyım. Olumlu kişilik özelliklerinin doğal afetlerle başa çıkmadaki rolünü inceliyorum. Ülkemizde sık sık yaşanan bir felaket olan depremin etkilerini her anlamda azaltmak için toplum olarak herkesin sorumluluk taşıması gerektiğine inanıyorum. Bu yüzden çalışma konumu doğal afetlerin psikolojik etkisini azaltmak olarak seçtim. Daha önce maddi ve manevi anlamda büyük yaralar aldığımız doğal afetlere karşı artık daha dirençli ve hazırlıklı olmalıyız. Daha önce yaşananlardan ders almalıyız.

Ancak, ülkemizde sosyal bilimler alanında araştırma yapmanın zorlukları düşünüldüğünde, doğal afet yaşamış bir gruba ulaşip veri toplamanın çok kolay olmadığı açıktır.

Sizin e-posta adresinizi okulun bilgi-işlem dairesi aracılığıyla buldum. Deprem bölgesinden gelen öğrencilerin e-posta adreslerini araştırma kapsamında kullanabileceğimi söylediler.

Bu İLK e-postayı sizi bilgilendirmek ve izininizi almak için gönderiyorum. Sizlerden ricam BİR KAC GUN sonra göndereceğim linkteki anketi içtenlikle doldurmanız. Eğer bu araştırmaya katkıda bulunmak istiyorum diyorsanız lütfen bu e-postaya cevap olarak boşta olsa bir e-posta gönderin. Ya da sormak istediğiniz sorular varsa yazın.

Daha önce yaşadıklarımızdan ders almamızı sağlayacak ve toplumsal sorumluluk taşıyan bu davranışınız araştırmamız için son derece önemlidir. Bilime yapacağınız katkı için şimdiden teşekkürler...

Eğer benimle tanışmak, çalışma hakkında daha fazla bilgi almak ve yüzyüze anketi doldurmak isterseniz bana ulaşabilirsiniz.

Özlem KARAIRMAK ODTÜ Eğitim Fakültesi, Eğitim Bilimleri Bölümü, Oda No: 408 Tel: 210 41 85

APPENDIX C

EXAMPLE OF THE THIRD STANDARD E-MAIL

Hepinize iten yanıtlarınız ve duyarlılığınız için çok teşekkür ederim. Hepinizle yüzyüze görüşüp tanışmayı çok isterdim. Aranızdan birinden gelen bir öneri üzerine belki gönüllülerin oluşturacağı bir grup çalışması düzenlemeyi düşünüyorum. Belki bu durum sizlerle tanışmam için bir fırsat yaratabilir. Ayrıntılar netlesince yine e-posta yoluyla sizleri bilgilendiririm.

Yine aranızdan birinden gelen öneri ile belki bu çalışmayı ve ayrıntılarını sizin gibi depremi yaşamış arkadaşlarınıza iletebilirsiniz. Onlarda bize katılmak isteyebilirler. Örneklemin büyümesi çalışmanın geçerliliğini artıracaktır. Sizlere gönderdiğim e-postaları (aynı sırayla) arkadaşlarınıza gönderebilirsiniz katılımcı sayısını artırabiliriz.

Gecen e-postada sözünü ettiğim ankete ve sorulara aşağıdaki linke tıklayarak ulaşabilirsiniz. Anket ilk bakışta uzun görünebilir ancak dikkatle okuyup cevapladığınızda (her şeyde olduğu gibi konsantrasyon önemli tabi ki) en çok 20 dakikanızı alacağını düşünüyorum. Ben deneme amaçlı anketi doldurdum. Sadece 11 dakika sürdü. Ancak soruları bildiğim düşünülürse süre biraz kısalmış olabilir elbette.

Ankete ulaşabileceğiniz link:

<http://www.fedu.metu.edu.tr/ozlem/>

Daha öncede söylediğim gibi, eğer benimle tanışmak, çalışma hakkında daha fazla bilgi almak isterseniz bana ulaşabilirsiniz.

Özlem KARAIRMAK

ODTÜ Eğitim Fakültesi, Eğitim Bilimleri Bölümü, Oda No: 408 Tel: 210 41 85

APPENDIX D

QUESTIONNAIRE BOOKLET

Değerli Katılımcı,

17 Ağustos ve 12 Kasım 1999 tarihleri ülkemiz için unutulması çok güç tarihlerdir. Ülkemizin deprem kuşağında yer alması sebebiyle önümüzdeki yıllarda olası depremlerin ülkemizde yaşanması muhtemel gözükmektedir. Ülkemizde sık sık yaşanan doğal afetlere karşı her açıdan hazırlıklı olmak yaşanacak olumsuz etkileri azaltacaktır. Maddi ve manevi büyük yaralarla çıktığımız bu iki felaketten sonra toplumun her kesiminden insanın depreme hazırlıklı olma ya da depremle başa çıkma konusunda yapabileceği bir şeyler olduğuna inanıyoruz. Doğal afetlerin insanlar üzerindeki etkisini inceleyen akademisyenler olarak bu konuda bizlere düşen görev bilimsel bilgiye ulaşmak ve bunu yaygınlaştırmaktır. Bu çalışmanın amacı, olumlu kişilik özelliklerinin doğal afetlerin yarattığı olumsuz etkilerle başa çıkabilmedeki rolünü araştırmaktır.

Bu araştırmanın, 1999 Marmara ve Düzce Depremleri **SIRASINDA** deprem bölgesinde (**Kocaeli Yalova, Adapazarı, Bolu, Düzce**) olan kişilerle yürütülmesi hedeflenmektedir. Sizden beklediğimiz, deprem deneyimi geçirmiş bir birey olarak literatüre önemli katkılar sağlayacak bu araştırmanın bir parçası olmanızdır. Ankette yer alan ifadeler eğer sizde bir rahatsızlık uyandırırsa aşağıdaki e-posta adresinden bize ulaşabilirsiniz. Anket, ilk bakışta uzun görünmesine rağmen oldukça hızlı cevaplanabilir. Gösterdiğiniz duyarlılık ve yardımınız için teşekkür ederiz.

Özlem Kararımk

Bu ankette kendinizi nasıl gördüğünüzü anlamaya yönelik cümleler bulunmaktadır. Sizden beklenen her bir bölümde verilen sorular için ilgili seçeneklerden size en uygun olanı işaretlemenizdir. Lütfen cevaplarınızı genel halinize göre, çoğunlukla nasıl olduğunuzu düşünerek veriniz. **İÇTENLİKLE** vereceğiniz yanıtlar, araştırma sonuçlarının güvenilirliği açısından son derece önemlidir. Ayrıca olmak istediğinize göre değil, şu anda kendinizi nasıl görüyorsanız ona göre cevaplayınız.

- Soruların **DOĞRU** ya da **YANLIŞ** cevabı yoktur.
- Hiç bir soruyu **BOŞ** bırakmayın.
- Önemli olan **SAMİMİ GÖRÜŞÜNÜZÜ** yansıtmanızdır.
- Cevaplarınızı kesinlikle **GİZLİ** tutulacaktır.

BÖLÜM A (Demographic Questions)

Yaşınız:

Depremi hangi ilde yaşadınız?

Eğitim durumunuz?

İlkokul-Orta Lise Üniversite Yüksek Lisans-Doktora

- | | | |
|---|------|-------|
| 1. Cinsiyet: | Bay | Bayan |
| 2. Eviniz yıkıldı mı? | Evet | Hayır |
| 3. Enkaz altında kaldınız mı? | Evet | Hayır |
| 4. Aileniz biri enkaz altında kaldı mı? | Evet | Hayır |

- | | | |
|---|------|-------|
| 5. Ailenizden birini kaybettiniz mi? | Evet | Hayır |
| 6. Çadırda yaşadınız mı? | Evet | Hayır |
| 7. Depremde kaybettiğiniz arkadaşlarınız oldu mu? | Evet | Hayır |

BÖLÜM B: (Ego-Resiliency Scale, ER)

Lütfen aşağıdaki ifadeleri dikkatle okuyunuz ve her bir ifadenin sizi ne ölçüde tanımladığını cevap kağıdı üzerine işaretleyiniz.

1. item 2

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

2. Beni allak bullak eden durumların üstesinden çabucak gelirim ve kısa sürede kendimi toparlarım.

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

3. item 3

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

4. İnsanlar üzerinde olumlu izlenim bırakmada genellikle başarılıyım.

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

5. item 5

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

6. item 6

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

7. Daha önceden bildiğim bir yerlere giderken her seferinde farklı yollar kullanmayı severim.

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

8. Bir çok insandan daha meraklıyım.

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

9. item 9

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

10. Harekete geçmeden önce genellikle etraflıca düşünürüm.

1 (a)	2 (b)	3 (c)	4 (d)
Hiç bir durumda uymaz	Bazı durumlarda uyar	Genellikle uyar	Her zaman uyar

11. item 11

1 (a)	2 (b)	3 (c)	4 (d)
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Hiç bir durumda uymaz Bazı durumlarda uyar Genellikle uyar Her zaman uyar

12. item 12

1 (a) 2 (b) 3 (c) 4 (d)
Hiç bir durumda uymaz Bazı durumlarda uyar Genellikle uyar Her zaman uyar

13. Kendimi rahatlıkla oldukça “güçlü” kişiliğe sahip biri olarak tanımlayabilirim.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç bir durumda uymaz Bazı durumlarda uyar Genellikle uyar Her zaman uyar

14. item 14

1 (a) 2 (b) 3 (c) 4 (d)
Hiç bir durumda uymaz Bazı durumlarda uyar Genellikle uyar Her zaman uyar

BÖLÜM C (Self Esteem Scale, SE)

Lütfen kendinizi düşünerek aşağıdaki ifadelerin size ne kadar uygun olduğunu cevap kağıdı üzerine işaretleyiniz.

15. Kendimi en az diğer insanlar kadar değerli buluyorum.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

16. Bazı olumlu özelliklerim olduğunu düşünüyorum.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

17. Genelde kendimi başarısız bir kişi olarak görme eğilimindeyim.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

18. Bende diğer insanların bir çoğunun yapabildiği kadar bir şeyler yapabilirim.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

19. Kendimde gurur duyacak fazla bir şey bulamıyorum.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

20. Kendime karşı olumlu bir tutum içindeyim.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

21. Genel olarak kendimden memnunum.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

22. Kendime karşı daha fazla saygı duyabilmeyi isterdim.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

23. Bazen kesinlikle kendimin bir işe yaramadığımı düşünüyorum.

1 (a) 2 (b) 3 (c) 4 (d)
Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum

24. Bazen kendimin hiç de yeterli bir insan olmadığımı düşünüyorum.

1 (a)	2 (b)	3 (c)	4 (d)
Hiç katılmıyorum	Katılmıyorum	Katılıyorum	Tamamen katılıyorum

BÖLÜM D (Dispositional Hope Scale)

Lütfen aşağıdaki her bir maddeyi dikaktle okuyun ve sizi en iyi tanımlayan rakkamı cevap kağıdı üzerine işaretleyin.

25. Sıkıntılı bir durumdan kurtulmak için pek çok yol düşünebilirim.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

26. Enerjik bir biçimde amaçlarıma ulaşmaya çalışırım.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

27. Çoğu zaman kendimi yorgun hissederim.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

28. Herhangi bir problemin bir çok çözüm yolu vardır.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

29. Tartışmalarda kolayca yenik düşerim.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

30. Sağlığım için endişeliyim.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

31. Benim için çok önemli şeylere ulaşmak için pek çok yol düşünebilirim.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

32. Başkalarının pes ettiği durumlarda bile, sorunu çözecek bir yol bulabileceğimi bilirim.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

33. Geçmiş yaşantıları beni geleceğe iyi biçimde hazırladı.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

34. Hayatta oldukça başarılı olmuşumdur.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

35. Genellikle endişelenecek birşeyler bulurum.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

36. Kendim için koyduğum hedeflere ulaşıyorum.

1 (a)	2 (b)	3 (c)	4 (d)
Kesinlikle Katılmıyorum	Kısmen Katılmıyorum	Kısmen Katılıyorum	Kesinlikle Katılıyorum

BÖLÜM E (Life Orientation Test, LOT)

Lütfen aşağıdaki cümleleri dikkatle okuduktan sonra kendinize en uygun olan seçeneği cevap kağıdı üzerine işaretleyin.

37. Ne olacağıın önceden kestirilemediği durumlarda hep en iyi sonucu beklerim.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

38. Kolayca gevşeyip rahatlayabilirim.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

39. Bir işimin ters gitme olasılığı varsa mutlaka ters gider.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

40. Herşeyi hep iyi tarafından alırım.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

41. Geleceğim konusunda hep iyimserimdir.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

42. Arkadaşlarımla birlikte olmaktan hoşlanırım.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

43. Yapacak birşeylerimin olması benim için önemlidir.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

44. İşlerin istediğim gibi yürüyeceğini nerdeyse hiç beklemem.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

45. Hiçbir şey benim istediğim yönde gelişmez.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

46. Moralim öyle kolay kolay bozulmaz.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

47. Her türlü olayda bir iyi yan bulmaya çalışırım.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

48. Başıma iyi şeylerin geleceğine pek bel bağlamam.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum

BÖLÜM F: (Positive and Negative Affect Scale, PANAS)

Aşağıda bir takım duygu ifadeleri bulunmaktadır. Lütfen her bir duyguyu, **genelde** yaşama sıklığınızı, cevap kağıdına işaretleyin.

	Hiç	Nadiren	Bazen	Çoğunlukla	Daima
49. <u>İlgili</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
50. <u>Sıkıntılı</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
51. <u>Heyecanlı</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
52. <u>Mutsuz</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
53. <u>Güçlü</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
54. <u>Suclu</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
55. <u>Ürkmüş</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
56. <u>Düşmanca</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
57. <u>Hevesli</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
58. <u>Gururlu</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
59. <u>Asabi</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
60. <u>Uyanık</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
61. <u>Utlanmış</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
62. <u>İlhamlı</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
63. <u>Sinirli</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
64. <u>Kararlı</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
65. <u>Dikkatli</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
66. <u>Tedirgin</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
67. <u>Aktif</u>	1(a)	2(b)	3(c)	4 (d)	5(e)
68. <u>Korkmuş</u>	1(a)	2(b)	3(c)	4 (d)	5(e)

Bölüm G: (Satisfaction with Life Scale, SWLS)

Aşağıda genel olarak yaşamınız ve yaşamınızın bazı alanlarındaki doyumunuz ile ilgili bir takım ifadeler verilmiştir. Lütfen söz konusu ifadeleri size uygunluğu açısından değerlendiriniz. Cevap kağıdı üzerine işaretleyiniz.

69. **Yaşamım idealime büyük ölçüde yaklaşıyor.**

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Hiç uygun değil	Kısmen uygun	Uygun	Oldukça Uygun	Tamamen Uygun

70. **Yaşam koşullarım mükemmel.**

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Hiç uygun değil	Kısmen uygun	Uygun	Oldukça Uygun	Tamamen Uygun

71. **Yaşamımdan memnunum.**

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Hiç uygun değil	Kısmen uygun	Uygun	Oldukça Uygun	Tamamen Uygun

72. **Yaşamda şu ana kadar istediğim önemli şeylere sahip oldum.**

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Hiç uygun değil	Kısmen uygun	Uygun	Oldukça Uygun	Tamamen Uygun

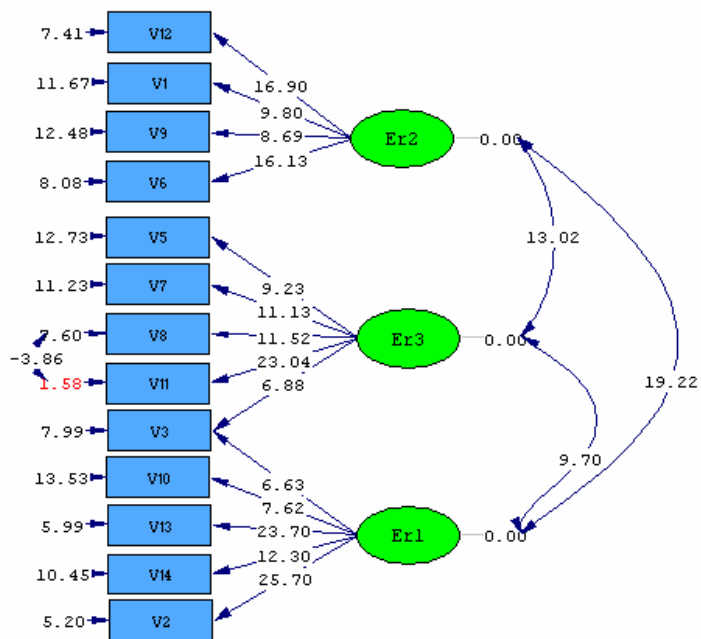
73. Yaşamımı bir daha yaşasaydım hiç bir şeyi değiştirmek istemezdim.

1 (a)	2(b)	3 (c)	4 (d)	5 (e)
Hiç uygun değil	Kısmen uygun	Uygun	Oldukça Uygun	Tamamen Uygun

APPENDIX E

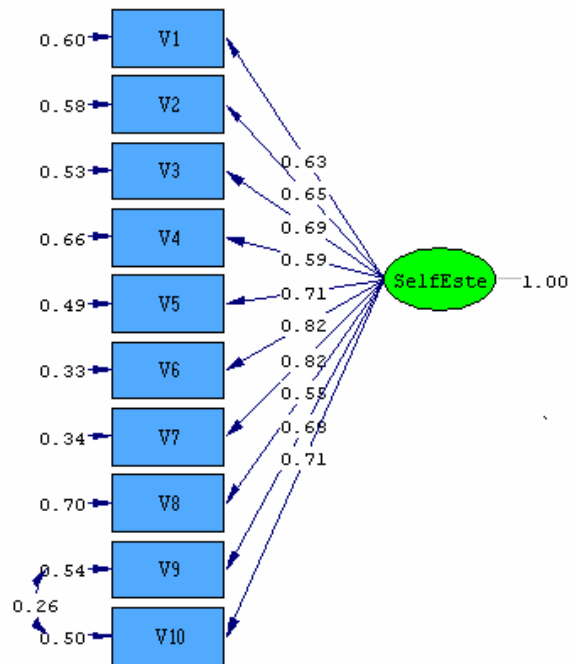
LISREL ESTIMATES OF PARAMETERS IN MEASUREMENT MODELS WITH STANDARDIZED PATH COEFFICIENTS AND *T*-VALUES

Lisrel Estimates of Parameters in Measurement Model of Ego Resilience with *T*-Values and Standardized Coefficients



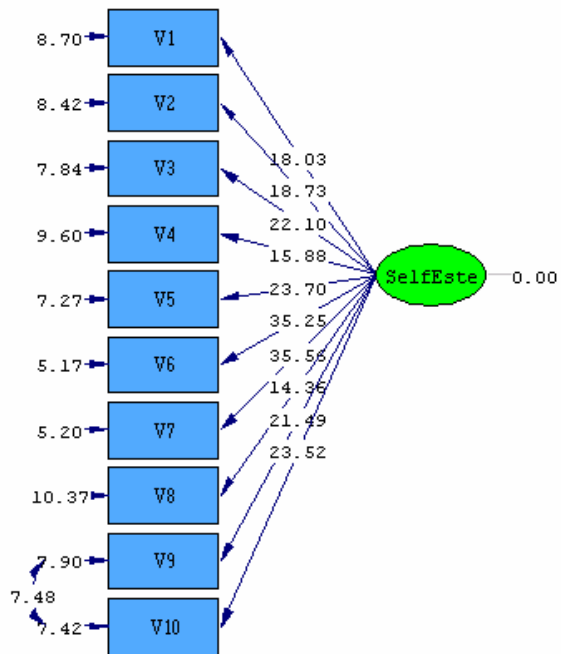
Chi-Square=109.04, df=60, P-value=0.00011, RMSEA=0.048

Lisrel Estimates of Parameters in Measurement Model of Self Esteem with Standardized Coefficients



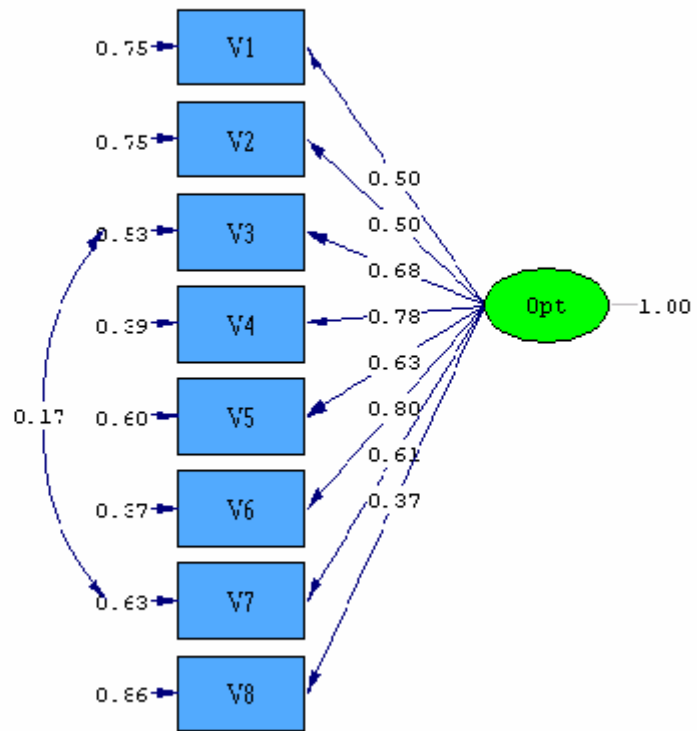
Chi-Square=103.41, df=34, P-value=0.00000, RMSEA=0.075

Lisrel Estimates of Parameters in Measurement Model of Self Esteem with *T*-Values



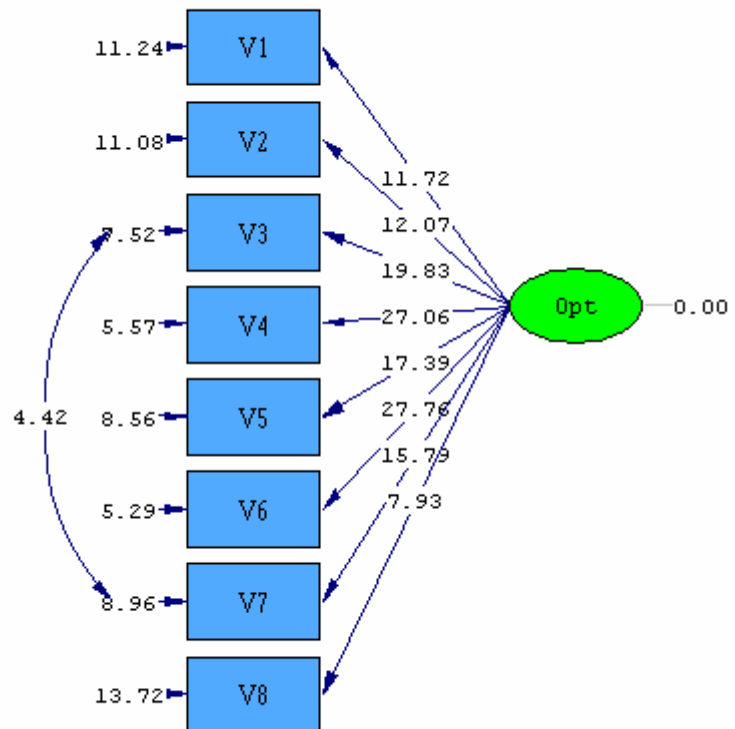
Chi-Square=103.41, df=34, P-value=0.00000, RMSEA=0.075

Lisrel Estimates of Parameters in Measurement Model of Optimism with Standardized Coefficients



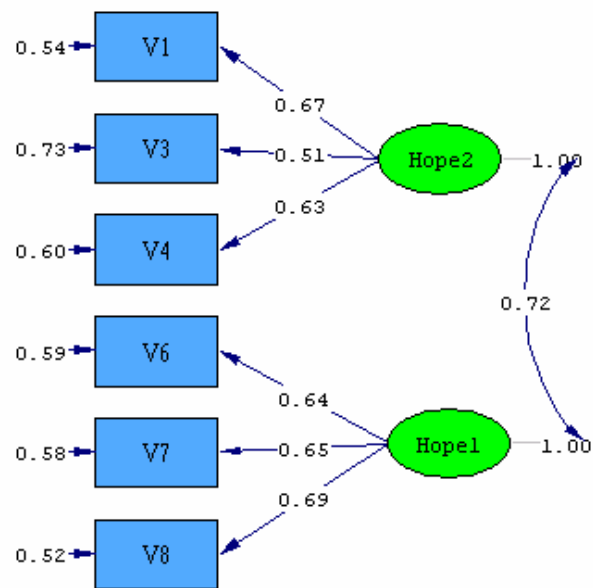
Chi-Square=11.59, df=19, P-value=0.00000, RMSEA=0.095

Lisrel Estimates of Parameters in Measurement Model of Optimism with *T*-Values



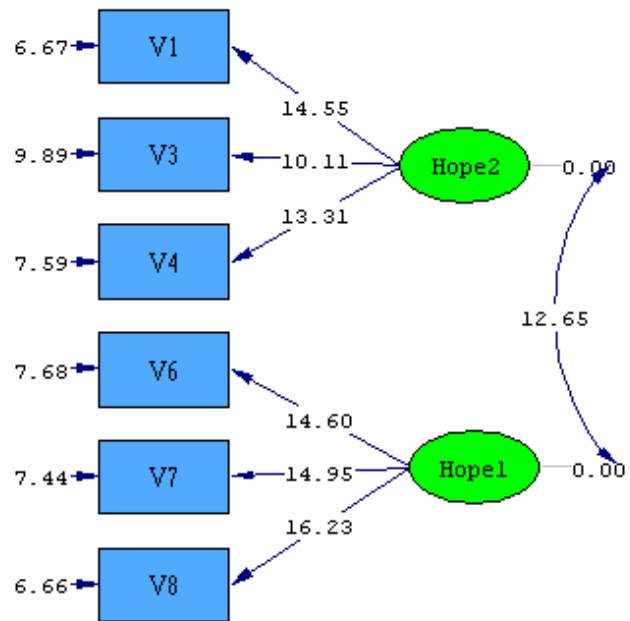
Chi-Square=81.59, df=19, P-value=0.00000, RMSEA=0.095

Lisrel Estimates of Parameters in Measurement Model of Hope with Standardized Coefficients



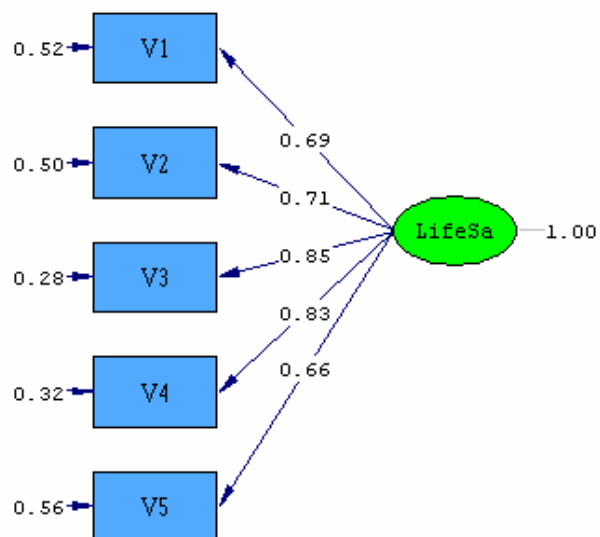
Chi-Square=14.68, df=8, P-value=0.06572, RMSEA=0.048

Lisrel Estimates of Parameters in Measurement Model of Hope with *T*-Values



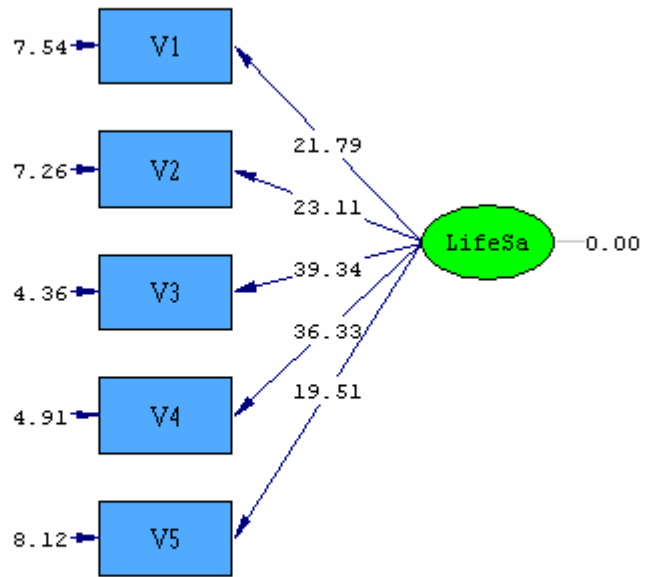
Chi-Square=14.68, df=8, P-value=0.06572, RMSEA=0.048

Lisrel Estimates of Parameters in Measurement Model of Life Satisfaction with Standardized Coefficients



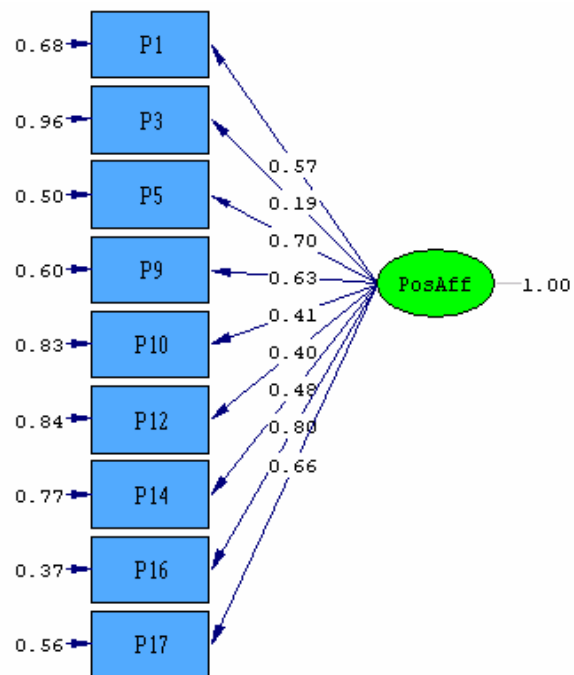
Chi-Square=11.40, df=5, P-value=0.04408, RMSEA=0.059

Lisrel Estimates of Parameters in Measurement Model of Life Satisfaction with *T*-Values



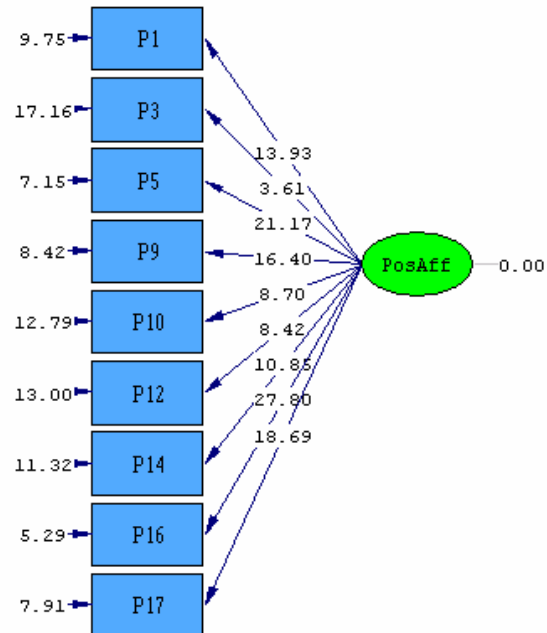
Chi-Square=11.40, df=5, P-value=0.04408, RMSEA=0.059

Lisrel Estimates of Parameters in Measurement Model of Positive Affect with Standardized Coefficients



Chi-Square=68.56, df=27, P-value=0.00002, RMSEA=0.065

Lisrel Estimates of Parameters in Measurement Model of Positive Affect with *T*-Values



Chi-Square=68.56, df=27, P-value=0.00002, RMSEA=0.065

0.1

APPENDIX F

LISREL ESTIMATES OF PARAMETERS IN THE STRUCTURAL MODELS WITH STANDARDIZED COEFFICIENTS AND T-VALUES

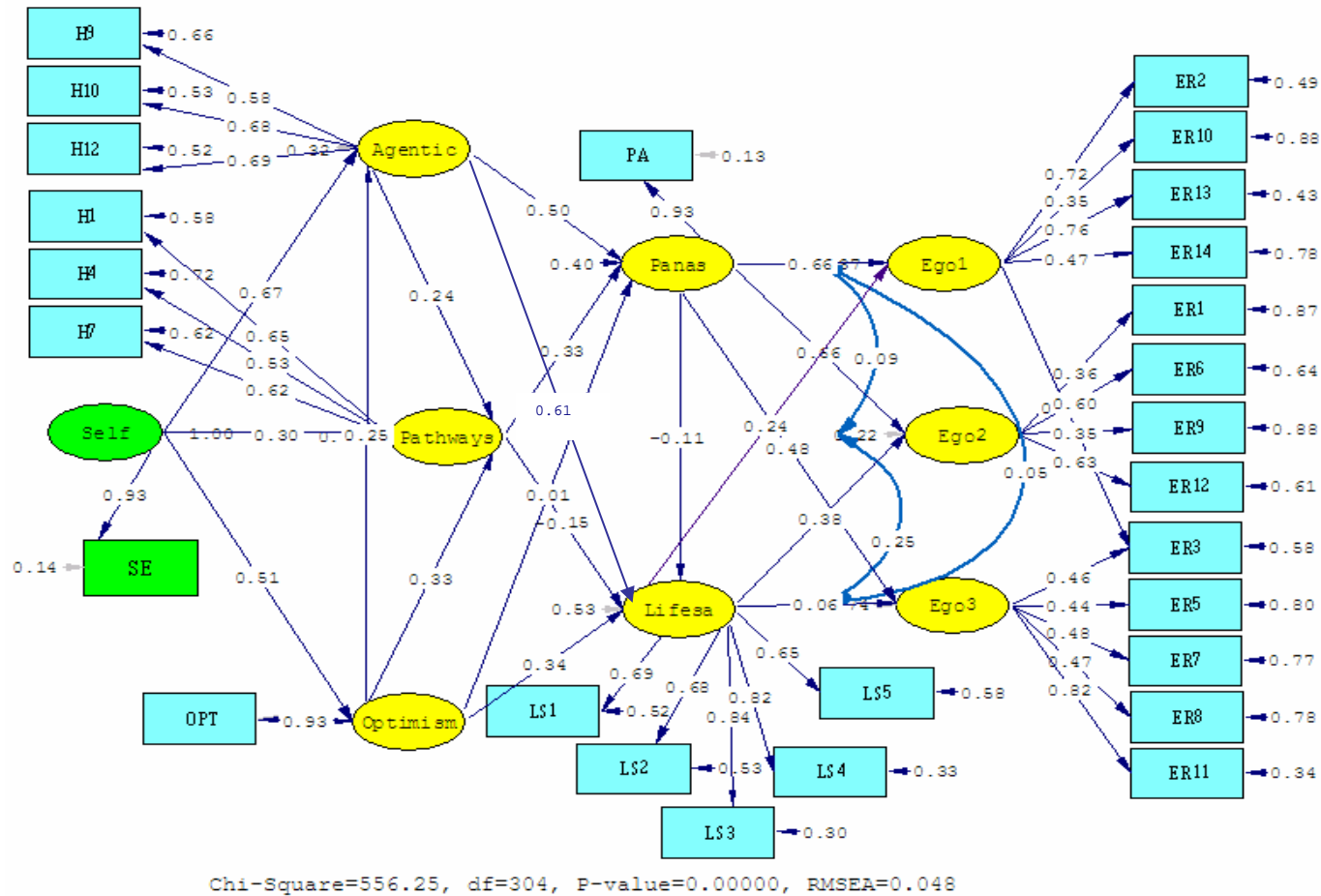
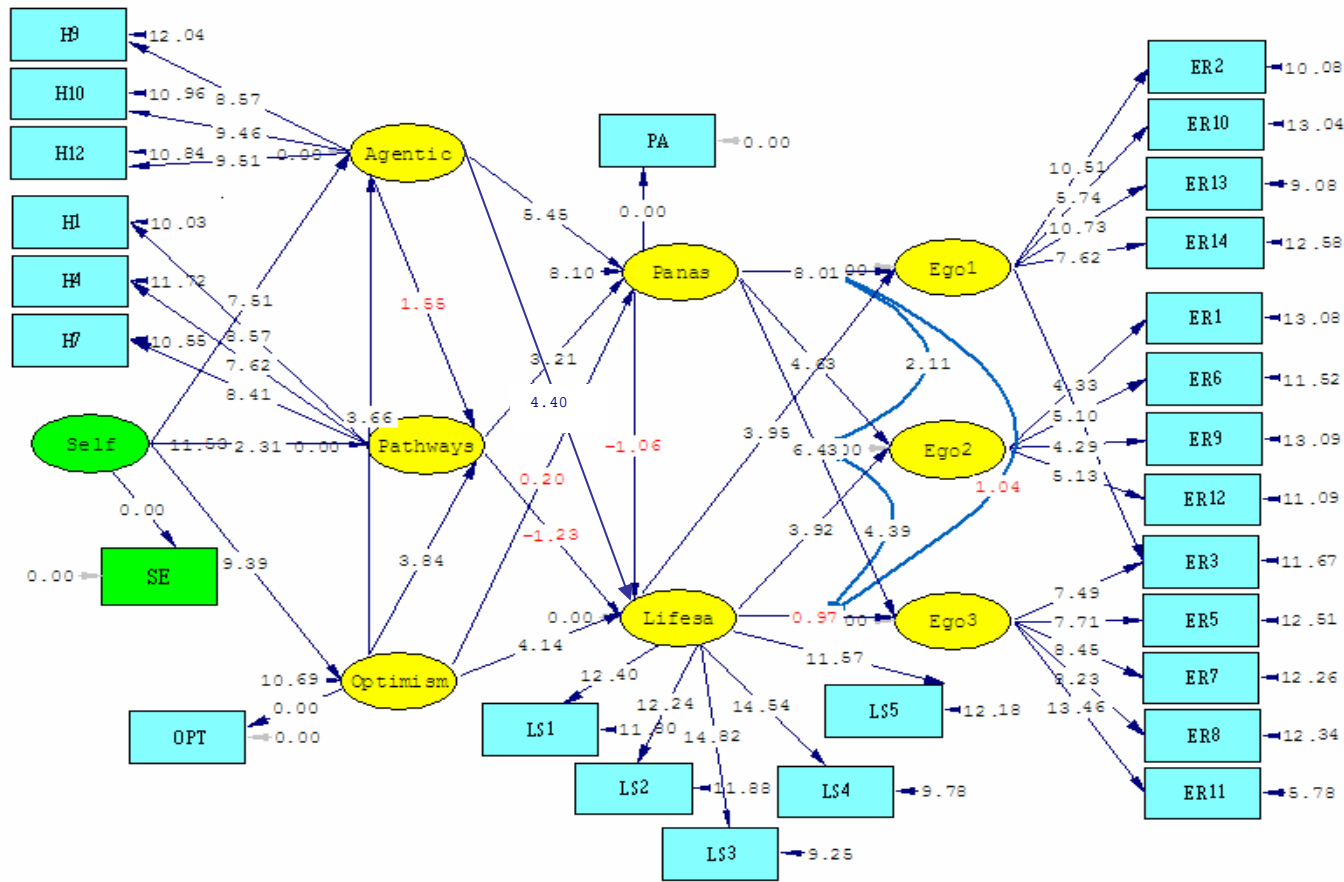


Figure F 1.1 The Standardized Coefficients for the Hypothesized Structural Model



Chi-Square=556.25, df=304, P-value=0.00000, RMSEA=0.048

Figure F 1.2 The *t*-Values for the Hypothesized Structural Model

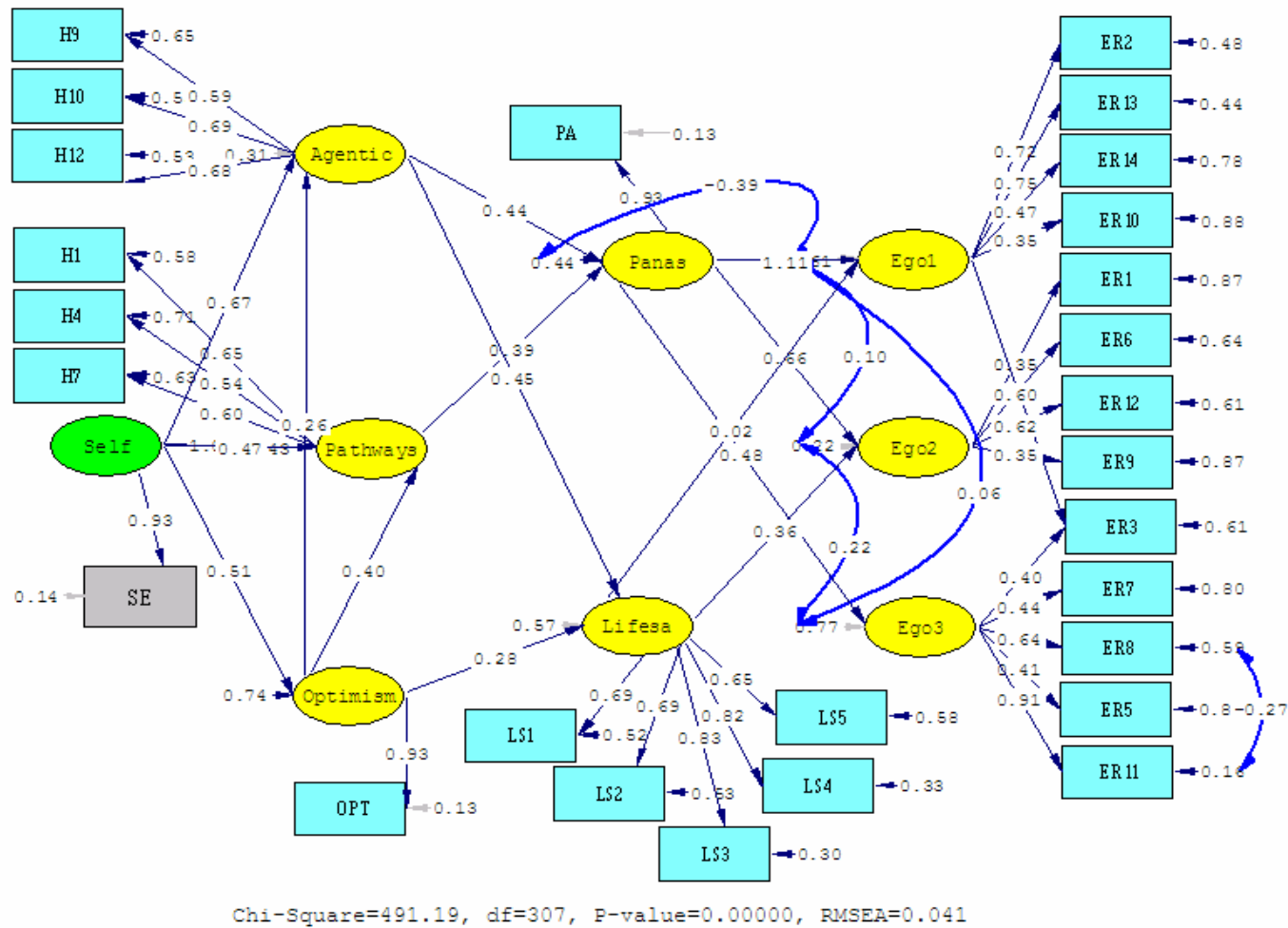


Figure F 1.3 The Standardized Coefficients for the Trimmed Structural Model

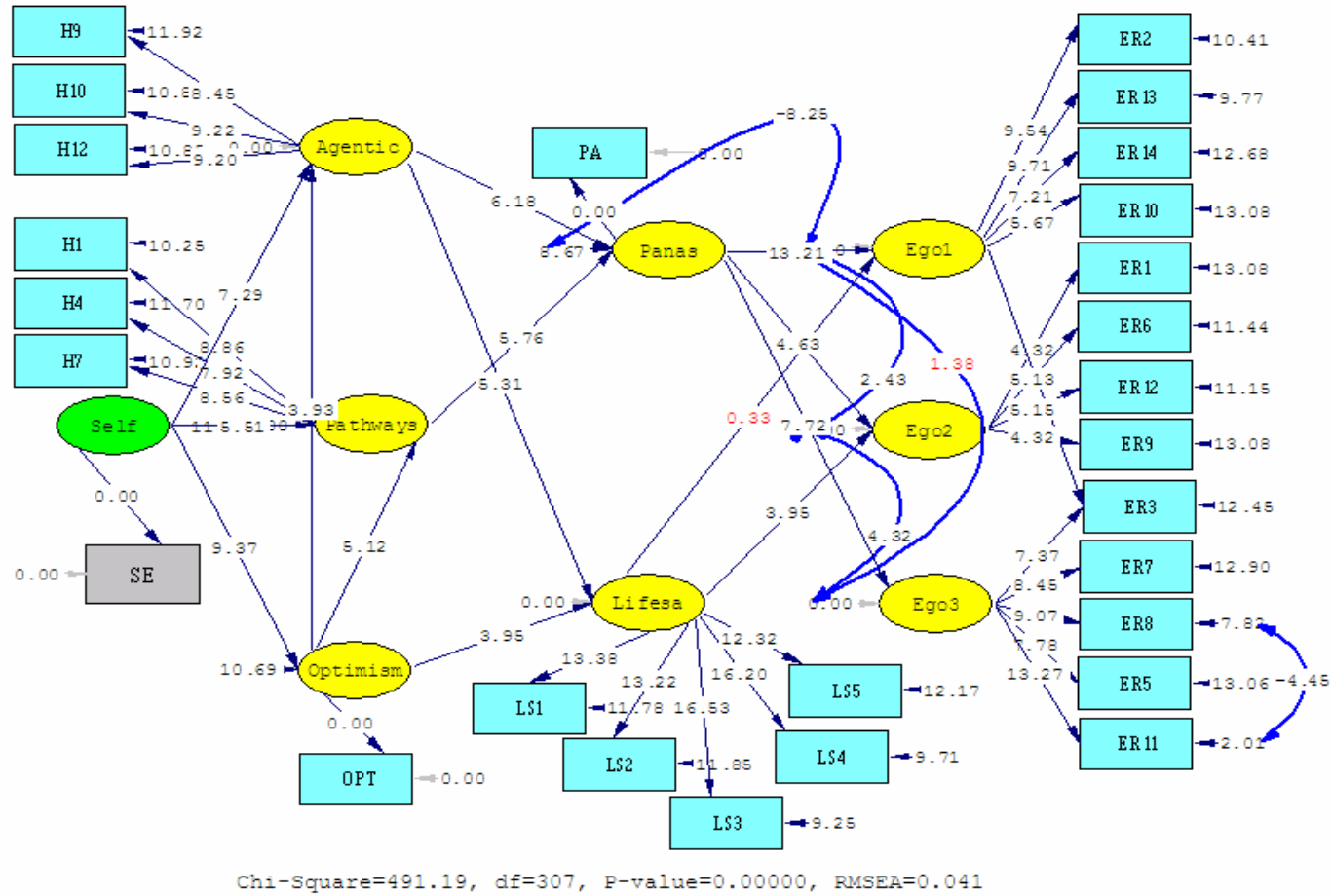


Figure F 1.4 The *t*-Values for the Trimmed Structural Model

APPENDIX G

TURKISH SUMMARY

DEPREM YAŞAMIŞ BİREYLERDE PSİKOLOJİK SAĞLAMLIĞA ETKİ EDEN KİŞİSEL FAKTÖRLERİN İNCELENMESİ: BİR MODEL TEST ETME ÇALIŞMASI

1. GİRİŞ

Bu araştırmanın temel amacı, psikolojik sağlamlığa etki eden bilişsel ve duygusal faktörlerin kendi aralarındaki ilişkilerin incelenmesi ve söz konusu kişisel faktörlerin yer aldığı teorik bir modelle psikolojik sağlamlık kavramının açıklanmasıdır. Bu bölümde, psikolojik sağlamlık kavramının kuramsal ve tarihsel gelişiminin yanısıra ilgili kişisel faktörler özet olarak açıklanmıştır.

Psikoloji bir sosyal bilim olarak felsefi akımlardan etkilenir. Tarihsel süreçte bakıldığında, yirminci yüzyılın başlarında modernizm psikolojik danışma kuramları ve araştırma yöntemleri konusunda belirleyici güç olmuştur. Modernist düşüncede, bilginin özünde nesnellik yer alır. Bilgi ya da gerçeklik nesnel dünyanın bir yansımasıdır (Lyddon, 1995). Ancak, yirminci yüzyılın sonlarına doğru postmodernizm modernizme bir tepki olarak doğdu ve psikoloji alanında belirleyici felsefi akım olarak yerini almaya başladı. Postmodernist düşünce ile beraber bilginin öznelliği gündeme geldi. Gerçekliğin ve bilginin farklı ve çoklu yorumlarına kucak açan postmodernizm popülerlik kazanmağa başladı (Neimeyer ve Bridges, 2003).

Modernizmin bir anti-tezi olarak görülen postmodernizm ile beraber, modernist kuramların karşısında yer alan kavramlar ve düşünce tarzları ortaya çıktı. Psikoloji alanına bu yansıma insandaki olumsuzluklara odaklanan geleneksel kuramlardan uzaklaşp insanın güçlü yönlerin odaklanan yaklaşımlar benimsenmeye başlanmıştır.

Özet olarak, felsefik, kültürel ve bilimsel gelişmelerin ışığında, feminist terapi, pozitif psikoloji gibi yeni postmodernist yaklaşımlar gündeme gelmiştir.

Postmodernizm ve psikolojideki çağdaş yaklaşımların ışığında, sosyal bilimler alanında sorun-odaklı yaklaşımlar yerini bireyin güçlü yönlerine ve iyilik haline (wellness) önem veren yaklaşımlara bırakmıştır. Sağlıklı gelişimi ve bireyin güçlü yönlerini ön plana çıkaracak pozitif psikoloji akımına olan ilgi giderek artmaktadır. Pozitif psikolojinin insana bakışı ise, profesyonelleri insan potansiyelini daha fazla takdir etmeye yönlendirmektedir. Psikoloji alanında çalışanların araştırma ve uygulamalarda olumsuzluklara odaklanma eğilimlerinden dolayı, insanların neler başarabileceklerine ilişkin çok az bilgileri olduğu belirtilmektedir. Psikoloji alanında pozitif ve negative arasındaki denge ilk kez insanın içindeki gücü temel olan ve insanın potansiyeline sınır koymayan insancıl psikoloji ile başlamıştır. Carl Roger ya da Abraham Maslow gibi isimler psikolojik danışma eğitiminin en önemli figürleri olarak sayılabilir. Dolayısıyla psikolojik danışma eğitimi zaten insanın içinde varolan güçlere, bireyin başa çıkma yetisine ve gelişime açıklığına inanmayı prensip edinmiştir. Pozitif psikoloji, modernist psikolojinin sınırlarını aşan yapılandırmacı bir hareket olarak dikkat çekmektedir (Sandage ve Hill, 2001). Bu bağlamda, psikoloji biliminin “normal” insanın daha iyi ve daha mutlu yaşamasını hedef alması gerektiğine vurgu yapan pozitif psikoloji insanların güçlü yönlerine odaklanmıştır ve kişinin potansiyelini optimum düzeyde kullanmayı önermektedir (Seligman & Csikszentmihalyi, 2000).

Kişisel güçlere yapılan vurgu arttıkça, psikolojik sağlamlık, öğrenilmiş güçlülük, travma sonrası büyüme gibi olumlu kavramlar literatürde yerini almaya başlamıştır. Psikolojik sağlamlık kavramı insanın olumsuzluklar karşısında gösterdiği uyum ve başa çıkabilme becerisidir. İnsanın en yüksek düzeyde uyum göstermesini sağlayan çokyönlü bir kavram olarak tanımlanmıştır. Bugüne kadar, bir çok olumsuz yaşamı karşısında bireylerin gösterdiği psikolojik sağlamlık ve uyum gücü araştırılmıştır. Örnek verilecek olursa, ebeveyn major duygusal rahatsızlıkları (Beardslee & Podorefsky, 1988), ebeveyn akıl rahatsızlığı (Garmezy, 1974; Masten, Best, &

Garnezy, 1990; Masten & Coastworth,1995; Rutter, 1985, 1987), yoksulluk (Garnezy, 1991; Werner & Smith, 1982), düşün sosyo-ekonomik düzey (Garnezy, 1991, Garnezy, Masten, & Tellegen, 1984); AIDS (Rabkin, Reminen, Katoff & Williams, 1993), terorist saldırılar (Frederickson, Tugade, Waugh & Larkin, 2003); kayıp ve yas (Bonanno et al., 2002); etnik ayrımcılık (Lee, 2005); travma sonrası stres bozukluğu (King, King, Fairbank, Keane & Adams, 1998); çocuk istismarı (Chambers & Belicki, 1998); politik şiddet (Punamaki, Qouta & El-Sarraj, 2001); kronik hastalık (Patterson & Garwick, 1994); kürtaj (Major, Richards, Cooper, Cozarelli, & Zubek, 1998) bulardan bir kaçını sayılabilir.

Psikolojik sağlamlık kavramının, “depresyon, olumsuzluk veya hastalıktan sonra toparlanabilme yetisi” olarak sözlük tanımı yapılmıştır (Webster’s Unabridged Dictionary, 2001). Ölçilmesi zor bir kavram olduğundan literatürde çok sayıda işevuruk tanımı yapılmıştır. Yapılan çalışmalarda, birbirinden farklı araştırma yöntemleri ve tanımlar kullanılmıştır. Bireydeki psikolojik sağlamlığı aktive eden mekanizmaların nasıl çalıştığı konusunda henüz üzerinde anlaşılmiş bir ortak kuram ya da fikir yoktur. Araştırmacılar, kendi araştırma yöntemlerine göre işevuruk bir psikolojik sağlamlık tanımı yapmışlardır. Bu nedenle, araştırma bulgularının genellenmesi konusunda sıkıntı yaşanmaktadır (Polk, 1997).

Literatürde bulunan bir kaç psikolojik sağlamlık tanımı aşağıda verilmiştir:

- “Bireyin karmaşık istek ve yaşamla ilgili kısıtlamaları ayarlama ve kontrol etme kapasitesi” (Block & Kremen, 1996, p. 359).
- Travma, ölüm, kayıp gibi stresli yaşam olaylarının yoğun yüküne rağmen hayata kalmaya yetisi (Agaibi & Wilson, 2005).
- sabit bir psikolojik denge durumunu devam ettirebilme yetisi (Bonanno, 2005).
- duygusal dayanıklılık ve stresle başa çıkma yetisini ölçmeye yarayan bir kavram (Connor, 2006).
- stresli durumların olumsuz etkilerini azaltan ve başarılı bir uyum sürecini kolaylaştıran bir kavram (Wagnild & Young, 1993).

- Olumsuzluktan sıyrılmaya sebep olan kişisel bir yetkinlik (Dyer & McGuinness, 1996).

Psikolojik sađamlık ilk olarak Block ve Block (1980) ego-sađamlığı olarak kavramsallaştırılmıştır. Psikolojik sađamlık tek başına bir nitelik değildir; psikolojik sađamlığı açıklayan tek bir faktör olması imkansızdır. Ego-sađamlığı kolektif olarak kişiliğin önemli yönlerini bünyesinde barındıran üst ve bölünmesi güç bir özellik olarak tanımlanmıştır (Klohn, 1996). Bu çalışmada kişilik özelliklerine dayanan psikolojik sađamlık temel alınmıştır.

Giderek popülerlik kazanmasına rağmen bu kavramın evrensel olarak kabul gören bir kuramı henüz yoktur ve bu durum kavramın işe vuruk tanımın yapılmasını güçleştiren etkenlerden biri olarak karşımıza çıkmaktadır. Literatürdeki neredeyse bütün modeller, psikolojik sađamlığa bađlı olarak “yeniden bütünleşme” ya da “uyum” yetisini en nihayi sonuç olarak göstermektedir. En son önerilen psikolojik sađamlık modellerinden birinde (Richardson, 2002) “dođuştan gelen” bir psikolojik sađamlıktan söz edilir. Burada söylenmek istenen, insan doğasının geređi hayata kalma çabası içinde olduđu ve bunun için içsel güçlerini kullandığıdır. İnsancıl yaklaşımda (Maslow, 1970; Frankl, 1962) olduđu gibi içsel bir güdülenmenin öneminden söz edilmektedir.

Literatürde, psikolojik sađamlığı gelişimsel bakış açısı ile inceleyen ve daha çok çocuklarla yürütölmüş çalışmalarda vardır (Cicchetti & Garnezy, 1993; Masten et al., 1990; Rutter, 1987). Bu alandaki öncü çalışmalardan biri olan Kauai çalışmasında (Werner & Smith, 1982) yoksul çocuklarda psikolojik sađamlığı güdüleyen koruyucu faktörler ve risk faktörleri araştırılmıştır. Gelişimsel çalışmalarda, uyum sürecinin başarılması çoklu (bireysel, ailevi ve çevre) faktörlerin etkileşimde olduđu dinamik bir süreç olarak tanımlanmıştır (Luthar, 2003; Luthar et al., 2000).

Yetişkinlik döneminde psikolojik sađamlığın nasıl tanımlandığı ve bireylerde nasıl ortaya çıktığı ile ilgili olarak literatürde bir boşluk gözlenmektedir. Son dönemlerde yapılan çalışmalarda gelişimsel bakış açısından uzaklaşan ve travmatik yaşam

olaylarında yetişkinlerde psikolojik sağlamlığı odak alan bir eğilim gözlenmektedir. Sadece çocukluk ya da ergenlik döneminde değil yaşamın her döneminde kişilerin psikolojik dengelerini korumak adına çaba sarf etmeleri gerekebilir. Bu nokta, psikolojik olarak sağlam olan yetişkin bireyler avantajlı olarak görülebilirler. Ancak bu konuda yapılmış çalışmalar oldukça kısıtlıdır. Son zamanlarda “risk altında” olan çocuklara yoğunlaşan çalışmalar travma örneklemelerine dönmeye başlamıştır (Bonanno, 2004). Benzer şekilde, adaptasyon kapasitesinin ve esnekliğin her yaş döneminde bir ihtiyaç olduğu gerçeği kaçınılmazdır. Özellikle, Amerika’daki terörist saldırılardan sonra travmatik durumlarda psikolojik sağlamlığın önemi üzerinde durulmaya başlanmıştır.(Bonanno, 2004; Davidson et al., 2005; Newman, 2005). Önerilen bir modelde, psikolojik sağlamlığın toparlanma sürecinden farklı olduğu, insanın doğasında bulunduğu ve insanı psikolojik olarak sağlam yapan birden fazla ve tahmin edilmesi güç yollar olduğu söylenmektedir (Bonanno, 2004).

Psikolojik sağlamlık iyimserlik (Floyd, 1996; Peterson, 2000); umut (Snyder, 2000a, Werner & Smith, 1982); öz-kontrol (Baumeister & Exline, 2000); benlik-saygısı (Cichetti & Rogosch, 1997; Fergusson & Lynskey, 1996; Moran & Eckenrode, 1992); yaratıcılık (Simonton, 2000); iç odaklı kontrol (Parker, Cowen, Work & Wyman, 1990) ile ilişkili bulunmuştur.

Bu çalışmada, psikolojik sağlamlıkla ilişkili görünen duygusal ve bilişsel değişkenler tespit etmek için ilgili literatür incelenmiş ve bu değişkenler kullanılarak psikolojik sağlamlığı açıklayan bir hipotetik model kurulmuştur.

Benlik-saygısı

Benlik-saygısı psikoloji alanında en çok çalışılmış ve en temel değişkenlerden biridir. Bireyler sürekli olarak benlik-saygılarını korumak ya da artırmak için çabalar (Tajfel & Turner, 1986, p. 16). Kendini genel olarak değerli hissetmek olarak tanımlanır (Rosenberg, 1965). Yüksek öz saygı psikolojik sağlığın göstergelerinden biri olarak kabul edilmektedir (Crocker & Park, 2004) ve genel olarak iyi oluş haline etki etmektedir (Dubois & Flay, 2004). Bir çok yaklaşım ya da model, benlik-saygısının insan motivasyonu içinde vazgeçilmez bir güç olarak görür ve bir çok

olumlu deęişkenle ilişkilendirilir (Pyszczynski et al., 2004). Bu çalışmada, insandaki en temel deęişkenlerden biri olarak kabul gördüğünden psikolojik sağlamlıkla ilgili olabileceęi varsayılmıştır. Her iki kavramda üst ve bütünleştirici deęişkenler olarak görölmektedir.

İyimserlik

İyimserlik fiziksel ve psikolojik iyi oluş durumlarında ve uyum sürecinde koruyucu bir rol üstlenir. İyimserliğin insanlardaki koruyucu ve olumlu etkisini gösteren oldukça çok sayıda araştırma bulgusu vardır. (Achat, Kawachi, Spiro, DeMolles & Sparrow, 2000; Billingsley, Waehler, & Hardin 1993; Carver, Spencer & Scheier, 1998; Peterson & Bossio, 2001; Scheier, Carver, & Bridges, 2001; Taylor & Brown, 1988; Peterson, Seligman & Vaillant 1988). İyimser insanlar olumsuzluklar karşısında dahi yılmayıp amaçlarına ulaşabilecekleri inancı taşırlar (Carver et al., 1998) ve problem çözme becerileri ve kontrol edilemeyen olayları kabul etme yetileri gelişmiştir (Aspinwall, Richter & Hoffman, 2001). Genellenmiş olarak gelecekte olumsuz yerine olumlu beklentiler içinde olma ya da yaşamda genel olarak iyi şeyler olacağı inancı taşımak iyimserliğin tanımıdır (Scheier & Carver, 1985). İyimserlik psikolojik olarak sağlam olan kişiliğin temel taşlarından biri olarak görünmektedir (Major et al., 1998; Wanberg & Banas, 2000).

Umut

Umutlu olmak potansiyel olarak psikolojik sağlamlığın faktörlerinden biridir (Kashdan et al., 2002) Kişinin bir amaca ulaşması için gerekli motivasyonu sağlayan harekete geçiren ve amaca yönelik uygun yollar bulması sağlayan bilişsel bir yetenek (Snyder et al., 1991; Snyder et al., 1991) olarak tanımlanmıştır. Amaca yönelik enerji temsil eden bilişsel yetenek ve bunun için uygun yollar bulunmasını sağlayan bilişsel yetenek olarak ikiye ayrılmıştır. Umutlu olmak bir çok stresli durumda tampon görevi görür (Barnum, Snyder, Rapoff, Mani, & Thompson, 1998; Taylor & Armor, 1996) ve yüksek öz saygı (Curry et al., 1997). gibi bir çok olumlu deęişkenle ilişkili görülür. Psikolojik sağlamlık kavramı için umut vazgeçilmez bir parça olarak tanımlanır (Werner & Smith, 1992).

Yaşam Doyumu

Yaşam doyumu öznel iyi oluş halinin temel bileşenlerinden biridir (Diener, 1984). Kişinin genel yaşam doyumuna yönelik bilişsel bir değerledir. Bugüne kadar, psikolojik sağlamlıkla yaşam doyumu arasındaki ilişki değerlendiren bir çalışmaya rastlanmamıştır. Ancak yaşam doyumu benlik-saygısı ve iyimserlik (Lucas, Diener & Suh, 1996) gibi pozitif kavramlarla ilişkilidir.

Olumlu Duygular

Olumlu duygular insanın uzun ya da kısa vade de geliştiğine, iyiye gittiğine dair önemli göstergelerdir (Frederickson, 2001). Bir çok kuramcı olumlu duyguların kolaylaştırıcı rolüne değinmişlerdir (e.g., Cacioppo, Gardner, & Berntson, 1999; Carver & Scheier, 1990; Frederickson, 2001). Olumlu duygular düşüncelerin ve davranışların çeşitliliğini artırır; bireyin yeni bir duruma adapte olurken kullanabileceği fiziksel ve psikolojik kaynaklarını güçlendirir. Olumlu duyguların fazlalığı stresli olaylardan daha çabuk toparlanabilme yetisinin gelişmesine sebep olur. Ayrıca bireye motivasyon gücü sağlar (Frederickson, 2001). Olumlu duygulara sahip olan insanların bilişsel olarak daha esnek düşünebileceği ileri sürülmüştür (Frederickson, 1998). Literatürde çok sayıda değişkenle çalışılmış insanlar üzerindeki pozitif etkisi kanıtlanmıştır (Connolly & Viswesvaran, 2000; Diener & Seligman, 2002; Pfeiffer & Wong, 1989; Sullivan et al., 2001). Psikolojik sağlamlıkla en çok çalışılmış değişkenlerden biridir. Bu çalışmada da, iki değişken arasında ilişki olduğu varsayılmıştır.

Psikolojik Sağlamlık ve Doğal Afetler

Doğal afetler her zaman insanlar için zorlu yaşam olayları olmuşlardır. Dünyada doğal afetlerden etkilenen insanların sayısı gün geçtikçe artmaktadır (EM-DAT, The OFDA/CRED International Disaster Database). Türkiye’de olan doğal afetlerin sıklığı göz önüne alındığında, daha iyi planlanmış afete hazırlık planlarının hayata geçirilmesi ve ampirik bilgilerin artması gerekmektedir.

Araştırmanın Amacı

Bu çalışmada, psikolojik sağlamlığı etkileyen bilişsel ve duygusal değişkenlerin arasındaki ilişkilerin değerlendirilerek söz konusu kavramın doğal afet yaşayan bireyler arasında kuramsal bir modelle açıklanması amaçlanmıştır. Çalışmada, psikolojik sağlamlığa katkıda bulunan kişisel faktörleri açıklayabilecek kuramsal bir modelin geliştirilmesi hedeflenmiştir.

Psikolojik Sağlamlığı Açıklayan Kuramsal Model

Yapılandırmacı yaklaşıma göre, insanlar öznel değerlerine göre zihinsel yapılarını kullanarak kendi gerçekliklerini yaratır (Mahoney, 1995b). Varolan zihinsel yapılarına dayanarak, aktif olarak duygusal tepkilerini ve davranışlarını yaratırlar.

Bilişsel davranışçı yaklaşıma göre, olumlu ya da olumsuz duygu ve düşüncelerimizin belirleyicileri düşüncelerimizdir (Beck, 1976; Ellis, 1994; Lazarus, 1991). Düşünceler ve duygular arasındaki bağlantı bilişsel davranışçı yaklaşımlarda vurgulanmıştır. Ancak Ellis'e (1994) göre, düşüncelerimizin niteliğine bağlı olarak fonksiyonel ve fonksiyonel olmayan duygularımız ortaya çıkar. Duygular düşünce ve inanış sistemimizin ürünüdür (Seligman, 1995).

Bu çalışmada bilişsel ve duygusal değişkenlerin arasındaki etkileşimin psikolojik sağlamlığa etkide bulunabileceği hipotezi kurulmuştur. Özetle bilişsel kavramların duyguların ortaya çıkmasında etkili olacağı ve bu etkileşimin psikolojik sağlamlık kavramını açıklayacağı varsayılmıştır.

Benlik-saygısı üst değişken olmasından dolayı başlangıç değişkeni olarak modele alınmıştır. Modelde, benlik-saygısı değişkeninin bireyin bilişsel kavramları üzerinde etkili olacağı bunun da yaşam doyumuna ve olumlu duygulara neden olacağı öne sürülmektedir. Benlik-saygısı ve psikolojik sağlamlık iki temel ve üst değişken olarak modelin başlangıç ve sonuç kısmında yer almaktadır. Ayrıca model bilişsel ve duygusal kavramlar arasındaki bağlantıyı da sınamaktadır.

Araştırmanın Önemi

Çalışmanın bulguları, doğal afet yaşamış bireylerde psikolojik sağlamlığa etki eden kişisel faktörlere dair hazırlık niteliğinde olabilecek ön bilgiye katkıda bulunmuştur. Ayrıca, uzun vadede, psikolojik sağlamlık kuramına katkıda bulunabilecek bulgular elde edilmiştir. Yetişkinlik döneminde psikolojik sağlamlık literatürde bir boşluk olarak görünmektedir. Bu çalışma örneklemini yetişkenler oluşturduğu için bu boşluğun doldurulmasına katkıda bulunmuştur. Gelecekte, doğal afetlerin etkisini azaltmak için yapılacak çalışmalara ışık tutabilir. Psikolojik sağlamlıkla ilgili bulgular genelde Amerika'daki örneklemlerden elde edilmiştir. Bu çalışmanın bulguları kullanılan örneklem bakımından da ayrıca önem taşımaktadır. Bu zamana kadar, kişisel faktörlerin psikolojik sağlamlıkla ilişkilerine ayrı ayrı çalışmalarda bakılmıştır. Bu çalışmada diğerlerinden farklı olarak söz konusu faktörleri kuramsal bir psikolojik sağlamlık modelinde bir araya getirmiştir. Ek olarak, çalışmanın kapsamında, psikolojik sağlamlığı ölçme araçlarından birinin Türkçeye adaptasyonu yapılmış ve bu alanda kullanılabilir bir ölçek kazandırılmıştır.

2. YÖNTEM

Örneklem

Çalışmanın örneklemini 363 (224 erkek, 138 bayan) 1999 depremini Bolu, Düzce, Kocaeli, Sakarya ya da Yalova illerinden birinde yaşamış bireyler oluşturmuştur.

Ölçme Araçları

Psikolojik Sağlamlık

Ego-Sağlamlığı ölçeği Block ve Kremen (1996) tarafından geliştirilmiş ve Türkçeye adaptasyonu araştırmacı tarafından yapılmıştır. Geçerlilik ve güvenirlik çalışmaları oldukça iyi sonuçlar vermiştir.

Benlik-saygısı

Katılımcıların kendilerine verdikleri değeri ölçmek için literatürde oldukça sık kullanılan Rosenberg Benlik-saygısı ölçeği (kısa form) kullanılmıştır. Ölçeğin adaptasyon çalışması Tuğrul (1994) tarafından yapılmıştır.

Umut

Katılımcıların umut düzeyleri Umut Ölçeği (Snyder, 1991a) kullanılarak ölçülmüştür. Akman ve Korkut (1993) tarafından Türkçeye çevrilmiş ve adaptasyon çalışması yapılmıştır.

İyimserlik

İyimserlik düzeyi literatürde en çok kullanılan iyimserlik ölçeği olan Yaşam Yönelimi Testi (Scheier & Carver, 1985) ölçülmüştür. Türkçeye uyarlama çalışması Aydın ve Tezer (1991) tarafından yapılmıştır.

Yaşam Doyumu Ölçeği

Bireylerin yaşamlarıyla ilgili doyumlarını ölçmek amacıyla Diener ve arkadaşları (1985) tarafından geliştirilen bir ölçek (*Satisfaction with Life Scale*) kullanılmıştır. Kişinin bütün olarak yaşamından aldığı doyumunu ölçmek amacıyla hazırlanmıştır ve Sümer (1996) tarafından Türkçe'ye çevrilmiştir.

Olumlu Duygu Ölçeği

Olumlu duyguları ölçmek için Watson ve arkadaşlarının geliştirdikleri 20 duygudan (10 olumlu; 10 olumsuz) oluşan ölçek kullanılmıştır. Ancak sadece olumlu duygularla ilgili olan maddeler dikkate alınmıştır. Uyarlama çalışması Gençöz (2000) tarafından yapılmıştır.

Ölçme Modelleri

Bu bölümde, yapısal eşitlik modellerinin ilk aşamasını oluşturan ölçme modellerine dair sonuçlar sunulmaktadır. Örtük değişkenlere ilişkin olarak çalışmada ilk olarak ölçme modelleri test edilmiş ve yapısal eşitlik modelinde kullanılan örtük değişkenler tanımlanmıştır. Daha sonra yapısal eşitlik modeli kullanılarak hipotez model test edilmiştir.

Her bir örtük değişken için önce iki aşamalı olarak faktör analiz ve doğrulayıcı faktör analizi yapılmıştır. Teorik olarak tek boyutlu görünen iyimserlik, pozitif duygular ve benlik-saygısı değişkenleri toplam skor üzerinden tek göstergeli örtük değişkenler olarak yapısal eşitlik modeline sokulmuştur.

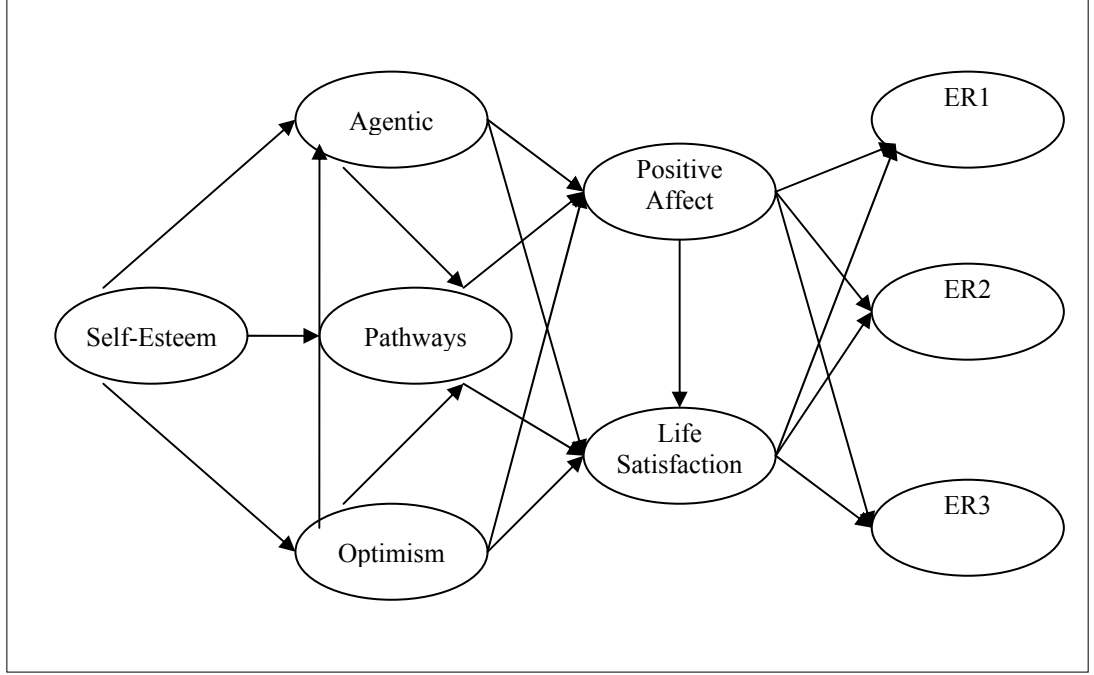
Yaşam doyumu kuramsal olarak tek boyutlu olarak tanımlanmıştır ve faktör analiz ve doğrulayıcı faktör analiz sonuçları orjinal yapıyı desteklemiştir. Ancak ölçek sadece beş maddeden oluşan kısa bir ölçek olduğundan yapısal eşitlik modelinde toplam skor yerine beş maddenin gösterge olarak kullanıldığı örtük değişken tanımlanmıştır.

Umut değişkeni kuramsal olarak iki boyut olarak tanımlanmıştır ve yapılan analizler sonucunda iki faktör yapısı desteklenmiştir. Yapısal eşitlik modelinde, ilgili maddelerin gösterge olarak kullanıldıkları iki ayrı örtük değişken olarak tanımlanmıştır.

Ego-Sağlamlık ölçeği ülkemizde ilk kez kullanıldığı için orjinal faktör yapısı tek faktör olmasına rağmen faktör analiz sonucunda elde edilen üç faktör yapısal eşitlik modelinde bağımlı örtük değişkenler olarak kullanılmıştır.

3. SONUÇLAR

Kurulan hipotetik modelde, benlik-saygısının bilişsel kavramlar olan iyimserlik ve umut değişkenleri üzerine etkisi olabileceği düşünülmüştür. Kuramsal olarak umut değişkeninin iki boyutlu olarak tanımlanmasından dolayı iki ayrı örtük değişken olarak değerlendirilmiştir. Buna bağlı olarak, bilişsel değişkenlerin duygusal değişkenler üzerinde etkisi olabileceği varsayımından yola çıkılarak bilişsel ve duygusal değişkenler arasındaki ilişkiler değerlendirilmiştir. Bu durumda, düşünce sistemi ve duygular arasındaki ilişki test edilmiştir. Her ne kadar yaşam doyumu değişkeni bilişsel bir kavram olarak tanımlanmış olsa da ilgili ölçekteki maddeler bireylerin genel olarak yaşamdan keyif almasıyla ilgilidir. Bu durumda da duygularla yakından ilgilidir. Duygusal değişkenlerin psikolojik sağlamlık üzerine etkili olabileceği ve sonuç olarak model; benlik-saygısı ile psikolojik sağlamlık arasında dolaylı bir ilişki olduğu varsayımına dayanmaktadır. Aşağıdaki figürde sunulan hipotetik model test edilmiştir.



Yapılan analizler sonucunda, hipotetik olarak bağlantılı olabileceği düşünülen bütün yollar anlamlı çıkmamıştır. Başka bir deyişle, model bütün olarak doğrulanmamıştır. Modeldeki anlamlı olmayan ya da çalışmayan beş yol modelden silinerek; yeni bir model elde edilmiş ve tekrar test edilmiştir. Yeni elde edilen modele ilişkin olarak ikinci kez yapılan yapısal eşitlik modeli analizi, ikinci modelin dataya uyum sağladığını göstermiştir.

Analiz sonuçlarına göre, benlik-saygısı değişkeninden bilişsel değişkenlere (umut ve iyimserlik) giden bütün yollar anlamlı gözükmemektedir. İyimserlik ve umut değişkenleri arasındaki ilişkilere bakıldığında, kurulan hipotez ilişkiler modelde doğrulanmıştır. İyimserlik umut değişkenlerinin yordayıcısı olarak bulunmuştur.

Bilişsel ve duygusal değişkenler arasındaki ilişkileri değerlendirilen yollar dikkate alındığında ise; umut değişkenlerinin her ikisi de olumlu duyguların yordayıcısı olarak bulunmuştur. Ayrıca iyimserlikten ve umut değişkeninden birinden (agency) yaşam doyumuna giden yollar da anlamlı gözükmemektedir.

Modelin son kısmı ile ilgili olarak, yaşam doyumu değişkeni psikolojik sağlamlıkla ilgili olan üç örtük değişkenden sadece ikisini yordamıştır. Son örtük değişkene (yeniliklere açık olma) giden yol ilk modelde anlamsız bulunduğundan ikinci modelde yer almamıştır. Olumlu duygulardan psikolojik sağlamlık değişkenlerine giden bütün yollar anlamlı bulunmuştur. Başka bir deyişle, olumlu duygular psikolojik sağlamlığın tüm boyutlarıyla ilgili gözükmektedir. Tüm model tarafından psikolojik sağlamlık değişkenleri göz önüne alındığında açıklanan varyans sırasıyla % 63, %78 ve %26 olarak belirlenmiştir.

4. TARTIŞMA

Yapısal eşitlik modeli analizleri sonucuna göre, he iki modele dair ampirik bulgular elde edilmiştir. Ancak ikinci model tümüyle doğrulandığı için önerilmiştir.

İkinci modelde, benlik-saygısı iyimserlik ve umut değişkenlerinin yordayıcısı olarak bulunmuştur. Ayrıca iyimserlik kuramsal olarak tutarlılık göstererek umut değişkenlerini anlamlı olarak yordamıştır. Bilişsel ve duygusal değişkenler arasındaki ilişkiler incelendiğinde, umut değişkenlerinin olumlu duyguların anlamlı yordayıcısı olduğu bulunmuştur. Yine modelden elde edilen sonuçlara göre, iyimserlik ve umut değişkenlerinden sadece bir tanesi (agency) yaşam doyumu ile ilgili gözükmektedir.

Kabul edilen modele göre, yaşam doyumu ve olumlu duygular psikolojik sağlamlığın yordayıcılarıdır. Ancak olumlu duygular her bir boyutu yordarken yaşam doyumu psikolojik sağlamlıkla ilgili son boyutu yordamamıştır. Bu durumda, olumlu duygular yaşam doyumundan daha güçlü bir yordayıcı olarak karşımıza çıkmaktadır. Modele göre, en temeldeki bulgu psikolojik sağlamlığın ve benlik-saygısının dolaylı olarak ilişkili olduğuna kanıt sunmaktadır. Buna bağlı olarak, iyimserlik yaşam doyumu üzerinden dolaylı olarak psikolojik sağlamlıkla ilgilidir. Benzer şekilde, umut değişkenleri olumlu duygular üzerinden psikolojik sağlamlıkla ilgili bulunmuştur.

Açıklanan varyans oranları psikolojik sağlamlıkla ilgili ilk iki örtük değişken için oldukça yüksektir. Ancak, psikolojik sağlamlıkla ilgili olan son örtük değişken için açıklanan varyans oranı çok daha düşüktür. Sonuçlara göre, seçilen kişisel faktörler ilk iki boyuta göre üçüncü psikolojik sağlamlık boyutuyla daha az ilgili görünmektedir. Bu durumda, seçilen değişkenler daha çok ilk iki boyutu açıklamıştır. Son boyutu açıklayan diğer kavramlar ve bu kavramlar arasındaki etkileşimler olabilir.

Bu durumda, özetlenecek olursa öz-güveni yüksek olan bireyler daha iyimser ve umutlu olarak hayata bakarlar. Umut taşıyan bireyler daha çok olumlu duygu yaşarlar ve sonuç psikolojik olarak daha sağlam olurlar. İyimser olan bireyler ise daha fazla yaşam doyumunu hissederler ve psikolojik olarak daha sağlam olurlar.

Çalışma genel olarak, olumlu duygulara sahip olmanın negatif yaşam olayları karşısında psikolojik sağlamlığın öne çıkmasında ateşleyici bir güç olabileceği fikrini desteklemektedir. Desteklenen model ayrıca benlik-saygısının insan yaşamındaki temel rolünü yansıtmaktadır. Özetle, insan doğasında gelişime ya da daha iyi olmaya doğru giden bir doğal çabalama kaçınılmazdır.

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