ACADEMIC RESILIENCE: AN INVESTIGATION OF PROTECTIVE FACTORS CONTRIBUTING TO THE ACADEMIC ACHIEVEMENT OF EIGHTH GRADE STUDENTS IN POVERTY

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ABSTRACT

ACADEMIC RESILIENCE: AN INVESTIGATION OF PROTECTIVE FACTORS CONTRIBUTING TO THE ACADEMIC ACHIEVEMENT OF EIGHTH GRADE STUDENTS IN POVERTY

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The purpose of the present study is to assess the potential individual characteristics and environmental protective factors that promote academic resilience among impoverished eighth grade elementary school students in Turkey.

The sample consisted of 872 (439 girls, 433 boys) students enrolled in 6 low SES inner-city public elementary schools in Ankara. Five instruments, Demographic Data Form, Resilience and Youth Development Module (RYDM), Scholastic Competence Scale (SCS), Beck Hopelessness Scale (BHS), and Nowicki-Strickland Locus of Control Scale (N-SLCS) were used in the present study. Grade point averages (6^{th}, 7^{th} and 8^{th} grades) of students were used as the measure of Academic Achievement.

Exploratory factor analysis and structural equation modeling were used to analyze the data. The results of the present study revealed that home high expectations, school caring relationships and high expectations, along with the peer caring relationships were the prominent external protective factors that predicted

academic resilience for the adolescents in poverty. Considering the internal protective factors, having positive self-perceptions about one's academic abilities, high educational aspirations, having empathic understanding, internal locus of control and being hopeful for the future were positively linked with the academic resilience of adolescents in poverty.

Conversely, the external factors of home caring relationships, community caring relationships and high expectations, and peer high expectations, and internal factor of problem solving ability were negatively linked with academic resilience. These factors seem to be vulnerability factors for impoverished Turkish adolescents although they are generally accepted as the protective ones.

Keywords: Resilience, academic resilience, protective factors, poverty, structural equation modeling.

ÖZ

AKADEMİK SAĞLAMLIK: YOKSULLUK İÇİNDEKİ SEKİZİNCİ SINIF ÖĞRENCİLERİNİN AKADEMİK BAŞARILARINA KATKIDA BULUNAN KORUYUCU FAKTÖRLERİN İNCELENMESİ

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Bu çalışmanın temel amacı, yoksulluk içindeki sekizinci sınıf ilköğretim okulu öğrencilerinin akademik sağlamlıklarının gelişmesine yardım eden koruyucu bireysel özellikler ile çevresel faktörlerin incelenmesidir.

Araştırmanın örneklemi, Ankara ilinin sosyo-ekonomik statüsü düşük olan gecekondu bölgelerindeki 6 ilköğretim okuluna devam eden 872 (439 kız, 433 erkek) sekizinci sınıf öğrencisinden oluşmaktadır. Bu çalışmada, Demografik Bilgi Formu, Sağlamlık ve Ergen Gelişim Ölçeği, Akademik Yeterlik Ölçeği, Beck Umutsuzluk Ölçeği ve Nowicki-Strickland İç-Dış Kontrol Odağı Ölçeği olmak üzere beş ölçme aracı kullanılmıştır. Öğrencilerin 6., 7. ve 8. sınıf genel not ortalamaları Akademik Başarı ölçütü olarak kabul edilmiştir.

Bu çalışma için toplanan veriler açıklayıcı faktör analizi ve yapısal eşitlik modeli teknikleri kullanılarak analiz edilmiştir. Araştırma bulgularında, evdeki yüksek beklentiler, okuldaki ilişkilerde ilgi ve sevecenlik, arkadaş ilişkilerindeki ilgi ve sevecenlik, yoksul öğrencilerin akademik sağlamlığını yordayan en temel dışsal

koruyucu faktörler olarak belirlenmiştir. Bununla birlikte, içsel koruyucu faktörler dikkate alındığında, öğrencilerin kendi akademik yeterlikleri konusundaki olumlu algıları, yüksek eğitimsel beklenti, empatik bir anlayışa sahip olmak, içten denetimlilik ve gelecek konusunda umutlu olmak ile yoksul ergenlerin akademik sağlamlığı arasında olumlu bir ilişki görülmektedir.

Diğer yandan, dışsal koruyucu faktörler arasında yer alan evdeki ilişkilerde ilgi ve sevecenlik, toplumsal ilişkilerde ilgi ve sevecenlik ve arkadaş grubundaki yüksek beklentiler ve içsel koruyucu faktörler arasında yer alan problem çözme becerisi ile yoksul öğrencilerin akademik başarıları arasında anlamlı fakat olumsuz yönde bir ilişki olduğu belirlenmiştir. Başka bir deyişle, adı geçen bu faktörler, koruyucu olma özelliklerinin aksine, çalışmadaki örneklem grubunun akademik sağlamlıklarını olumsuz yönde etkileyen faktörler olarak görülmektedir.

Anahtar Kelimeler: Sağlamlık, akademik sağlamlık, koruyucu faktörler, yoksulluk, yapısal eşitlik modeli.

To Resilient Individuals, who have made so much possible.

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CHAPTER I

INTRODUCTION

Throughout the past three decades, the concepts of childhood risk and resilience have occasionally appeared as themes in the developmental psychology, counseling, and psychiatry literature. Resilience has recently begun to grow to be an increasingly popular concept for research and application, specifically in primary prevention and intervention.

Given the reduced funding for services to help children and families in adverse conditions, knowledge and research on low cost methods for increasing resilience to negative life events is critically required. A better understanding of ways to enhance resilience in all children holds great promise for improving the effectiveness of preventive community, school and family services (Kumpfer, 1999).

High risks for children such as family and community violence, poverty, divorce, child abuse, and oppression already demand an understanding of how people struggle to overcome adverse life circumstances (Greene, 2002). In addition, widespread attention has been given to the environmental, economical and psychological well-being of children and adolescents in understanding the processes that facilitate and undermine the development of resilience (Masten & Coatsworth, 1998).

It should be noted that conceptualization of resilience and understanding of how children and adolescents developed well in the context of risk or adversity provides important information and clues for helping children and adolescents who live under similar adverse circumstances (Lambie, Leone, & Martin, 2002; Masten & Reed,

2002). In other words, mental health professionals can benefit from knowing what makes a difference in the lives of resilient children and adolescents (Masten & Reed, 2002). This knowledge base sufficiently advanced to provide guidelines for mental health policy and practice (Greene & Conrad, 2002). That is, resilient behaviors may be most efficiently fostered for others at-risk by developing effective preventive strategies and policies aimed at promoting typical psychosocial processes (Doll & Lyon, 1998; Lambie, Leone, & Martin, 2002; Masten, 1999; Masten & Reed, 2002).

Thus, resilience has been an attractive addition to prevention research. Public health service providers, school counselors, educators, and social scientists all attempt to develop, implement, and evaluate preventive programs to reduce the future incidence and prevalence of negative outcomes for children and youth at risk.

1.1. Historical Context of the Study of Resilience

The theoretical understanding of what constitutes resilience emerged from the study of children at risk for psychopathology and problems in development related to genetic or experiential circumstances such as; parental mental illness, poverty, or a combination of such risk factors (Masten, 1999; 2001).

Early studies of developmental psychopathologists and psychiatrists, who have been the major group conducting resilience research, focused primarily on risk factors and the etiology of problems among severely disordered patients in order to understand maladaptive behavior, but the subset of patients who showed relatively adaptive patterns were considered atypical and ignored (Luthar, Cicchetti, & Becker, 2002). For example, natural history studies of schizophrenic patients usually focused on the typical modal negative outcomes while ignoring the positive, more adaptive outcomes of a small subset of the study populations (Glantz & Sloboda, 1999).

However, during the 1970s, the researchers realized that a small number of schizophrenics did not have highly negative outcome as anticipated and were also characterized by a successful history of higher social and personal competence at

work, social relations and marriage (Garmezy, 1970). Similarly, studies of children of schizophrenic mothers showed that many of these children developed quite well despite their high-risk status (Luthar, Cicchetti, Becker, 2002). Studies of children who experienced severe biological problems or extreme social and economic deprivation further demonstrated adaptive, resilient subgroups (Mrazek & Haggerty, 1994). The unexpected positive results of these empirical studies led to increasing empirical efforts to understand individual variations in response to adversity. The pioneers of resilience research began to argue that investigators had neglected an important perspective and set of phenomena by attending exclusively to risk factors and negative outcomes. Thus, study of resilience held potential to learn what makes a difference in the lives of children at risk that could guide prevention, intervention and policy (Masten, 1999, 2001).

Hence, the focus of the investigation changes from those who have problems to those who have succeeded in some way. Resilient subgroups became the focus of several later studies that has yielded resilience models, methods and data that guided research on populations emerging from other risk situations in the past three decades (Glantz & Sloboda, 1999).

The emergence and recognition of the study of resilience in the last three decades not only represents a novel approach to the understanding of how children develop well under adverse circumstances (Engle, Castle, & Menon, 1996), but also has overturned many negative assumptions and deficit-focused models about the development of children growing up under the threat of disadvantage and adversity (Masten, 2001).

1.2 Nature and Definition of Resilience

The resilience research is closely related to the origins of developmental psychopathology, which concerns the study of psychological problems in children and adolescents as the basic integrative framework (Masten & Braswell, 1991). In fact, this perspective connects the research on resilience and psychopathology, but resilience and psychopathology represent two opposite poles of the same story:

individual differences in the development of children and adolescents (Masten, 1994), with psychopathology representing the negative pole (e.g., succumbing to adversity and developing maladjustment) and resilience the positive (e.g., overcoming adversity and becoming competent adults).

The term resiliency is originally derived from Latin roots *resiliens* that is used to refer to the pliant or elastic quality of a substance (Greene, 2002). The term and also means "to jump (or bounce) back." *The Random House Dictionary* (1967, p.1120) says that resilience is "the power or ability to return to the original form or position after being bent, compressed, or stretched." The term has also been defined by *Webster's New Twentieth Century Dictionary of the English Language* (1958, p.1540) as "the ability to bounce back or spring back into shape, position after being pressed or stretched or the ability to recover strength, spirits, good humor, etc., quickly", and by *The Heritage Illustrated Dictionary of the English Language* (1973, p.1106) as "the ability to recover quickly from illness, change, or misfortune". Although there is no consensus about its definition and the varied meanings of the concept, the definitions presented below allow for a full understanding of the conception of resilience:

"Resilience is a global construct that deals with how a child copes with stress and recovery from trauma. Resilience, like competence and adaptation as outcomes of coping, concerns with positive growth, orientation toward future and hope (Murphy, 1987, p.101)."

Rutter (1990, p.181) 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."

Begun (1993, pp. 28-29) states that "resilience is not defined in terms of the absence of pathology and not to be confused with heroic self-determination. Instead, it is defined as the ability to cope with adversity, stress, and deprivation."

Fraser, Richman and Galinsky (1999, p.136) describe resilience "as the ability of individuals who adapt well to extraordinary circumstances, achieving positive and unexpected outcomes in the face of adversity."

Masten, Best and Garmezy (1990, as cited in Masten, 1994, pp.7-8) concluded that resilience has been used to define three main classes of phenomena in the literature:

> The first type occurs in people from high-risk groups who have better-than-expected outcomes (i.e., those who "overcome the odds" against good development). Anecdotes abound of famous or successful people from very disadvantaged backgrounds. Their stories are often surprisingly congruent with more systematic studies of resilient high-risk children. Such studies attempt to identify the predictors of good outcome in high-risk groups.
>
> The second major class of resilience phenomena refers to good adaptation despite stressful experiences. Sometimes the focus of this work is a common stressor, such as divorce. Other times, it is a composite of heterogeneous stressful life events that have occurred during a recent time period. Studies examine the general effects of stressors on child behavior, and the moderators that seem to enhance or reduce the effects of adversity (vulnerability and protective factors).
>
> The third class includes studies of individual differences in recovery from trauma. By definition, traumatic experiences are expected to reduce the quality of functioning. No one is invulnerable, despite the use of term in the past. When stressors are extreme or life threatening, resilience refers to patterns of trauma.

As it is clearly reflected on the definitions presented above, there is no universal, commonly accepted definition of resilience. However, in almost all definitions a central notion exists that resilience, as a dynamic process, involves successful coping and positive adaptation or the development of competence in the face of a significant risk, adversity or trauma (Doll & Lyon, 1998; Garmezy, Masten, & Tellegen 1984; Luthar & Cicchetti, 2000; Luthar, Cicchetti, & Becker, 2000; Masten & Reed, 2002; Rutter, 1990, 1999; Wolin & Wolin, 1993). This notion implicitly represents a two-dimensional construct that (a) exposure to risk or adversity and (b) the achievement of positive adaptation outcomes (Luthar & Cicchetti, 2000; Luthar, Cicchetti, & Becker, 2000).

It is important to note that resilience construct does not imply a personality trait or an attribute of the individual (Luthar, Cicchetti, & Becker, 2000, Rutter, 1999). Rather, it represents a dynamic developmental process referring to the maintenance of positive adjustment under threatening life circumstances (Luthar, Cicchetti, & Becker, 2000; Masten, 1994).

On the other hand, for bringing greater precision to terminology commonly used in the literature and specifying the particular domains of resilience, researchers have been increasingly using constrained terms (Luthar, Cicchetti, & Becker, 2000) such as "educational resilience" (Wang, Haertel & Walberg, 1994) or "academic resilience" (Alva, 1991).

Educational resilience is defined as the "highlighted likelihood of success in school and in other life accomplishments, despite environmental adversities, brought about by early traits, conditions, and experiences" (Wanq, Haertel, & Walberg, 1994, p. 46).

Similarly, academic resilience is defined as the "high levels of achievement motivation and performance despite the presence of stressful events and conditions that place individuals at risk of doing poorly in school and ultimately dropping out of school" (Alva, 1991, p.19).

In the literature, the term academic resilience seems to be highly accepted and used by resilience researchers (Borman & Overman, 2004; Cappella & Rhona, 2001; Finn & Rock, 1997; Gonzalez & Padilla, 1997). Thus, the term *academic resilience* was assumed as the particular sphere of resilience. Academic achievement is considered as one of the appropriate indicator of academic competence and resilience for school-age children (Masten, 1994; Masten & Coastworth, 1998). The term academic resilience as defined by Alva (1991) was assumed as comprehensive enough and used throughout the present study.

To conclude, although there are various definitions of the resilience construct, three basic terms are subsumed in most of the definitions. These terms are (a) risk or adversity, (b) positive adaptation or competence, and (c) ameliorative or protective factors. It means, at a general level, resilience is "inferred on the basis of significant interactions between risk and protective factors to the extent that protective factors are associated with healthy adaptation" (Windle, 1999, p.163). In other words, *resilience can be equated with any direct or indirect variable(s) correlated with or predictive of positive outcome(s) in at-risk children* (Kumpfer, 1999).

1.3 Risk, Positive Outcomes and Protective Factors

Within the context of conceptualization of resilience explained above, risk factors, positive outcomes, and protective factors and the relevant research findings were explained in sufficient details below:

1.3.1 Risk

Resilience can only be defined when individual experiences some type of risk or adversity. Without having experienced any significant risk, such children can be called as "competent", "well adjusted", or simply "normal" but cannot be called as "resilient" (Masten & Reed, 2002).

Resilience research also requires the capacity to define "high-risk" environments that have negative impact on the people and "high-risk" people who adapt amazingly well. Risk, also referred to as adversity, is a statistical concept that originated in epidemiology and mostly used for groups but not individuals. Risk factors are defined as "any influences that increase the probability of onset, digression to a more serious state, or maintenance of a problem condition" (Kirby & Fraser, 1997, pp.10-11). In other words, risk factors refer to the characteristics of a group of people, especially children and youth, which increase the probability of an undesirable outcome, such as delinquency or dropping out of school (Masten, 1994). Some risk factors are causally related to negative outcomes, whereas others simply

represent correlates, sometimes called markers, of potential negative outcomes. Risk factors, also called vulnerability factors, may include genetic, biological, behavioral, socio-cultural, and demographic conditions, characteristics, or attributes.

Luthar and Cushing (1999) explained that there are three approaches that have increasingly been used to measure psychosocial risk factors in research studies on resilience. The first approach utilizes multiple-item instruments (either in questionnaire or interview format) that include a collection of adverse events, influences or experiences in the life of children and youth. The most commonly used instruments in this measurement approach are *negative life events* checklists or scales (Garmezy, Masten, & Tellegen, 1984; Gest, Reed, & Masten, 1999; Grossman et al., 1992; Masten, Neemann, & Andenas, 1994; Pianta, Egeland, & Sroufe, 1990) for measuring risk in resilience research. Usually, negative life events instruments (e.g. Masten, Neemann, & Andenas, 1994) include a list of items considered to be experienced more often by children and adolescents, and respondents are asked to indicate the particular events experienced in the recent past.

The second approach for measuring high-risk conditions in resilience research utilizes specific or single life stresses, which is chronic or acute in nature (Luthar & Cushing, 1999). In recent years, there have been a wide variety of specific negative life experiences studied within this measurement strategy including parental psychopathology (Tebes, Kaufman, Adnopoz, & Racusin, 2001), divorce (Hetherington & Stanley-Hagan, 1999), child abuse or neglect (Cicchetti & Rogosch, 1997), and economic deprivation (Baldwin, Baldwin, & Cole, 1990).

The third mostly utilized approach involves the aggregations of a variety of socio-demographic risks to derive an overall estimate of experienced adversity, such as large family size, low income, low parental occupation, minority group status, and poor emotional/ physical health of the mother or father (Luthar & Cushing, 1999).

Literature also showed that, on resilient children and youth, multiple adverse conditions were studied, including (Table 1.1): *premature birth* (Bradley et al.,

1994), *negative life events* (Masten et al., 1990; Masten et al., 1999), *chronic illness/hospitalization* (Bolig & Weddle, 1988; Hobfall & Lerman, 1988; Wells & Schwebel, 1987), *parental illness or psychopathology* (Anthony, 1987a; Birkets, 2000; Musick et al., 1987; Radke-Yarrow & Sherman, 1990; Sameroff, Seifer, Baldwin, & Baldwin, 1993; Tebes, Kaufman, Adnopoz, & Racusin, 2001; Tiet et al., 2001; Worland, Weeks, & Janes, 1987); *parental divorce, separation or single-parent home* (Grych & Fincham, 1997; Hetherington & Stanley-Hagan, 1999; Mulholland, Watt, Philpott, & Sarlin, 1991), *teenage motherhood* (Werner & Smith, 1982), *low SES, economic hardship and poverty* (Baldwin, Baldwin, & Cole, 1990; Buckner, Mezzacappa, & Beardslee, 2003; Conger et al., 1992; Elder, van Nguyen, & Caspi, 1985; Garmezy, 1991; Long & Vaillant, 1984; Luthar, 1999; Mendez, Fantuzzo, & Cicchetti, 2002**;** Shumow, Vandell, & Posner, 1999; Werner & Smith, 1982, 1992, 2001), *child maltreatment* (Beeghly & Cicchetti, 1994; Cicchetti & Rogosch, 1997; Egeland & Farber, 1987; Heller, Larrieu, D'Imperio & Boris, 1999; Kinard, 1998; Moran & Eckenrode, 1992), *community trauma of war and natural disasters* (Baron & Eisman, 1996; Casella & Motta, 1990; Elder & Clipp, 1989; Grotberg, 2001; Hobfall, London & Orr, 1988; Rosenfeld, Lahad, & Cohen, 2001), *family adversity and community violence* (Criss et al., 2002; O'Donnell, Schwab-Stone, & Muyeed, 2002), and *homelessness* (Masten et al., 1993; Reed-Victor & Pelco, 1999; Reed-Victor & Stronge, 2002; Williams, Lindsey, Kurtz, & Jarvis, 2001).

Table 1.1 Risk Factors Studied in Resilience Research

Individual
• Premature birth • Negative life events • Chronic illness / hospitalization
Familial
• Parental illness / psychopathology • Parental divorce, separation or single-parent home • Teenage motherhood
Environmental
• Low socioeconomic status, economic hardship and poverty • Maltreatment • War and natural disasters • Family adversity and community violence • Homelessness

1.3.2 Positive Outcome

Any resilience research begins not only with the description of risk but also the identification of a positive outcome. An important positive outcome is competence in both academic and social domains.

Although it has varying meanings in psychology, competence, most broadly, refers to a pattern of effective adaptation in the environmental context to further the process of development (Masten & Coatsworth, 1998). In resilience research, different criteria have been used for describing competence or good adaptation. These include positive behavior such as the presence of social and academic achievements; the presence of culturally desired behaviors (developmental tasks) within a studied age group; happiness and life satisfaction, or the absence of maladjustment, including mental illness, emotional stress, criminal behavior, or risk-taking behaviors (Luthar & Cushing, 1999; Masten & Reed, 2002).

As summarized by Masten and Reed (2002), the most studied positive outcome variables are: academic achievement (e.g., grades and test scores, staying in school, graduating from high school); behavioral conduct (rule-abiding behavior vs. antisocial behavior); peer acceptance and close friendship; normative mental health (few symptoms of internalizing or externalizing behavior problems); and engagement in age-appropriate activities such as extracurricular activities, sports, and community service (see also Table 1.2).

Table 1.2 Positive Outcome and/or Competence Variables in Resilience Research

- Academic achievement
- Positive social relations / social competence
- Few emotional problems or symptoms (internalizing)
- Few behavioral problems (externalizing)
- Absence of psychopathology
- Composite of psychosocial adjustment

In the developmental psychopathology literature, the judgment of good adaptation or competence is often made with reference to normative developmental tasks (Kirby & Fraser, 1997; Masten 1994). Developmental tasks are the evaluations of the behavior of a person in different age periods and situations based on the generalized expectations of a society or culture in a historical period (Elder, 1998; Masten & Coatsworth, 1998). Although developmental tasks which are shaped by family, culture and historical context may vary from one culture to another, these tasks presumably depend on universal human capabilities and societal goals that will be widely shared across cultures (Masten & Reed, 2002).

Generally, multiple theoretically important domains are taken into consideration while operationalizing positive adaptation or competence (Luthar, Cicchetti, & Becker, 2000). The most recognized strategy involves several stage-salient developmental tasks on which, if successful, the individual would be judged as having met the societal expectations related to a specified life stage (Luthar, Cicchetti, & Becker, 2000; Masten & Coatsworth, 1998; Sroufe & Rutter, 1984). In middle childhood and adolescents, for example, the highlighting indicators of resilience are academic success, social competence with peers and socially appropriate conduct (Masten & Coatsworth, 1998).

Social competence with peers includes effective social interactions such as "getting along well with others, initiating play, entering play and resolving conflicts with peers" (Diener & Kim, 2004, p.4). In addition, quality of peer relations is not only widely stated as the key element of social competence in childhood and adolescence, but also a considerable body of research supported both the concurrent and predictive validity of peer relations as the current and future indicator of competence and a correlate of adaptation (Masten & Coastworth, 1995, 1998).

In adolescence, socioemotional functioning (mostly peer acceptance and popularity) has been found to be linked to higher IQ and positive academic achievement (Masten, Morison, & Pellegrini, 1985; Milgram & Palti, 1993; Masten & Coatsworth, 1995, 1998). It is also stated that prosocial behavior predicts greater social competence from childhood into adulthood (Eisenberg et al., 1999). On the

other hand, factors that promote adaptive development in social competence domain seem to be more related to the quality of children's relationships with parents, teachers and peers (Masten & Coatsworth, 1998).

The second important criteria of competence related to the children's rule abiding versus rule breaking conduct (Masten et al., 1995). The behavioral conduct of children are evaluated by adults in their social context "with respect to rules and social norms of behavior including the rules parents have for the behavior, the expectations teachers have for conduct in the classroom and on the playground, and the laws of society governing conduct" (Masten & Croastworth, 1998, p. 211). Research indicated that there are three important adaptive systems in the development of behavioral conduct domain of competence, namely, parenting, self-regulation skills, and cognitive functioning (Masten & Croastworth, 1998).

One of the most prominent developmental outcome and criteria of competence through childhood and adolescence is academic achievement indicated by grades and test scores, years in school and school dropout (Masten & Coatsworth, 1998; Smokowski, Mann, Reynolds, & Fraser, 2004). Competence in the academic domain appears to be associated with more individual resources and social capital (Coleman, 1988). Specifically, demographic characteristics including low SES background, minority status, and living in a single parent home have been linked with low academic performance because of poor resources in the child's environment, low academic expectations, low cultural capital and racial discrimination (Cappella & Rhona, 2001).

Nevertheless, there are multiple domains of internal and external factors that demonstrated by researchers as protecting students from risk. Internal factors associated with academic competence include cognitive abilities such as IQ, achievement motivation, beliefs about one's academic abilities, and positive attitudes about school (Masten & Coatsworth, 1998). It was also stated that academic self-concept, internal locus of control orientation and future academic aspirations predict later academic performance (Cappella & Rhona, 2001). External

factors linked to academic competence include the experiences of students at the level of the family, peer group, and school environment. It is reported that academically competent children and adolescents at risk are more engaged in school than their less competent peers (Connell, Spencer, & Aber, 1994) and family, school and peer environment may operate to help children challenge the prediction of low academic performance (Cappela & Rhona, 2001).

On the other hand, academic competence has complex interrelations with social interaction of disadvantaged children with their environment. It was reported that high levels of informal social support were negatively associated with academic achievement of inner-city males at risk (Cauce, Felner, & Primavera, 1998).

In summary, as Luthar, Cicchetti, & Becker (2000) suggested, there is indeed a number of possible ways to define positive adaptation when studying resilience. Further, conceptual considerations should guide such decisions in relation to whether (1) several outcome domains are given priority over others, (2) multiple domains are combined or considered separately, and (3) criteria for resilience specify excellent versus adequate functioning.

1.3.3 Protective Factors

Resilience is not an inherent characteristic that superficially prevented the negative environment from influencing the child. The real causes of the child's success are the protective factors that involve attitudes and skills that permit the child to defy the effects of the environmental risk factors (Beauvais & Oetting 1999).

The term protective factor generally describes the circumstances that moderate or mediate the effects of risk or adversity and enhance good adaptation or competence (Masten, 1994). It is believed that "protective factors may buffer, interrupt, or even prevent risk" (Greene & Conrad, 1999, p.34) regardless of whether they are individual characteristics, environmental factors, or some interactions between the two (Masten, 1994). It appears to be the very reason that resilience research requires

the examination of the qualities of the individuals and their environments in order to explain the successful adaptation of some people much better than others in the context of risk (Masten & Reed, 2002).

Although resilient individuals studied were of various ages, from diverse situations and cultures, and experienced different adversities, most of the empirical and theoretical studies of resilience identified many overlapping internal and external protective factors associated with successful adaptation or competence under adverse circumstances have been well documented (Table 1.3) in the resilience literature. (Greene & Conrad, 2002; Kumpfer, 1999; Luthar, 1999; Mandleco & Peery, 2000; Masten & Reed, 2002; Vance, 2001).

To conclude, there appears a consensus in resilience research about the importance of investigating both internal and external protective factors that operate as the buffers against adversity. The following part discusses internal and external factors comprehensively.

1.3.3.1 Internal Protective Factors

Internal individual protective factors have been the subject of a variety of studies and major internal protective factors have been well documented in the resilience literature. Findings of the majority of the studies showed that resilient children generally have *higher intellectual and academic abilities* than the non-resilient ones (Kandel et al., 1988; Masten et al., 1988; Werner, 1982; White, Moffit, & Silva, 1989). As measured by IQ and other tests, *intelligence* is one of the most often studied protective factors in predicting resilience. In general, result of the studies demonstrated that high intelligence has a protective effect against high-risk (Kandel et al., 1988; Radke-Yarrow & Sherman, 1990; Werner & Smith, 1982) and it is often salient in distinguishing relatively resilient children and adolescents from the non-resilient ones (Fergusson & Lynskey, 1996; Masten et al., 1999; Masten, Morison, Pellegrini, & Tellegen, 1990; Werner & Smith, 1992).

In terms of underlying mechanisms, it is asserted that high intelligence operates as a protective factor, because intelligent children may develop more sophisticated problem-solving and coping skills, hence they may comparatively have more ability to evaluate the consequences of their preferences, to delay gratification, and to give more effective responses to stressful situations (Kirby & Fraser, 1997; Luthar, 1999). Moreover, intelligence may lead to repeated academic success, which in turn, leads to higher self-esteem and self-efficacy (Luthar, 1999; Rutter, 1985).

Research findings generally reported that resilient children and adolescents were more likely do better in school academically, scored higher on educational achievement and scholastic aptitude tests, and had high reading, verbal, and moral reasoning skills than did at high-risk peers who developed maladjusted behaviors (Cappella & Rhona, 2001; Mandleco & Perry, 2000; Masten et al., 1988).

Temperament is another internal protective factor that is related to resilience (Gordon & Song, 1994; Smith & Prior, 1995; Tschann et al., 1996). Temperament refers to "such attributes as activity level, feeding patterns, adaptability, intensity of reactions to stimuli, and reflectiveness in meeting new situations" (Kirby & Fraser, 1997, p.26). Infants who are viewed as more active, flexible, adaptable, affectionate, cuddly and good-natured are more apt to get positive responses from their caretakers (Green & Conrad, 2002; Werner & Smith, 1982) and this positive or "easy" temperament of an infant predisposes her/him to develop resilience in psychosocial outcomes in childhood and adolescence under multiple risk circumstances (Rutter, 1987; Smith & Prior, 1995; Werner & Smith, 1992; Wyman, Cowen, Work, & Parker, 1991). On the other hand, difficult temperament might increase to be targets of parental hostility, criticism, irritability (Rutter, 1990) and is more often associated with negative long-term outcomes (Werner & Smith, 1982); such as maltreatment (Farber & Egeland, 1987) and alcohol or other drug use in later life (Kumpfer, 1999).

Internal locus of control orientation is another individual capacity and a component of resilience. An internal locus of control orientation is a belief that events in one's life are largely shaped by one's own efforts and actions, rather than external forces such as luck or destiny. In other words, it is the belief that what happens to a person is under his or her control. Many researchers stated that resilient children and adolescents have greater internal locus of control orientation than do their nonresilient counterparts (Cowen et al., 1992; Grossman et al., 1992; Luthar, 1991; Luthar & Zigler, 1991; Magnus et al., 1999; Weist et al., 1995; Werner & Smith, 1992). For example, internal locus of control showed to positively predict academic achievement among middle and high school students (Connell, Spencer, & Aber, 1994; Stevenson, Chen, & Lee, 1993).

Self-esteem and self-efficacy have been cited as other psychological traits and protective factors central to the study of resilience (Masten, 1994; Masten et al., 1999; Moran & Eckenrode, 1992; Rak & Patterson, 1996; Taylor, 1994).

Self-efficacy is related to one's view of the self as effective or competent and achieving a greater capacity to take on life challenges and overcome stressors. Self-efficacy is conceptualized by Bandura (1977; 1982; 1989) as a process by which success in one developmental setting serves as a protective factor for children through the development of a self-perception about competence to perform specific behavioral tasks. Self-efficacy also enhances the children's motivation to deal with other developmental settings, personal events or future life challenges (Masten, 1994).

A similar concept, self esteem incorporates the elements of self-efficacy and defined as 'the feelings and thoughts that individuals have about their competence and worth, about their abilities to make a difference, to confront rather than retreat from challenges, to learn from both success and failure, and to treat themselves and others with respect" (Brooks, 1994, as cited in Kirby & Fraser, 2002, p.26). High levels of self-esteem are found to be related to an accurate appraisal of increased strengths and capabilities in resilient adolescents (Kumpfer, 1999). Research evidence also

suggested that resilient children who had high self-esteem, self-efficacy and self worth were more likely to show competence and positive outcomes than were the others (Cicchetti, Rogosch, Lynch, & Holt, 1993; Connell, Spencer, & Aber, 1994; Spencer et al., 1993; Werner & Smith, 1992).

Self-awareness and *self-understanding* are also the constructs that are closely related with self-esteem. Children who had high self-esteem were more likely aware of their own strengths and weaknesses, realized their capacities and makes causal relationships or linkages between experiences in the life and their inner feelings (Mandleco & Peery, 2000). Research also noted that people who demonstrated self-understanding were more resilient (Beardslee & Podorefsky, 1988; Beardslee, 1989).

Resilient children and adolescents are also found to have a sense of *autonomy*. (Anthony, 1987b; Gordon & Song, 1994). In other words, they have a clear sense of who they are and have superior ability to think or work independently (Benard, 1993). Moreover, resilient children have greater ability to exert some control over their environment (Martinek & Hellison, 1997). This means that resilient children have a clear *sense of purpose and future* in life. There are also similar related attributes that are stated within same category, including goal-directedness, achievement motivation, educational aspirations, hopefulness, belief in a bright future, persistence and a sense of coherence (Benard, 1991).

Problem-solving skill is another source of resilience. (Anthony, 1987b; Rutter & Quinton, 1994). This ability involves abstract, reflective and flexible thinking, and generating alternative solutions for cognitive and social problems (Benard, 1991). In the realm of internal individual protective factors, many researchers reported the protective influences of problem solving abilities among high-risk children and adolescents (Cowen, Work, & Wyman, 1997; Felsman & Vaillant, 1987; Luthar, 1991; Werner & Smith, 1982; 1992).

Other critical characteristics of resilient children and adolescents are a sense of *optimism and hope*. These characteristics are related to one's ability to set goals, persist, and believe that a bright future will come up (Martinek & Hellison, 1997). Resilient children and adolescents are found to be more hopeful about their abilities to generate good outcomes for themselves and others (Kumpfer, 1999). Moreover, they focus their energies only to the controllable ways of overcoming challenges and they maintain an optimistic view of their experiences even in the midst of adversity. In this sense, there is a straight contrast between hope and optimism, and Martin Seligman's (1975; 1990) work on the concept of learned helplessness which is found among high-risk individuals lacking control over social and academic outcomes (Kumpfer, 1999).

Social competence is another commonly identified attribute of resilient individuals. They have a number of positive social skills including responsiveness to others, flexibility and tolerance to individual differences, openness to change, emphatic understanding and caring, communication skills, and a sense of humor (Benard, 1991; Martinek & Hellison, 1997).

Resilient children are more active and responsive in their relationships with peers and others, and gain more positive attention from others (Rutter, 1990; Werner & Smith, 1982). In other words, they have a capacity for intimacy (Wolin & Wolin 1993). So, as the "street smarts" (Garmezy & Masten, 1986), they have a strong social support system for overcoming the adversity (Benard, 1991).

Moreover, resilient children and adolescents are identified as reasonably happy individuals (Kumpfer, 1999). They also did have a good sense of humor (Masten, 1986). In other words, they had the ability to laugh at themselves, others and adverse situations as well as had ability to find alternative ways of looking at circumstances and restore perspective (Masten, 1986) in order to reduce stress in their life. Wolin and Wolin (1993) also cited *humor* as one of the seven qualities, including insight, independence, relationships, initiative, creativity, and morality associated with resilience.

Resilient children are also found to be quite healthy and they have few childhood illness, a physical strength, and good sleeping and eating patterns (Kumpfer, 1999; Mandleco & Perry, 2000; Murphy, 1987). Moreover, it is reported that good physical health during infancy and childhood is related to resilience in later life (Werner & Smith, 1982; 1992).

Finally, as a genetic individual factor, gender seems to be related with resilience and it is believed that *being female* was related to the increased resiliency in at-risk children (Kumpfer, 1999). On the other hand, males appeared more vulnerable to a range of risk factors than girls (Luthar, 1999) including parental psychopathology (Shaw et al., 1994; Wall & Holden, 1994), and poverty (Bolger, Patterson, Thompson, & Kupersmidt, 1995). Moreover, males react behaviorally in more negative ways than girls to familial disruption and community influences and they are at greater risk for externalizing behavior problems (Bolger, Patterson, Thompson, & Kupersmidt, 1995; Dodge, Petit, Bates, 1994; DuBois, Felner, Meares, & Krier, 1994) and poorer academic outcomes (Eckenrode, Rowe, Laird & Brathwaite, 1995; Luthar, 1995; Ripple & Luthar, 2000).

However, the effect of gender seems to vary according to the one's age. For example, elementary school boys seemed to be more affected than girls by economic hardship (Bolger, Patterson, Thompson, & Kupersmidt, 1995), but among older youths, females seemed to be more affected than did their male counterparts (Juarez et al., 1997, as cited in Luthar, 1999). In addition, it was stated that regardless of gender, younger children were more vulnerable than older youth to all risk factors in many respects (Luthar, 1999).

1.3.3.2 External Protective Factors

Along with the internal personality factors, researchers have found an array of family and community factors that contribute to a buffering effect on children adjustment under threatening life circumstances.

There is a broad consensus that a close bond or positive relationship with at least one parent or a family member seems to be a good predictor of children's adjustment and related to better outcomes among at-risk children (Anthony & Cohler, 1987; Buchanan, 2000; Grossman et al., 1992; Masten & Coatsworth, 1998; Rutter, 1990; Werner & Smith, 1982; 1992; Wyman, Cowen, Work, & Parker, 1991; Wyman et al., 1999). Supportive relationships with parents also have a protective effect for the challenges of adolescent development (Luthar, 1999). For example, warm and supportive parenting can substantially diminish the risk related to poverty (Smith & Prior, 1995).

In addition, an organized, structured home environment is also critical in facilitating competence among high-risk children (Pianta, Egeland, & Sroufe, 1990). There is strong evidence that quality parenting, the maintenance of structure, rules and expectations in the household with high monitoring of children, reduce the likelihood of maladaptive behaviors and increase success at school among at-risk children and youths (Baldwin, Baldwin, & Cole; 1990; Grossman et al., 1992; Masten et al., 1999; McLoyd, 1990; Peng, 1994; Werner & Smith, 1992). Similarly, Chao (2000) stated that the children of Asian and Asian-American parents are successful in school because their parents place a high value on education, have higher educational aspirations, and are more involved in their children's schooling than other ethnic groups.

According to Garmezy (1983; 1985, as cited in Carson et al., 1992) factors that contribute to resilience in children include a warm, close, healthy parent-child relationship and supportive family environment. Similarly, Benard (1991) described the protective factors within the family as caring and support, high but realistic expectations, and encouragement of children participation in the family.

It is also demonstrated that parents of resilient children and adolescents in dangerous neighborhoods use authoritative parenting behaviors (rather than democratic parenting) with higher levels parental control, monitoring and supervision (Baldwin, Baldwin & Cole, 1990; Gribble et al., 1993; Taylor, 1994). Firm parental monitoring

can be violent for youths living in middle or upper-class settings; however it is generally beneficial for teens living in dangerous neighborhoods to protect their well-being (Buckner, Mezzacappa, & Beardslee, 2003).

Moreover, there are factors in the community that contribute to resilience. The presence of a caring, supportive adult outside of the home, as representing the social support, has also been consistently reported as a protective factor for children and adolescents across variety of high-risk conditions (Brooks, 1994; Grizenko & Pawliuk, 1994; Rutter, 1987; Werner & Smith, 1982; 1992). These supportive adults outside the home may offer friendship, assistance and emotional support to the high-risk children, and help them to view the future as better than the present (Mandleco & Perry, 2000).

Many researchers (Beardslee & Podorefsky, 1988; Benard, 1991; Bolig & Weddle, 1988; Gordon & Song, 1994; Taylor, 1994; Werner & Smith, 1982; 1992) stated that resilient children often had a number of mentors outside the family throughout their development and these role models served as potential buffers for resilient children. These included teachers, counselors, coaches, ministers, youth leaders, clergy and good neighbours or adult family friends. Similarly, Garmezy (1983; 1985, as cited in Carson et al., 1992) give emphasis on extra-familial influences such as peers, teachers, and other adult role models, as well as other community support systems.

Bernard (1991) also described protective factors within the school and community as being similar to those within the family: caring and support, high expectations, and opportunities for youth's participation and involvement.

Peer acceptance and support as well as adult support has an important contribution to resilience (Cauce, 1986; Werner & Smith, 1992) and resilient children have one or more close friends and confidants among their peers (McWhirter et al., 1998). In other words, resilient youth are able to make and keep friends, look to them emotional support when needed and keep (childhood) friends into adulthood (Lewis, 2000; Werner & Smith, 2001).

On the other hand, some studies have reported rather complex associations between peer relations, and children's behavioral competence (Luthar, 1999). Among children and adolescents who live in inner-city communities, some behaviors such as antisocial behaviors (Dubow, Edwards, & Ippolito, 1997) and substance use (Wills, Vaccaro, & Mcnamara, 1992) appear to be acceptable and can be linked with relatively high prestige, and high peer support.

Community resources such as good schools (Masten, 1994; Gordon & Song, 1994), religious organizations (Gordon & Song, 1994; Werner & Smith, 1992), intervention programs that offer support services (Luthar & Zigler, 1991) are also important in terms of promoting positive outcomes for disadvantaged children and adolescents.

Studies have revealed that positive school experiences (academic or nonacademic-including sports, drama, arts and crafts) may serve protective functions (Rutter, 1990; Luthar & Zigler, 1991; Luthar, 1999) and resilient children who do have positive experiences in school have greater advantage over their more affluent peers (Felner et al., 1995; Posner & Vandell, 1994; Rutter, 1990; Werner & Smith, 1992). Because schools, as potentially powerful protective environments, provide many opportunities for children and adolescents in order to promote academic, personal, and social competencies which are highly correlated with resilience (Doll & Lyon, 1998; Powers, 2002; Wang, Haertel, & Walberg, 1994).

Finally, the scope of the opportunities available in the community is important (Mandleco & Perry, 2000). Health-care organizations, child-care services, job training opportunities, religious institutions, and recreational facilities are vital for resilient children from a variety of ages and risk situations (Wang, Haertel, & Walberg, 1994).

It is also important to discuss that an interactional and transactional relationship exists not only within the internal and external factors but also between them (Mandleco & Perry, 2000). In other words, resilience as a process takes place in the context of complex person-environment interaction. The circumstances that

influence resilience are fixed in family, school, neighborhood, and the larger community, so that resilience can be understood from an ecological perspective (Greene, 2002). Because of focusing both on the individual and the context, ecological theory is fully compatible with the risk and resilience perspective (Fraser, 1997). Within this perspective, it is not assumed that all protective factors (or risk factors) operate as direct causes of child behavior or health (Fraser, 1997).

Table 1.3 Protective Factors in Resilience Research

Individual protective factors • Higher level of intelligence • Academic achievement • Positive or easy temperament • Internal locus of control • Self esteem, self efficacy, and self worth • Self acceptance, self understanding • Autonomy • Sense of purpose in life and positive expectations for the future • Good problem solving skills • Optimism and hopefulness • Social competence • A good sense of humor • Good health • Gender • Age
Familial protective factors • Positive relationship with a caring, supportive parent or family member • Effective parenting / household structure and rules • High but realistic expectations from the child
Environmental protective factors • Positive relationship with a caring, supportive adult (adult mentor outside of the home) • Peer support • Community resources (good schools, youth organizations, etc.)

1.4 Basic Approaches in Resilience Research

There are two major research strategies in resilience research that aims at explaining the nature of the associations between risk status and adaptive outcome (Luthar & Cushing, 1999; Masten, 2001; Masten & Reed, 2002).

Variable based approach involves multivariate statistics to examine the statistical associations (links) through measures of risk, good adaptation or competence, and individual, familial or environmental protective factors (Masten & Reed, 2002).

Person based approach, on the other hand, involves the discrimination and comparison of two groups (resilient and vulnerable) who demonstrate adaptive and maladaptive outcomes within the same high-risk circumstances (Masten & Reed, 2002).

In resilience studies, some of the researchers have used variable based approaches (Garmezy, Masten, & Tellegen, 1984; Grossman et al., 1992; Luthar, 1991; Osborn, 1990), while; the other investigators have used individual based approaches (Werner & Smith, 1992). Yet, some of them have included both approaches in their studies (Buckner, Mezzacappa, & Beardslee, 2003; Masten et al., 1999).

1.4.1 Variable Based Approaches

Masten and Reed (2002), identified three broad models within the variable based approaches of resilience that are; additive models, interactive models, and indirect models.

1.4.1.1 Additive Models

Additive models, in which factors may exhibit main effects, direct effects, or compensatory effects, 'theoretically ref lect the independent contribution of risks or assets or bipolar attributes to the course of the outcome criterion variable, although

causality cannot be determined in these kind of correlational analyses" (Masten, 2001, p.229). In other words, this model stated that pure risk factors (e.g. a car accident) directly increase the likelihood of a negative outcome when they exist and pure protective factors or assets (e.g. having a talent) directly increase the likelihood of a positive outcome when they are present (Fraser, 1997; Masten, 1999; Pellegrini, 1990). Moreover, risks and assets are usually seen as polar opposites and "many attributes operate along a continuum of risk-asset where more is good and, less is bad for the outcome of interest" (Masten & Reed, 2002, p.78). For example; the way the intellectual skills, the quality of parenting, and high social support may work together for academic achievement of children from impoverished neighborhoods. Thus, intervention strategies based on additive models could focus on adding more assets and protective factors to an individual's life in order to counterbalance the negative effects of high risk and maintain the outcome variable of interest at normative levels (Masten, 2001). Additive models are more common in resilience research (Smokowski, Mann, Reynolds, & Fraser, 2004). This model best fits the design of the present study.

1.4.1.2 Interactive Models

Interactive models involve interactions between risk/adversity and particular protective factors in relation to a good outcome (Luthar & Cushing, 1999). Masten and Reed (2002) stated that the moderating effects of one factor change the impact of the risk factor. They mentioned two kinds of moderating effects:

In the first one, named *simple moderator*, the quality of individual or environment increases or decreases the susceptibility of the individual to the risk situation. Another type of moderator is the *risk-activated* one that is triggered by the emergence of the threatening circumstances. In this interaction, the moderating effects of protective factors are considered only in combination with risk factors (Kirby & Fraser, 1997). This means that, protective factors have little effect when risk is low, but their effect increases when risk is high. Immunization is a good

example of this process. Although immunization does not directly have an impact on positive physical health of the individual, it begins to protect the individual from disease after exposure to a pathogen (Kirby & Fraser, 1997).

1.4.1.3 Indirect Models

In this model, "a powerful influence itself is affected by risk and resources" (Masten & Reed, 2002, p.79). The effect of poverty (McLoyd, 1998) seems to fit this model, in which effects of economic disadvantage on children appear to be at least partially mediated through parenting. Conger and colleagues (Conger, Conger, & Elder, 1997; Conger et al., 1992) tested this model. The results of their study demonstrated that the effects of the economic hardship on adolescents were mediated by effects of the mood and interaction of parents that undermined the effectiveness of parenting behavior.

Another mediating indirect model is the invisible effect of the total prevention. In this model, the protective factor prevents the risk condition before occurring at all (Masten & Reed, 2002). For example, premature birth can be prevented by sensitive prenatal care so that the risk associated with premature birth may be totally removed.

Similarly, Kirby & Fraser (1997) conceptualized protective factors in three ways within interactive and indirect models. He asserted that first, protective factors might buffer the negative effects of risk or adversity by serving like a cushion. For example, social support may buffer the negative impact of parental divorce on children. Second, a protective factor may interrupt the risk chain through which risk factors operate. For instance, interventions having the purpose of reducing the family conflict may prevent early experimentation with drugs. Third, protective factors may operate to prevent the initial occurrence of a risk factor. Easy temperament, for example, may elicit positive responses to children from their parents and this process may protect them from abuse or neglect.

1.4.2 Individual Based Approaches

Masten and Reed (2002) also specified three broad types of individual based models, which have an important key role in empirical literature of resilience.
The first model is related to the single case study of individuals. The focus of this type of models is the individual. The model tries to demonstrate natural phenomena for heuristic purposes. Although case studies have numerous shortcomings and they may not be true conceptual models in resilience research (Masten, 2001; Masten & Reed, 2002), there are some case study reports (Helen, Fonagy, Ferguson, & Molly, 2000; McGinty, 1999) throughout the resilience literature.

The second model is one of the classic approaches utilized in the resilience studies (Cappella & Rhona, 2001; Cowen et al., 1997; Cowen, Lotyczewski, & Weissberg, 1984; Fin & Rock, 1997; Werner & Smith, 1982; 1992). This model is basically related to the identification of a subset of individuals based on high-risk and high competence status, in other words, a resilient subgroup. Then, the attributes of this resilient subgroup and their lives have been compared with peers in the high-risk subgroup who develop significant negative outcomes of interest. The results of this model have proven a lot of evidence of significant differences in the protective factors, human and social capital, characterizing the lives of resilient versus maladaptive individual from adverse circumstances (Masten & Reed, 2002).

Moreover, full classification models, which involve not only high-risk but also low-risk groups, also exist in the empirical literature of resilience. This model, contrary to the classic model, also addresses the question of whether resilient individuals differ from individuals who are doing equally well but are not from risky backgrounds. Investigators using this model (Luthar, 1991; Masten et al., 1999) have defined four groups for analysis, reflecting cut-off criteria for high versus low competence as well as high versus low risk, namely; resilient group (high risk, high competence), competent group (low risk, high competence), maladaptive group (high risk, low competence), and vulnerable group (low risk, low competence) who

are so few in number and mostly an empty-cell represents them for analysis (Masten, 2001). Discriminant function analysis and cluster analysis have also been used as statistical techniques in these full diagnostic models (Masten et al., 1999).

The third one, called the pathway model, is the most complex individual based approaches of resilience research. These models have been used to identify the major patterns of behavior over time in more systematic and explicit ways within longitudinal studies of resilience (Masten 2001; Masten & Reed, 2002).

1.5 Major Research Studies on Resilience

Understanding the definitions and terms related to the construct of resilience and research necessitates the summarization of the historical developments in the field of risk and resilience.

According to Doll and Lyon (1998), two generations of risk and resilience studies went through during the past several decades, and each generation has developed its own approach. The first generation focused on the systematic study of risk factors and their associations with all types of maladjustment among disadvantaged children. The study of risk has proceeded through three iterations (Rutter, 1985):

The earliest studies have concerned with the implication of the negative life experiences on the development of mental health problems. The results of this studies demonstrated that family experiences and parent-child interactions empirically related to the psychological development of children (Bowlby, 1973), and environmental deprivation has not only had a negative impact on the development of infants' sense of well-being but also has included severe risk for developing various cognitive, social and emotional problems (Spitz, 1946, as cited in Doll & Lyon, 1998).

The second iteration of risk studies generally expanded the conceptualizations of risk and explored how different types of single risk factors contributed to the various

types of outcomes. Individual case studies, longitudinal and epidemiological studies were mostly used in this phase. The results of the studies yielded a common understanding and acceptance that life experiences varied considerably in their risk potential (Rutter, 1985). There has also been an extensive list of biological, behavioral, and environmental risk factors having measurable impact on poor developmental outcomes (Gordon & Song, 1994). This type of risk studies have also been conducted today using sophisticated statistical methods.

The third iteration of risk studies developed a different perspective on the problems of risk and, examined the multiple influences and interactions of risk and protective factors on the adjustment of children and adults. In this stage, pioneering investigators of the study of risk realized that there were a substantial number of children flourishing successfully in the face of severe risk or adversity (Werner & Smith, 1982; Rutter, 1985). Then, the theoretical underpinnings of what constitutes resilience begin to emerge with the main research question of why do some individuals persevere with few harmful effects and developed well in the context of risk or adversity, whereas others in similar circumstances experience serious cognitive, social and emotional problems (Doll & Lyon, 1988)? Researchers concluded that *some children can teach us better ways to reduce risk, promote competence, and shift the course of development in more positive directions* (Masten, 1994). Therefore, the second generation of studies as related to the construct of resilience arose from the third iteration of risk studies.

Further, the second generation of studies is a shift from risk to resilience and has continued to emphasize the successful coping and adaptation despite challenges, development of competence under severe stress or the ability to overcome risk and adversity (Garmezy, Masten, & Tellegen, 1984; Wolin & Wolin, 1993).

The major concern of second generation resilience research has been how children maintain healthy functioning in the face of adverse circumstances and become competent and productive adults. In order to understand the mechanisms and processes underlying the construct of resilience, several studies have been conducted

with diverse populations that relate to multiple outcomes and the findings are well summarized with recent reviews (Luthar, 1999; Luthar & Zigler, 1991; Masten, 1994; Rutter, 1990). It is concluded that within an ecological context resilient people may face a constellation of risk and may have many individual, familial, and environmental protective factors.

Several important longitudinal studies were carried out with diverse samples that were important to understand the shift from risk research into the examination of resilience. For instance, Werner and Smith (1982, 1992, and 2001) conducted one of the most comprehensive studies in the field. Initiated in 1955, this study was with 698 infants on the Hawaiian Island of Kauai and has continued for approximately 50 years. The researchers reached to a wealth of file data on participating children's development and well being, with the cooperation of the health, education, social services and juvenile justice divisions of the Hawaiian government. A research team composed of pediatricians, public health nurses, public social workers, and psychologists collected the data. The sample of the study was predominantly non-white (Pacific Island and Asian) and was from middle to lower socio-economic status. Researchers used a multifaceted assessment procedure to determine how well participants adjusted to different aspects of their living. Based on risk factors evident in the first 2 years of life that predicted adolescent (at 10 and 18 years of age) and, then adult (at 32 years of age) maladjustment, more than one third of this cohort found to experience multiple risks and were considered at high risk for low educational achievement, future school dropout, and alcohol abuse. Risk factors that were targeted by the study included chronic poverty, perinatal stress, low parental education, parental psychopathology, family instability, and parental alcoholism. The researchers realized that about one third of this high-risk group (10% of the cohort) grew into competent young adults who loved well, worked well, and played well and was identified as resilient. The researchers also examined individual characteristics, family structures, and the external environment to identify factors that may have helped these children flourish. Result indicated that as adolescents, these resilient youth had higher levels of autonomy, independence, empathy, task orientation, and curiosity than did their less resilient peers. They had also exhibited

better problem solving skills and better peer relationships than did their less competent high-risk contemporaries. The result of the study concluded that these resilient youth had some advantages, including warm, consistent relationships with their families, exposure to fewer life stressors and better physical health.

Another important study is the Rochester Longitudinal Study (Sameroff & Seifer, 1990; Sameroff, Seifer, Baldwin, & Baldwin, 1993), which was originally designed to compare the social-emotional functioning of children whose mothers had significant psychopathology with those whose mothers had no social-emotional problems. The two samples were matched on a number of demographic variables including socio-economic status, family size, race, age and educational level of mothers. By age 4, an evaluation was made of environmental risk factors including maternal mental illness, stressful life events, poor parenting, low parent education, unemployment, and ethnic disadvantage. By age 13, resilient group were compared with the non-resilient group. The results revealed that resilient adolescents had higher levels of self-esteem, greater internal locus of control orientation, effective parental teaching, lower levels of parental criticism, and low rates of maternal depression than did their non-resilient peers.

In a parallel fashion, competence among 7- and 10-year-old children who were at risk, due to maternal psychopathology, was rated by their parents, teachers and peers in The University of Rochester Child and Family Study (Fisher et al., 1987). The results demonstrated that higher competence was related with less chronic parental illness and more positive family relationships.

A seminal study that has made a unique contribution to the empirical study of resilience was conducted by Elder and his colleagues on the effects of economic hardship on families and the development of their children during the Great Depression (Elder, van Nguyen, & Caspi, 1985). Using a cohort from the Oakland Growth Study, which included adolescents during the Depression, the researchers examined the long-term effects of economic hardship on resilience. The findings of the study demonstrated that fathers and mothers had important and different roles in

buffering the effects of economic hardship on adolescents. Vulnerable fathers, who seemed to be more adversely affected by economic deprivation, often exhibited harsh parenting behavior, and the adolescents who showed signs of behavioral problems before the Depression appeared to be most negatively affected by this parenting style. However, affectionate and caring mothers in these families seemed to play a protective role against the social-emotional problems of their children and regulate the effects of fathers' harsh parenting on adolescents.

Baldwin, Baldwin, and Cole (1990) were interested in some high-risk children who developed higher cognitive competence than would be expected, considering their familial backgrounds. The sample of the study was based on a longitudinal sample of families originally studied in Rochester Longitudinal Study (Sameroff & Seifer, 1990) from 1971 to 1974. The sample was composed of 152 families and their children who were at age 12 to 14. Families were identified on the basis of the positive cognitive outcomes of their children including; IQ, achievement test scores, and academic achievement in school. Then, the sample was divided into two groups according to family occupation level, family education level, minority status and absence of the father. The first group composed of white and living in a middle-class neighborhoods; the second group consisted of African-American or Hispanic families living in lower-class, high-risk urban neighborhoods. The results indicated that two groups of families had common parental qualities including, warmth and high expectations for achievement as well as responsible behavior for their children. On the other hand, these two groups differed related to their parenting practices. Effective parents from high-risk neighborhoods were more restrictive and less democratic, monitored their children more firmly, and placed a higher value on self-control than did the parents in middle-class neighborhoods.

Long and Vaillant (1984) studied a cohort of boys who were the major control group of Glueck & Glueck's (1950) ori ginal study on delinquent and non-delinquent junior high school students from a highly impoverished, inner-city neighborhood. The researchers examined the factors that revealed good outcomes in adulthood. A sample consisted of 399 at-risk boys was selected on the basis of economic

dependence, housing, employment status and average IQs with no delinquency. Four subgroups were composed according to their initial psychosocial risk and were compared at age 47. The results of the study revealed that better intellectual functioning and competence predicted better outcomes. Moreover, it was noted that resilient subgroup (75 high-risk men) were more likely engaged in school, community, and athletic activities and they were more likely to achieve success.

The Project Competence was another instrumental project on risk, competence and resilience. The Project Competence studies of children were a natural expansion of Garmezy's earlier studies of adaptive and maladaptive performance of schizophrenic adults. By the early 1970s, he and his students directed their research efforts to search children vulnerable to adversity and finally to attempt to uncover the sources of resilience in children (Garmezy, 1987). Three cohorts of children are included in the project at first (Garmezy, Masten & Tellegen, 1984; Masten & Powell, 2003): the cohort 1 study, which was also the core longitudinal study, was focused on competence among elementary school children who had experienced many kinds and levels of adversity. Cohort 2 was a small group of 32 children born with congenital heart defects. Cohort 3 consisted of 29 children with physical handicaps. More recent studies in project competence have also concentrated on high-risk samples of children living in homeless shelters (Masten et al., 1993) and young war refugees (Hubbard, Realmuto, Northwood, & Masten, 1995). Although diverse in many ways, all of these studies focused on risk, competence, and resilience (Masten & Powell, 2003).

The longitudinal study of the cohort 1 (the core study) began with 205 children (91 boys, 114 girls, ages, 8-12, 27% minority) of 3rd to 6th graders and their families from a normative school population in two urban elementary schools. Data were collected in two schools between 1977 and 1979 in the same sequence. The follow up assessments were done 7, 10, and 20 years after the first assessment. Cumulative risk and adversity has been examined by using a series of life events questionnaires (Masten, Neemann, & Andenas, 1994) and life charts and rating scales (Gest, Reed, & Masten, 1999) for children, adolescents and young adults. Competence

assessments involved academic competence, social competence, and behavioral conduct during the elementary school years. In adolescence and adulthood, romantic and work competences were also included. Data were also collected on internal adaptation, including well-being and symptoms of distress (Masten & Powell, 2003; Masten et al., 1999). In data gathering, informants included parents, child, teachers, peers, and multiple test administrators, and methods included interviews, questionnaires, peer nominations, grades and test scores from records, and different standardized tests (Garmezy, Masten, & Tellegen, 1984; Masten et al., 1988; 1990; 1995; 1999). Both the variable-focused approach and the person-focused approach were used to understand resilience from multiple perspectives.

The results of the core longitudinal study revealed that more psychosocial resources, such as good parenting, intellectual skills, and high social support might decrease the negative effects of risks or adversity so that children have better outcomes (Masten & Powell, 2003). For example, intellectual skills are better predictors of academic achievement (Masten et al., 1990; 1999). Parenting quality also had unique significance for behavioral conduct in childhood and adolescence, and if adversity was high and parenting quality was low, the risk for antisocial behavior was greater (Masten et al., 1999). It was also stated that negative life events were more common in the families of less effective parents (Gest, Neeman, Hubbard, Masten, & Tellegen, 1993). Finally, it was reported that, in terms of both the tasks of adult life and happiness, competent and resilient youth continued to do well in their early adult years (Masten & Powell, 2003).

All of the longitudinal studies of resilience mentioned above reflect the large transformation that occurred in the last quarter of the twentieth century in the ways that child and adolescent problems were conceptualized. Moreover, this generation of research on resilience construct has provided new concepts, models, measures and findings that will give new ways for the future resilience research (Masten & Powell, 2003).

1.6 Poverty and Its Consequences for Children

The social and economic environment in which children developed appears to be the most important predictor of their overall well-being. A vast amount of research evidence demonstrated that children's education, later employment, future earnings, social relations and health greatly depend on the socio-economic status (SES) of their families (McWhirter et al., 1998). Seccombe (2000) also stated that one's total existence can be affected negatively by poverty and it can obstruct one's social, emotional, biological and cognitive growth and development.

Poverty often reduces opportunities for some children and youths and causes an impoverished environment (Dunst, 1995, as cited in Kumpfer, 1999). For the reason that, poor families are much more likely to live in neighborhoods with other low-income families, their children are much more likely to attend schools delivering less educational resources and having more low-income classmates than more high-income families are (Brooks-Gunn, Duncan, & Maritato, 1997).

There is also an array of potentially harmful experiences and conditions related to poverty that poor children and youths more frequently witness or exposure to such risks as high rates of joblessness, general social isolation from mainstream society, violence, maltreatment, vandalism, drug addiction, medical illness, family stress, inadequate social support, teenage pregnancy, and other forms of crime in their disorganized and impoverished neighborhoods than those in upper class settings and to have inadequate public resources such as parks and youth activities. (Buckner, Mezzacappa, & Beardslee, 2003; Parker, Greer, & Zuckerman, 1988; Wilson, 1987, as cited in Taylor, 1994).

Moreover, research on the effects of neighborhoods on child and adolescent development demonstrated that neighborhood characteristics and conditions significantly influence the well-being of children and adolescents living in poverty (Bowen & Chapmen, 1996; Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; South & Crowder, 1999; Vartanian, 1999).

In their family environments, impoverished children are most likely to be exposed to the risk of domestic violence, parental substance abuse, mental health problems, and other stressors that stem from economic hardship (Buckner, Mezzacappa, & Beardslee, 2003). Several researchers reported that poverty could have a negative impact on parents' behavior and childrearing practices. It is reported that parents become less nurturing, more authoritarian, and use more inconsistent, power-assertive and punitive (harsh) physical discipline toward their children as the family's economic situations worsens (Conger et al., 1984; Dodge, Pettit, & Bates, 1994; Hashima & Amato, 1994; Lempers, Clark-Lempers, & Simons, 1989; McLeod & Shanan, 1993; McLoyd, 1990).

Additionally, it is noted that economic hardship has a significant negative effect on the quality of the home environment, which is substantially lower for poor children than for more affluent children (Garrett, Ng'andu, & Ferron, 1994; Miller & Davis, 1997). Poverty also circumscribes a family's resources and increases the likelihood that poor children will lack adequate food, clothing, shelter, and other basic necessities, as well as they less likely to access to adequate health services (Bradley, et al., 1994). Poor families also experience more threatening and uncontrollable negative life events and research evidence concluded that poverty is associated with less optimal outcomes in every area of functioning (Bradley & Whiteside-Mansell, 1997). Hence, Taylor (1994) concluded that poverty, as it influences family functioning and the nature of families' living conditions, might also be an effect on the capacity of children and adolescents to master age specific developmental tasks.

The study of poor children and families became a burgeoning area of research during the past three decades and the negative effects of poverty on physical health, mental health and academic achievement of children have been well documented in the literature, (Duncan, Brooks-Gunn, & Klebanow 1994; Duncan & Brooks-Gunn, 1997; Felner et al., 1995; Lichter, 1997; Seccombe, 2000; White & Rogers, 2000).

The review of the literature demonstrated that children and adolescents from impoverished families have an increased risk of health problems, such as neonatal

damage, low birth weight, malnutrition, anemia, poor vision, and severe, acute and untreated childhood illness (Bradley et al., 1994; Halfon, & Newacheck, 1993; Jackson, 1993; Starfield, 1982; McWhirter et al., 1998). Moreover, these impoverished children and adolescents are more apt to suffer from nearly all diseases and have higher rates of injury and mortality than more affluent children and adolescents (Durkin et al., 1994; Rosenbaum, 1992; Santer & Stocking, 1991).

The children of poverty are also at higher risk for a host of behavioral and socio-emotional problems because of facing an array of adverse experiences (Belle, 1990; Conger, Conger, & Elder, 1997; Brooks-Gunn, & Klebanow, 1994; Huston, McLoyd, and Garcia Coll, 1994; Luthar, 1999; McLoyd, 1998; Seccombe, 2000). Research showed substantial evidence that poor children more often display symptoms of psychiatric disturbance and maladaptive social functioning (Baldwin, Baldwin, & Cole, 1990; Bolger, Patterson, Thompson, & Kupersmidt, 1995; McLeod & Shanahan, 1993; Patterson, Debatyshe, & Ramsey, 1989; Takeuchi, Williams, & Adair, 1991). Poor children grow up in environments characterized by high degrees of continuous stress and experience a wide variety of internalizing and externalizing problems including depression, social withdrawal, loneliness, low self esteem, peer relationship difficulties, impulsive behavior, anti-social behavior, conduct problems, and teenage pregnancy (Conger et al., 1994; Dumka, Roosa, & Jackson, 1997; Gerard & Buehler, 1999; Leadbeater & Bishop, 1994; Lempers, Clark-Lempers, & Simons, 1989; McLeod & Shanahan, 1993; McLoyd, 1990; Takeuchi, Williams, & Adair, 1991; Patterson, Debaryshe, & Ramsey, 1989; Patterson, Kupersmidt, & Vaden, 1990; Whitbeck et al., 1991).

In addition, studies demonstrated that there are strong and consistent links between poverty and children's poor academic competence. Overall, impoverished children are more likely to have difficulty in school, low academic performance, school dropout, low scores on standardized tests, low levels of intelligence test scores, and are less likely to attend or graduate from high school or university than are more affluent counterparts (Dubow & Ippolito, 1994; Duncan et al., 1998; Entwisle & Alexander, 1995; Escalona, 1982; McLoyd, 1998; Pianta, Egeland, & Sroufe, 1990;

Pong, 1997; Smith, Brooks-Gunn, & Klebanow, 1997; Teachman, Paasch, Day, & Carver, 1997; Walberg, & Marjoribanks, 1976). It is also stated that children in poverty have been disproportionately placed at high risk for academic problems (Ripple & Luthar, 2000).

To conclude, the significance of poverty as a risk factor is related to the presence of multiple stressors associated with inadequate resources (Bradley et al., 1994; McLoyd, 1990). Most high-risk children and youths are classified in the study of resilience on the basis of a high-risk environment, like poverty (Kumpfer, 1999) and the conditions associated with poverty and economic disadvantage are the environmental factors most challenging to the adaptation of children and adolescents (Taylor, 1994). In addition, poverty is a condition that does not change quickly; and the accumulation of stressors over time may magnify the risk (Garmezy, 1993). In short it means that being poor is mostly being at risk.

1.7 Poverty and Resilience

Although poverty works through several mechanisms to impede development and the psychosocial adjustment of poor children and adolescents, a sizable percentage of economically disadvantage children and adolescents overcome this adversity, exhibit competence in the face of economic hardship in their lives and go on to lead highly successful, well-adjusted and productive lives (Garmezy, 1991; Werner & Smith, 1982; 1992; 2001). Specifically, these resilient children and adolescents display behaviors relevant to mastery of developmental tasks, such as performing adequately in school, perceiving themselves as self-reliant, avoiding problem or delinquent behavior, and adequately managing their relations with peers and community, despite living in poor households (Taylor, 1994). Although there is only a few resilience research specifically on children and adolescents growing up poor, a multitude of internal and external protective factors that play a significant role in the resilience of these poor children are well summarized by Luthar (1999).

Corresponding with the recent increases in child poverty, most researchers prefer to focus on the possible effects of poverty on cognitive development and socio-emotional functioning of poor children and adolescents since 1980s (Huston, McLoyd, & Garcia-Coll, 1994). On the other hand, research on resilience that have involved children from economically disadvantaged circumstances is limited (Buckner, Mezzacappa, & Beardslee, 2003).

1.8 Research on Poverty and Resilience in Turkey

In Turkey wide and persistent inequalities are consistently observed across regions, provinces and social groups. Kıvılcım (2003) reported that the distribution of income inequality between 1987 and 1994 remained the same according to Household Income and Consumption Expenditure Survey (HICES). Specifically, following the November 2000 and February 2001 crises poverty in Turkey has become acute (Erman, 2003). Dansuk (1997) also showed that poverty was a more severe problem among uneducated and low educated people, women, people living in rural areas, people out of a social security system and people who work in informal sectors.

Despite some other studies were also carried out regarding poverty (Ardıç, 2002; Erman, 2003; İlik, 1992; Şen, 2000) and socio-economic status, for example, the effects of *socio-economic status* on physical fitness performance of junior high school students (Özdemir, 1993); on Turkish language education levels (Güleç, 2000) on children's creativity (Akdoğan, 1992) or differences in parenting practices (Pehlivanoğlu, 1998), school preparedness (Çataloluk, 1994), way of perception of occupations (İsmailoğlu, 1991); anxiety domains and levels of children and adolescents due to socio-economic status (Girgin, 1990), there exists no research considering the poverty or low SES from a risk and resilience perspective in the Turkish literature.

Likewise, although there is numerous research dealing with some components of social and academic resilience no research has been carried out addressing uniquely to the resilience construct in Turkey. Indeed, several researchers conducted studies

concerning the *academic achievement* of Turkish elementary and high school students (Baştürk, 2002; Berber, 1990; Güroğlu, 2002; İlden, 1999; Kenç & Oktay, 2002; Köse, 2003; Micazkadıoğlu, 2000; Taşdelen, 1995; Topuz, 1995; Ulular, 1997); their *locus of control orientations* (Argun, 1995; Aydın, 1993; Başal, 1983, 1997; Buluş, 1996; Dağ, 1990; Dönmez, 1985, 1987; Gündüz, 1986; Korkut, 1986, 1991; Ören, 1991; Tapçan, 2002; Uz & Eryılmaz, 1999); their *emotional and behavioral problems* (Taşdelen 1995); the effects of *parental attitudes* on their academic achievement (Aslan-Akan, 1994; Beler, 1993; Berber, 1990; Güroğlu, 2002; Hakan, 2001; Yılmaz, 2000) or on their locus of control orientations (Argun, 1995; Tapçan, 2002); Turkish mothers (Veziroğlu, 1998) and fathers (Moreno, 1998) perceptions of child competence; their *social competence* (Micazkadıoğlu, 2000); and social support (Baştürk, 2002). In addition, there is no resilience research for any specific risk groups or populations in Turkey.

1.9 Purpose of the Study

This preliminary study collectively suggests the value of identifying sources of resilience among those adolescents who were living in the low SES families in Turkey. Processes and characteristics that mitigate the negative impact of poverty have remained largely unexplored, especially in Turkey. The researcher followed the suggestions of the pioneers in resilience research (Luthar, Cichetti, & Becker, 2000) and specified the particular spheres to which the data apply and exclusively clarified the domain of the competence criteria. For this reason, the researcher is inclined to assume the circumscribed term "academic resilience" (Alva, 1991) in order to bring greater precision to terminology commonly used in the literature as suggested.

Since *academic resilience* is defined as the high levels of achievement motivation and performance despite environmental adversities (Alva, 1991), the design assumed, and the sample from which the data collected in the present study appear to best fit this term conceptually.

The proposed models in Figure 1.1 and Figure 1.2 were developed based on the previously defined *additive model* (Masten, 2001, Masten & Reed, 2002). In the proposed models a set of direct relationships between internal and external protective factors and academic achievement as a competence domain were estimated for the total sample, girls and boys separately. In these models, poverty status of students was considered as risk dimension and controlled in the study. In other words, poverty variable was not included in the structural model and treated as a control variable (see sampling procedure in the method section).

The present study also involves internal and external protective factors as the latent independent variables while academic achievement serves as the dependent latent (outcome) variable. Since there is no study in the Turkish literature that tests the contribution of the internal and external factors into academic resilience, in this preliminary study, a wide range of internal and external factors, some of which may be even considered relevant for the social competence area, included in the study to grasp the bigger picture regarding academic resilience. In other words, an array of protective factors was examined to see which factors inhibited or promoted functioning across academic competence domain under poverty. In selecting these protective factors for the structural model, Resilience and Youth Development Module developed by WestEd and California Department of Education (CDE) (WestEd & CDE, 2000; 2001) has been presumed as the conceptual guide.

Specifically, the selected external protective factors in the hypothesized external factors model are *School Caring Relationships and High Expectations* (SCHCAHI), *School Meaningful Participation* (SCHMEAN), *Community Caring Relationships and High Expectations* (COMCAHI), *Community Meaningful Participation* (COMMEAN), *Peer Caring Relationships* (PEERCARE), *Peer High Expectations* (PEERHIGH), *Home Caring Relationships* (HOMECARE), *Home High Expectations* (HOMEHIGH), and *Home Meaningful Participation* (HOMEMEAN), respectively and one outcome variable, A*cademic Achievement* (ACHIEVE).

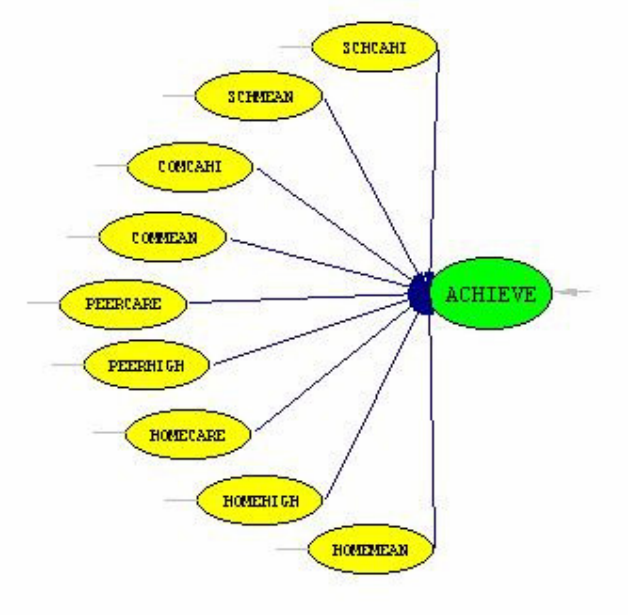

Figure 1.1 Hypothesized External Factors Model

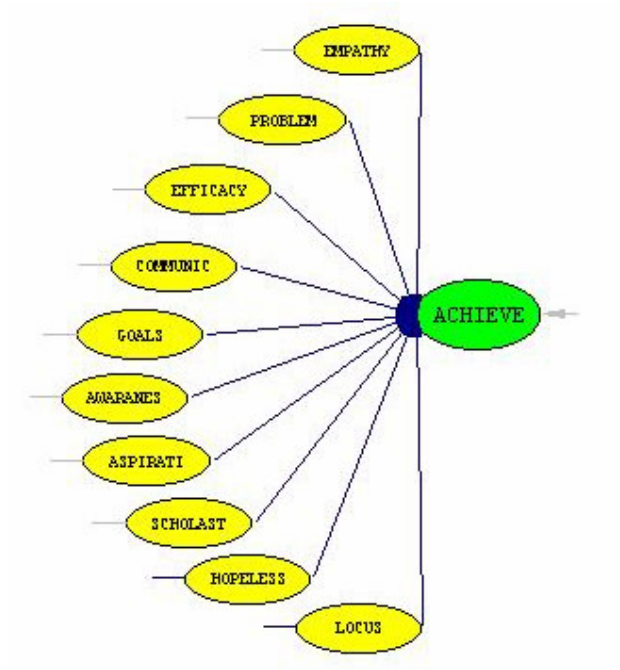

Figure 1.2 Hypothesized Internal Factors Model

In addition, the selected internal protective factors in the hypothesized internal factors model are *Empathy* (EMPATHY), *Problem solving* (PROBLEM), *Self Efficacy* (EFFICACY), *Communication and Cooperation* (COMMUNIC), *Goals* (GOALS), *Self Awareness* (AWARANES), *Educational Aspirations* (ASPIRATI), *Scholastic Competence* (SCHOLAST), *Hopelessness* (HOPELESS), and *Locus of Control* (LOCUS), respectively and one dependent variable, *Academic Achievement*.

In this study eight-grade elementary school students constituted the sample. Regarding the reason of selecting eight-grade students as the sample, several important issues need to be clarified. First, eight grade corresponds to fourteen years of age that the typical characteristics of the adolescence emerge. Second, in subsequent years, other risk factors may be faced by the students that constitute as possible confounds in the research design. Third, the researcher was concerned with addressing the students in poverty during the compulsory education years because some students will be lost following the graduation from compulsory elementary education due to several practical reasons.

With this background, the purpose of the present study is to assess the potential individual characteristics and environmental protective factors that promote academic resilience among low SES eight-grade elementary school students in Turkey.

Specifically, the present study sought answers to the following questions:

Whether there is a robust relationship between nine external protective factors and academic achievement of eight-grade students in poverty.

Whether there is a robust relationship between ten internal protective factors and academic achievement of eight-grade students in poverty.

1.10 Significance of the Study

Based on the recent observations after two consecutive economical crises that occurred since 1999, the effect of poverty has attracted the interest of the Turkish researchers of whom the present researcher is the one.

It is important to note that before the crisis the economical situation and its hazardous effects were quite obvious in Turkey. Indeed, the absolute number of children growing up in poor families living in incomes less than half of their national average was reported to be substantial and approximately 19.7 % of children were living in poor families in Turkey even before the economical crisis (UNICEF, 2000). The percentage rate of 19.7 unfortunately places Turkey on the first five countries that has high levels of relative child poverty among 29 member countries of the Organization for Economic Development (OECD).

Meanwhile, previous research has shown a strong relationship between poverty and low academic achievement (McLoyd, 1998), but there remains a high degree of variability in academic outcomes among groups of low-income students (Ripple & Luthar, 2000). This variability may well stem from the factors related to resilience. The present study aims to contribute to the literature of academic resilience by exploring internal and external protective factors *within* a group of low-income inner-city eight-grade students in Turkey. Understanding how these students have succeeded academically can be useful in assisting other at risk students even if they have not achieved or will not have achieved to the same degree (Gordon & Song, 1994; Masten, 1994). Besides, consideration of how these internal and external factors operate on the academic resilience among Turkish adolescents might help to the understanding of the academic resilience concept among groups of impoverished students.

On the other hand, although understanding of resilience has grown substantially over the past three decades and there exists a burgeoning literature on this topic, there are only a few studies on resilience in adolescence (Masten, 1994) or adolescents from

poor families (Buckner, Mezzacappa, & Beardslee, 2003). In this respect it is expected that the findings of the present study may provide additional evidence regarding how at risk adolescents succeed at school.

Most important, although the present research appears to address a well documented concept like academic achievement there is no research handling academic achievement from a resilience perspective in Turkey. Stating differently, the present study employs a totally different conceptualization in treating academic achievement. Specifically, the present study deals with identifying the factors that contribute to the academic resilience of Turkish adolescents in poverty, a population for whom research on strengths and resilience has been underrepresented.

Garmezy (1991; 1999), one of the pioneers of the resilience research, emphasized the importance of investigating resilience in the context of poverty. He stated that by studying poor children and families directly, it is more likely that findings about resilience can be converted into effective prevention programs and policies that can benefit economically disadvantaged children and families. Therefore, school counseling services may use the findings of the characteristics of academic resilience and the external and internal protective factors in order to increase the success of at-risk students by enabling prevention programs with school personnel to meet the needs of these students more effectively.

Although other mental health professionals have increasingly applied the construct of resilience in their work with their clients (Greene, 2002), counseling profession has not focus on the development of resilience in children and adolescents in any specific sense (Rak & Patterson, 1996). Once again, the understanding of academic resilience will provide guidelines to school counselors in order to develop effective prevention and intervention strategies that will help the impoverished students to foster their competence and adaptation and to become academically more resilient.

Moreover, knowledge of which protective factors enable students in poverty to succeed will help teachers and other school personnel deal more effectively with impoverished students by supporting and enhancing academic resilience and promoting the protective factors in the school environment.

Although research and theory related to resiliency offers promise to those interested in designing useful preventive strategies for poor children, the field is still in an emerging state with limited numbers of findings about protective mechanisms (Bradley & Whiteside-Mansell, 1997). In particular, there is a paucity of research into investigating the protective factors in diverse cultures. As resilience research field appears to be an American phenomenon investigating various aspects of the construct of resilience will highlight the generalizability of the concept into other cultures.

To conclude, despite its limitations, this preliminary study intends to make a contribution to an understanding of internal and external protective factors that may be important in the development of academic resilience among Turkish adolescents in poverty.

1.11 Definitions of the Terms

The terms that are commonly used in this study can be defined as follows:

Resilience refers to good adaptation under adverse circumstances. "From a developmental perspective, meeting age-salient developmental tasks in spite of serious threats to development" (Masten & Reed, 2001, p.76).

Academic resilience is defined as the "high levels of achievement motivation and performance despite the presence of stressful events and conditions that place individuals at risk of doing poorly in school and ultimately dropping out of school" (Alva, 1991, p.19).

Risk factor is a "measurable characteristic in a group of individuals or their situation that predicts negative outcome in the future on a specific outcome criterion" (Masten, & Reed, 2001, p.76).

Protective factor is a "measurable characteristic in a group of individuals or their situation that predicts positive outcome in the future on a specific outcome criterion" (Masten & Reed, 2001, p.76).

Caring relationships refers to supportive connections to others in the student's life who model and support healthy development and well-being (WestEd & CDE, 2000).

High expectations refers to the consistent communication of direct and indirect messages that the student can and will succeed responsibly (WestEd & CDE, 2000).

Meaningful participation is related to the involvement of the student in relevant, engaging, and responsible activities with opportunities for responsibility and contribution (WestEd & CDE, 2000).

Cooperation and communication skills refer to flexibility in relationships and the ability to work effectively with others, and the ability to effectively exchange ideas and express feelings and needs to others (WestEd & CDE, 2000).

Empathy refers to understanding and caring about another's experiences and feelings (WestEd & CDE, 2000).

Problem solving skills refers to ability to plan, to be resourceful, to think critically and reflectively, and to creatively examine multiple perspectives before making a decision and taking action (WestEd & CDE, 2000).

Self-efficacy refers to the belief in one's own competence (WestEd & CDE, 2000).

Self-awareness refers to knowing and understanding one's self (WestEd & CDE, 2000).

Goals refer to having general dreams, visions, and plans to focus on the future (WestEd & CDE, 2000).

Educational aspirations refer to using specific educational plans for the future and possessing high expectations for one's self (WestEd & CDE, 2000).

Scholastic Competence refers to one's perception of his/her competence or ability within the realm of academic performance (Harter, 1988).

Hopefulness refers to one's negative expectations regarding one's self and one's future (Beck, Weissman, Lester, & Trexler, 1974).

Locus of control was identified as being the degree to which an individual believes his reinforcements are dependent upon his own behaviors (internality-I) or are controlled by forces beyond his control, such as luck or chance (externality-E) (Rotter, 1966).

1.12 Limitations of the Study

This study had numerous limitations that may affect the interpretation and generalization of the study.

First, this study was not intended to account for all possible dimensions of competence in adolescence; thus, only "academic resilience" was investigated on the basis of academic achievement taken as the competence criteria. Nevertheless, particular competence criteria might reflect considerable heterogeneity in functioning across other competence domains (Buckner, Mezzacappa, & Beardslee,

2003). This means that, the results of this study may clarify only the academic competence domain of resilience. That is, high academic competence, by no means, implies a positive adaptation across all other important areas, such as social competence and behavioral conduct.

Second, the risk status considered in this study was poverty. Thus, the sample consisted primarily of low SES inner-city adolescents, and the degree to which these findings generalize to other at-risk populations is unclear.

Third, this study was carried out only with a sample of 872 eight-grade students drawn from low SES neighborhoods in Ankara. Thus, the results cannot be generalized to students from other grades. Moreover, although students from low SES districts in various cities in Turkey may be likely to share some common concerns, the results reported in this study should be treated cautiously because of the restrictions in the generalizability of the findings.

Fourth, this study does not adequately deals with the chronicity of family poverty. The measures of economic status reflects adolescent's current financial situation and gives no indication of the historical economical situations of their families.

The fifth limitation that relates to generalizability of the study is that the present study is not a longitudinal one. Consequently, the contribution of the protective factors to academic resilience of impoverished students examined in the estimated structural model may only cover a particular time and place in their lives.

Finally, the present study is a school-based study that relies on students' self reports and apart from their GPA's no additional data from the other possible sources (parents, teachers, and peers) were collected.

CHAPTER II

METHOD

In this chapter, methodological procedures are presented. The major topics are the sampling, instruments, data collection procedure, and data analysis techniques, respectively. The sampling section deals with the sample selection procedures and the familial sociodemographic characteristics of the sample. The instrument section presents the scales utilized in the collection of the data. This section also reports the results of the exploratory and confirmatory factor analyses of the instruments with their factor structure equalities analyses across gender. The procedure section deals with the way in which the scales were administered. Finally, the analyses of the data section presents the statistical techniques used in the study along with the explanations of basic terms and fundamental issues related to structural equation modeling technique.

2.1 Sample

The sample of the study consisted of 872 (439 girls, 433 boys) eight-grade students enrolled in 6 low SES inner-city public elementary schools in Ankara.

The sample selection process involved several consecutive steps. First, the low SES inner-city neighborhoods were identified from 8 central district (Altındağ, Çankaya, Etimesgut, Gölbaşı, Keçiören, Mamak, Sincan, and Yenimahalle) in Ankara with respect to the map derived from Population Census carried out on 22nd October 2000, by the State Institute of Statistics, Prime Ministry, Republic of Turkey. In this map low, middle and high socioeconomic regions are identified, streets are named and all the residences are indicated house by house (see the relevant document in Appendix A).

In the sample selection, then, three districts were randomly selected for the present study; Altındağ, Mamak, and Yenimahalle. Next, the schools located in the low SES neighborhoods within these districts were identified based on the list obtained by Ankara Directorate of National Education, Guidance and Research Centers. Afterwards, a random sampling strategy was used to draw schools located in the identified low SES neighborhoods in each district. Thus, a total of six schools (two schools for each district) were randomly selected. Finally, cluster-sampling procedure was used and all the 904 eight-grade students enrolled in 20 classes within the selected schools are sampled.

Complete data were obtained for 872 (% 96.46) of the 904 eight-grade students enrolled in the 20 classes sampled. Of the 32 (% 3.54) students who were not included in the sample, 9 were excluded because of incomplete data, 7 of them enrolled but were not attending the school, and 11 were absent throughout the days of data collection. Five educable mentally retarded students who were unable to follow the instructions during the administration were also excluded. The distribution of the participants by district, school, and gender is presented in Table 2.1.

Table 2.1 Distribution of the Participants by District, School and Gender

District	**Schools**	**Gender**		**Total**	**%**
Altındağ	Nihat Başakar	Boys	77		
		Girls	74	151	17.3
	Karacakaya	Boys	67		
		Girls	60	127	14.6
Yenimahalle	Şukufe Nihal	Boys	74		
		Girls	69	143	16.4
	Şentepe	Boys	100		
		Girls	95	195	22.3
Mamak	Atlıoğlu	Boys	75		
		Girls	93	168	19.3
	Köşklüdere	Boys	40		
		Girls	48	88	10.1
	Total	Boys	**433**		
		Girls	**439**	**872**	

The mean age of the sample was 14.3 years (SD = 0.60) with an age range of 13.0 to 16.0 years. Moreover, family socio-demographic characteristics of students that are represented with tables and percentages are also shown below:

Table 2.2 illustrates the educational levels of mothers. As can be seen from the table, educational levels of mothers were low: Out of 17.9 % of mothers, 11.4% of them were illiterate, 6.5 % of them were literate but did not graduate from elementary school. More than half of the mothers were elementary school graduates (66.6 %), 10.7 % were secondary school graduates and only 4.8% were high school graduates. On the other hand, none of the mothers possessed a university degree.

Table 2.2 Educational Levels of Mothers

Educational Level	**Girls**		**Boys**		**Total**	
	N	%	N	%	N	%
Illiterate	44	10.0	55	12.7	99	11.4
Literate	28	6.4	29	6.7	57	6.5
Elementary School Graduate	306	69.7	275	63.5	581	66.6
Secondary School Graduate	37	8.4	56	12.9	93	10.7
High School Graduate	24	5.5	18	4.2	42	4.8

As Table 2.3 shows similar to the mothers' educational level, there were no university graduates among the fathers. About half of the fathers were graduated from elementary schools (54.9 %), 26.4 % were secondary school graduates and 16.1 % were high school graduates. Out of the total sample, 1.6 % were literate but were not graduated from elementary school and 1.0 % of fathers were illiterate.

Table 2.3 Educational Levels of Fathers

Educational Level	**Girls**		**Boys**		**Total**	
	N	%	N	%	N	%
Illiterate	5	1.1	4	0.9	9	1.0
Literate	5	1.1	9	2.1	14	1.6
Elementary School Graduate	242	55.1	237	54.7	479	54.9
Secondary School Graduate	114	26.0	116	26.8	230	26.4
High School Graduate	73	16.6	67	15.5	140	16.1

Family income of the sample is presented in Table 2.4. At the time of the present study, 11.8 % of the sample reported that their monthly family income was equal or less than 250 million TL, 76.0 % reported they earned equal or less than 500 million TL, and 12.2 % reported their household income less than 750 million TL per month.

Table 2.4 Family Income per Month

Monthly Income*	**Girls**		**Boys**		**Total**	
	N	%	N	%	N	%
0 - 250	45	10.3	58	13.4	103	11.8
251 - 500	334	76.1	329	76.0	663	76.0
501 - 750	60	13.7	46	10.6	106	12.2

*Million Turkish Liras.

Table 2.5 illustrates the employment status of the parents of the sample. As can be seen from the Table, 94.2% of mothers were housewives, and only, 5.8 % of them were employed. On the contrary, 87.5% of fathers were employed and 12.5 % of them were either unemployed or retired.

Table 2.5 Employment Status of Parents

	Girls		**Boys**		**Total**	
	N	%	N	%	N	%
Mothers						
Employed	28	6.4	23	5.3	51	5.8
Unemployed	411	93.6	410	94.7	821	94.2
Fathers						
Employed	388	88.4	375	86.6	763	87.5
Unemployed	51	11.6	58	13.4	109	12.5

In addition, Table 2.6 shows the father's occupational status with respect to 1988 International Standard Classification of Occupations (ISCO-88). As can be seen from the Table, 41.3 % of fathers are *craft and related trades workers* such as carpenters and joiners, butchers, tailors, shoe makers, painters, and motor vehicle mechanics, etc. Approximately, the other one third of fathers (32.5 %) have been working in *elementary occupations* as manufacturing laborers, building construction laborers, street vendors, doorkeepers, and garbage collectors etc. Out of the total sample, 13.4 % of fathers are *plant and machine operators and assemblers*

involving motor vehicle drivers, printing machine operators, wood processing plant operators, etc. On the other hand, 9.3 % of fathers were clerks such as mail carriers and sorting clerks, production and transport clerks etc., and only 3.6 % of fathers are working as *service workers and shop sales workers* such as fire-fighters, barbers, and shop and market salespersons etc.

Table 2.6 Fathers' Occupational Status with respect to ISCO1988

Major Occupation Groups	**Girls**		**Boys**		**Total**	
	N	%	N	%	N	%
1. Professionals	-	-	-	-	-	-
2. Legislators, Senior Officials & Managers	-	-	-	-	-	-
3. Technicians & Associate Professionals	-	-	-	-	-	-
4. Clerks	44	10	37	8.5	81	9.3
5. Service Workers & Shop Sales Workers	15	3.4	16	3.7	31	3.6
6. Skilled Agricultural & Fishery Workers	-	-	-	-	-	-
7. Craft and related Trades Workers	182	41.5	178	41.1	360	41.3
8. Plant & Machine Operators & Assemblers	71	16.2	46	10.6	117	13.4
9. Elementary Occupations	127	44.9	156	36.0	283	32.5
10. Armed Forces	-	-	-	-	-	-

As shown in Table 2.7, 83.4 % of students live in gecekondu (squatter) and 16.6 % of them live in the apartments in the same neighborhood.

Table 2.7 Home Types

	Girls		**Boys**		**Total**	
	N	%	N	%	N	%
Apartment	84	19.1	61	14.1	145	16.6
Gecekondu	355	80.9	372	85.9	727	83.4

As Table 2.8 illustrates, 62.7 % of the families owned their houses (mostly gecekondu), while 26.1 % rented them, and 11.2 % lived in the houses owned by their relatives without any payment.

Table 2.8 Home Ownership

	Girls		**Boys**		**Total**	
	N	%	N	%	N	%
Own home	272	62.0	275	63.5	547	62.7
Tenant	116	26.4	111	25.6	227	26.1
Without payment	51	11.6	47	10.9	98	11.2

When the types of the family examined, it was observed that 83.4 % of the sample were from nuclear families, while 16.6 % were from extended families (Table 2.9).

Table 2.9 Family Type

	Girls		Boys		Total	
	N	%	N	%	N	%
Nuclear	369	84.1	358	82.7	727	83.4
Extended	70	15.9	75	17.3	145	16.6

2.2 Instruments

Five instruments, namely, Demographic Data Form, Resilience and Youth Development Module (RYDM), Scholastic Competence Scale (SCS), Beck Hopelessness Scale (BHS), and Nowicki-Strickland Locus of Control Scale (N-SLCS) were used in the present study. Moreover, grade point averages (6^{th}, 7^{th} and 8^{th} grades) of students were used as the measure of Academic Achievement.

2.2.1 Demographic Data Form

A demographic data form (see Appendix B for complete sheet) was developed and used to obtain information for the purpose of sample description and family composition. The form consisted of the items searching for the basic demographic information including, gender, age, parental education level, parental occupational status, family income level, family size, and household composition.

2.2.2 Resilience and Youth Development Module (RYDM)

The RYDM used in this study was the M6 2002 version of the Middle School Resilience and Youth Development Module (see Appendix C for the instrument) which is an optional module of the California Healthy Kids Survey (CHKS) and was developed under the contract from California Department of Education (CDE) by WestEd, which is a non-profit research, development, and service agency.

The RYDM is an integral component of the California Department of Education Healthy Kids Program Office's youth development initiative and was used in this study with the permission of WestEd (see Appendix D for the permission letter).

The RYDM is intended to use in assessing and understanding a variety of external and internal protective factors associated with positive youth development (Constantine, Benard, & Diaz, 1999).

The RYDM measures 11 External Assets (using 33 survey questions) and it asks students their perceptions of Caring Relationships, High Expectations, and Opportunities for Meaningful Participation in their Home, School, Community, and Peer group. External assets are defined as the environmental supports and opportunities or protective factors that facilitate healthy and successful development in children and youth.

The RYDM also measures 6 Internal Assets (using 18 survey items) including Cooperation and Communication, Empathy, Problem Solving, Self-Efficacy, Self-Awareness, and Goals and Aspirations. Internal Assets are defined as the positive developmental outcomes or personal strengths associated with healthy and successful development.

The RYDM has additional 5 items related to School Connectedness; however these items are optional in the module. The instrument also has 3 filler items. Students are instructed to indicate the degree to which each item in the module applied to them on a 4-point Likert scale, ranging from "very much true = 4", "pretty much true =3", "a little true =2", to "not at all true = 1".

Results of the reliability analysis demonstrated that reliability for each dimensions as estimated by Chronbach alpha for the 11 external asset clusters of the original RYDM were 0.84, 0.86, 0.77, 0.84, 0.90, 0.73, 0.86, 0.59, 0.77, 0.76, 0.75 for the external clusters of school caring relationships, school high expectations, school meaningful participation, community caring relationships, community high

expectations, community meaningful participation, peer caring relationships, peer high expectations, home caring relationships, home high expectations, and home meaningful participation, respectively (WestEd & CDE, 2001). The coefficient alpha calculated to measure internal consistencies of 6 internal asset clusters of the original RYDM were 0.74, 0.80, 0.77, 0.82, 0.79, 0.77 for cooperation and communication, self-efficacy, empathy, problem-solving, self-awareness, and goals and aspirations, respectively (WestEd & CDE, 2001).

The preliminary construct validity analyses of the external protective factors of the original RYDM by using confirmatory factor analysis revealed nine identifiable factors (WestEd & CDE, 2002). Although the original RYDM proposed an eleven-factor model, the validity analysis suggested that caring relationships and high expectations at school were not distinct factors. The same was also the case for community caring relationships and high expectations. Accordingly, the external protective factors were as follows: school caring relationships and high expectations, school meaningful participation, community caring relationships and high expectations, community meaningful participation, peer caring relationships, peer high expectations, home caring relationships, home high expectations, and home meaningful participation.

On the other hand, WestEd did not report the preliminary construct validity analyses of the internal factors by using confirmatory factor analysis. However, concurrent validity of RYDM with Multidimensional Profile of Students' Life Satisfaction Survey (MSLSS) and Extended Life Orientation Test (ELOT), which is a bidimensional measure of optimism and pessimism were described. The researchers reported that correlations were strong across instruments: students with high internal assets reported being more satisfied with school, family, self and peer, and students with high internal assets reported having more optimistic reinforcement expectations (Furlong, Soliz, Greif, & Simental, 2004).

In the present study, the instrument translated and back-translated following the procedure described below: First, the RYDM was translated from English to Turkish by three judges (one clinical psychologist, one psychological counselor, and one English teacher) who were fluent in English. Second, the three translated versions of RYDM and its original English version were given to three other judges (two professors in guidance and counseling field and a measurement specialist) to evaluate the three versions of translated instrument and choose the best fitting translation for each item. All the judges had excellent command of English and had translation experience. The recommended changes were made based on the feedback given by the judges. Third, in order to ensure the equivalence of the RYDM in two languages, the Turkish translation of the instrument was given to another two psychological counselors who also had excellent command of English for back-translation. Fourth, the translated and back-translated versions of the instruments were compared to make sure if the meaning of each item was maintained. Finally, the researcher has decided to use the instrument when all the items of the instrument were made clear in meaning.

2.2.2.1 Measurement Models of RYDM

The purpose of a measurement model is to describe how well the observed indicators serve as a measurement instrument for the latent variables (factors) and the key concepts are measurement, reliability and validity. Moreover, measurement models often suggest ways in which the observed measurements can be improved (Jöreskog & Sörbom, 1993). The method of Confirmatory Factor Analysis (CFA) reflects measurement models in which observed variables define constructs or latent variables (Schumacker & Lomax, 1996) and it is also used to evaluate construct validity (Kline, 1998). Confirmatory factor analysis has several advantages. First, confirmatory factor analysis enables alternative hypothesized models about the underlying factor structure to be directly tested. It also provides useful information about how well a factor model accounts for the observed data and how much one can improve an alternative model to fit the model being tested (Harvey, Billings, & Nilan, 1985).

In the light of information given above, the following strategy proceeded in order to determine the "correct" measurement model for the external and internal assets items of RYDM and examine the measurement equivalence across gender groups:

1. A series of exploratory factor analysis (EFA) models were estimated to preliminary determine the number of factors (constructs) that the items measure and the factor patterns for each assets for the total sample, girls and boys separately.

2. Using the EFA results as a starting point, a series of confirmatory factor analysis (CFA) models were estimated in order to determine the "optimal model" for the total sample, girls and boys separately. Measures of model fit[1], correlations among the factors[2], factor loading patterns[3] and substantive criteria (meaningful relations based on item wording) were used to make decisions about models.

3. If the factor patterns and number of factors detected were similar across gender groups, the equality of covariance matrices was examined.

2.2.2.1.1 Exploratory Factor Analysis of the RYDM-External Assets

As an exploratory factor analysis (EFA), principal component analysis with varimax rotation followed by the Kaiser normalization procedure was applied to RYDM-external assets measure scores in order to check the factor structures. The results revealed 7 interpretable factors for the total sample, with eigenvalues above one, which explained the 54 % of the total variance.

[1] For the measures of model fit, Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Comparative Fit Index (CFI), Standardized Root Mean Squared Residual (SRMR), and Root-Mean-Square Error of Approximation (RMSEA) were used in the present study.
[2] If the correlation between two constructs (factors) was greater than .90, it was determined that these factors were not distinct, and the factors were combined into one factor.
[3] A minimum of two or more items (observed variables) was required to load on one factor and items that consistently and strongly loaded on more than one factor (crossloadings) were dropped for conceptual clarity.

The EFA results also yielded 7 interpretable factors for girls, with eigenvalues above one, which explained 56 % of the total variance and, 7 factors for boys with eigenvalues above one, which explained 55 % of the total variance. The varimax rotated factor loadings, eigenvalues, percentages and cumulative percentages of the explained variance of the factors of RYDM external assets for total sample, girls and boys were displayed separately in Appendix E.

Table 2.10 presents the factor patterns of the External Assets part of RYDM, based on the selected Explanatory Factor Analysis models.

Table 2.10 EFA Factor Patterns for RYDM-External Assets from Selected EFA Models

Factors	Total Sample	Girls	Boys	Resilience Module
School – Caring Relationships				**X**
School – High Expectations				**X**
School – Caring Relationships & High Expectations	**X**	**X**	**X**	
School – Meaningful Participation				**X**
School / Community – Meaningful Participation	**X**	**X**	**X**	
Community – Caring Relationships				**X**
Community – High Expectations				**X**
Community – Caring Relationships & High Expect.	**X**	**X**	**X**	
Community – Meaningful Participation				**X**
Peer – Caring Relationships	**X**	**X**	**X**	**X**
Peer – High Expectations	**X**	**X**	**X**	**X**
Home – Caring Relationships				**X**
Home – High Expectations		**X**		**X**
Home – Caring Relationships & High Expectations	**X**		**X**	
Home – Meaningful Participation	**X**		**X**	**X**
Home – Caring Relationships & Meaningful Partic.		**X**		
Number of Factors	**7**	**7**	**7**	**11**

As Table 2.10 illustrates, the formulation used in resilience module uses an 11-factor model. However, the EFA results of the present study revealed 7 factors for the total sample, and for girls, and boys. The results suggested that *caring relationships and high expectations* at school and in community were not distinct factors for the total sample, and for the girls and boys. The same was true for community and school *meaningful participation*. Although *caring relationships and high expectations* at home appeared to be indistinct factors for the total sample and for the boys, *caring relationships* and *meaningful participation* at home were deemed to be clustered into one factor for girls.

Thus, the researcher decided to make conclusions about the number of factors and factor patterns in order to find the correct measurement model of RYDM-External Assets measure after applying the confirmatory factor analysis.

2.2.2.1.2 Confirmatory Factor Analysis of the RYDM-External Assets

The EFA results were taken as the starting point for a series of CFA models. First, a CFA model (Model 1) was estimated that was equivalent to the optimal EFA model for each group (total sample, girls, and boys) separately. Based on the theory, modification indices, model fit, and factor inter-correlations, a nested series of modifications were made to this model to estimate an "optimal" and "preferred" CFA model. Goodness-of fit information for these series of CFA models for total sample and for each gender group are presented in Appendix F. In general, the researcher identified a "preferred" well -fitting CFA model for each group. For conceptual clarity, the researcher did not choose a model in which observed variables loads on more than one factor.

Model fit was assessed according to multiple goodness-of-fit indices in the present study. The χ^2 statistics assessed the absolute fit of the model to the data (Bollen, 1989), but it is sensitive to sample size and have a tendency to indicate a significant probability level and assumes the correct model when the sample size increases generally above 200 (Schumacker & Lomax, 1996). As norms about good fit were developed as LISREL became broadly used, a χ^2/df ratio of less than 2.00 was proposed as a conservative indicator of an acceptable fit (Byrne, 1989, as cited in Peng & Peterson, 1998). Kline (1998) noted that although no exact guideline exists, a χ^2/df ratio of less than 3.00 is also considered acceptable.

Accordingly, other "ad hoc" indices were also used in the present study to examine the overall fit of the CFA models and judge the model fit, including goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), root mean squared error of approximation (RMSEA), and standardized root mean squared residual (SRMR) estimates.

The expected values for a good model data fit interpretation are possible if the GFI, AGFI, and CFI index values are above .90; RMSEA and SRMR index values are below .05 (Schumacker & Lomax, 1996).

As mentioned above, modifications to the CFA models of RYDM External Assets were also performed based on theoretical, empirical (statistical) and substantive information to improve the factorial validity of the RYDM External Assets by identifying a subset of observed variables that best tapped the latent variables. For the purpose of revising the model data fit, modification indexes were also considered.

In the present study, there is consistent evidence that, observed variable RES26 "Outside of my home and school, I help other people", which was first conceptualized to measure *community meaningful participation*, crossloads on *school-* and *home meaningful participation*. The observed variable appears to tap a more general aspect of meaningful participation than *community meaningful participation.* For reasons of conceptual clarity, observed variable RES26 is dropped from the preferred optimal CFA model. Second, relative to all RYDM-External Assets items, only observed variable RES30 "My friends get into a lot of trouble" exhibited so weak parameter estimates and excluded from the preferred optimal CFA model. Third, the correlation coefficient between *school caring relationships* and *school high expectations* was greater than 0.90 (r = 0.98). It appeared that these two latent variables were not distinct, and were combined into one latent variable, namely *school caring relationships and high expectations*. Similarly, the correlation coefficient between *community caring relationships* and *community high expectations* was 0.94. Consequently, it was thought that these two latent variables were also not distinct and were combined into one latent variable, namely *community caring relationships and high expectations*. This result is consistent with the original findings of the confirmatory factor analysis of RYDM.

The result of the confirmatory factor analysis for the preferred model (Model 8) of RYDM-External Assets measure with nine latent variables for the total sample yielded following goodness-of-fit indices: $\chi^2(393) = 850.574$, $p < 0.05$; $\chi^2/df = 2.16$; GFI = 0.94; AGFI = 0.93; CFI = 0.95; RMSEA = 0.037; and SRMR = 0.038. These indices were deemed adequate to treat the respective observed variable groups as distinct latent variables for the total sample in the structural model. Table 2.11 indicates the standardized Lambda-x values, standard errors, t-values, and squared multiple correlations (R^2) as obtained for each of the observed variables from the confirmatory factor analysis. All parameter estimates were statistically significant ($p<0.05$). Moreover, all Lambda-x values, which are the loadings of each observed variable on respective latent variable, ranged from 0.51 to 0.84 and supported the idea of using these latent variables in the proposed path analytic model to explain the academic achievement of the eight grade impoverished students.

As can be seen from Table 2.11, the first latent variable represented observed variables related to *school caring relationships and high expectations* (SCHCAHI). Six observed variables were positively and significantly loaded on this latent variable, including RES6 "Teacher really cares about me" ($\lambda_x = 0.63$, $p < 0.05$), RES7 "Teacher tells me when I do a good job" ($\lambda_x = 0.59$, $p < 0.05$), RES8 "Teacher notices when I'm not there" ($\lambda_x = 0.51$, $p < 0.05$), RES9 "Teacher always wants me to do my best" ($\lambda_x = 0.60$, $p < 0.05$), RES10 "Teacher listens to me when I have something to say" ($\lambda_x = 0.66$, $p < 0.05$), RES11 "Teacher believes that I will be a success" ($\lambda_x = 0.70$, $p < 0.05$). One of the six variables, RES11 accounted for the greatest variance ($R^2 = 0.49$) of the latent variable SCHCAHI.

In the second latent variable, the following observed variables were positively and significantly loaded on the *school meaningful participation* (SCHMEAN) latent variable: RES13 "I do interesting activities at school" ($\lambda_x = 0.65$, $p < 0.05$), RES14 "At school I help decide things like class activities or rules" ($\lambda_x = 0.67$, $p < 0.05$), RES15 "I do things at my school that make a difference" ($\lambda_x = 0.70$, $p < 0.05$). One of the three variables, RES15 accounted for the greatest variance ($R^2 = 0.45$) of the latent variable SCHMEAN.

Table 2.11 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of RYDM-External Assets for Total Sample

Latent and Observed Variables	λ_x	SE	t	R^2
School Caring Relationships & High Expectations				
RES6 Teacher really cares about me	0.63	0.03	18.88	0.40
RES7 Teacher tells me when I do a good job	0.59	0.04	17.55	0.35
RES8 Teacher notices when I'm not there	0.51	0.04	14.78	0.26
RES9 Teacher always wants me to do my best	0.60	0.03	17.84	0.36
RES10 Teacher listens to me when I have something	0.66	0.03	20.12	0.44
RES11 Teacher believes that I will be a success	0.70	0.03	21.99	0.49
School Meaningful Participation				
RES13 I do interesting activities at school	0.59	0.04	16.48	0.35
RES14 At school I help decide things like class rules	0.65	0.04	18.28	0.42
RES15 I do things at school that make a difference	0.67	0.04	18.78	0.45
Community Caring Relationships & High Expectations				
RES18 Adult really cares about me	0.68	0.04	21.07	0.46
RES19 Adult tells me when I do a good job	0.69	0.03	21.46	0.47
RES20 Adult notices when I am upset	0.64	0.04	19.41	0.40
RES21 Adult believes that I will be a success	0.69	0.03	22.27	0.48
RES22 Adult always wants me to do my best	0.68	0.03	21.39	0.46
RES23 I trust an adult outside my home	0.62	0.03	18.97	0.39
Community Meaningful Participation				
RES24 I am part of clubs or other group activities	0.56	0.05	12.70	0.32
RES25 I am involved in music or a hobby	0.68	0.05	14.05	0.46
Peer Caring Relationships				
RES27 Friend really cares about me	0.78	0.03	25.68	0.61
RES28 Friend talks with me about my problems	0.84	0.03	28.29	0.70
RES29 Friend helps me when having hard time	0.82	0.03	27.40	0.67
Peer High Expectations				
RES31 Friends try to do what is right	0.72	0.04	17.65	0.52
RES32 Friends do well in school	0.62	0.04	15.75	0.38
Home Caring Relationships				
RES34 Parent is interested in my school work	0.67	0.03	20.44	0.44
RES36 Parent talks with me about my problems	0.82	0.03	26.48	0.66
RES38 Parent listens to me when I have something	0.76	0.03	24.14	0.58
Home High Expectations				
RES33 Parent expects me to follow the rules	0.54	0.03	15.40	0.29
RES35 Parent believes that I will be a success	0.63	0.03	18.88	0.39
RES37 Parent always wants me to do my best	0.69	0.03	20.55	0.48
Home Meaningful Participation				
RES39 I do fun things and go fun places with parent	0.57	0.04	15.46	0.32
RES40 I do things at home that make a difference	0.65	0.04	17.88	0.42
RES41 I help make decisions with my family	0.60	0.04	16.27	0.35

In the third latent variable, observed variables RES18 "Adult really cares about me" ($\lambda_x = 0.68$, $p < 0.05$), RES19 "Adult tells me when I do a good job" ($\lambda_x = 0.69$, $p < 0.05$), RES20 "Adult notices when I am upset about something" ($\lambda_x = 0.64$, $p < 0.05$), RES21 "Adult believes that I will be a success" ($\lambda_x = 0.69$, $p < 0.05$), RES22 "Adult always wants me to do my best" ($\lambda_x = 0.68$, $p < 0.05$), RES23 "I trust

an adult outside my home" ($\lambda_x = 0.62$, $p < 0.05$) were deemed to represent the latent variable named as c*ommunity caring relationships and high expectations* (COMCAHI). All the six variables were positively and significantly loaded on COMCAHI. Among these six variables, RES21 accounted for the greatest variance ($R^2 = 0.48$) of the latent variable COMCAHI.

Two observed variables, namely RES24 "I am part of clubs, sport teams or other extra group activities away from school" ($\lambda_x = 0.56$, $p < 0.05$) and RES25 "I am involved in music or a hobby" ($\lambda_x = 0.68$, $p < 0.05$) were loaded significantly and positively on the fourth latent variable called *community meaningful participation* (COMMEAN). RES21 also accounted for the greatest variance ($R^2 = 0.46$) of the latent variable COMMEAN.

In the fifth latent variable, RES27 "Friend really cares about me" ($\lambda_x = 0.78$, $p < 0.05$), RES28 "Friend talks with me about my problems" ($\lambda_x = 0.84$, $p < 0.05$), RES29 "Friend helps me when I am having a hard time" ($\lambda_x = 0.82$, $p < 0.05$), were deemed to represent and positively and significantly loaded on the latent variable *peer caring relationships* (PEERCARE). One of the three observed variables, RES28 accounted for the greatest variance ($R^2 = 0.70$) of the latent variable PEERCARE.

Moreover, two observed variables including RES31 "Friends try to do what is right" ($\lambda_x = 0.72$, $p < 0.05$) and RES32 "Friends do well in school" ($\lambda_x = 0.62$, $p < 0.05$) were loaded significantly and positively on the sixth latent variable called *peer high expectations* (PEERHIGH). RES31 also accounted for the greatest variance ($R^2 = 0.52$) of the latent variable PEERHIGH.

The seventh latent variable represented observed variables related to *home caring relationships* (HOMECARE). Three observed variables were significantly and positively loaded on this latent variable, including RES34 "Parent is interested in my school work" ($\lambda_x = 0.67$, $p < 0.05$), RES36 "Parent talks with me about my

problems" ($\lambda_x = 0.82$, $p < 0.05$), RES38 "Parent listens to me when I have something to say" ($\lambda_x = 0.76$, $p < 0.05$), One of the three variables, RES36 accounted for the greatest variance ($R^2 = 0.66$) of the latent variable HOMECARE.

The eight latent variable called *home high expectations* (HOMEHIGH) consisted of three observed variables, namely RES33 "Parent expects me to follow the rules" ($\lambda_x = 0.54$, $p < 0.05$), RES35 "Parent believes that I will be a success" ($\lambda_x = 0.63$, $p < 0.05$), RES37 "Parent always wants me to do my best" ($\lambda_x = 0.69$, $p < 0.05$). All the aforementioned observed variables were positively and significantly loaded on HOMEHIGH and RES37 accounted for the greatest variance ($R^2 = 0.48$) of this latent variable.

In the last latent variable, observed variables RES39 "I do fun things and go fun places with my parents" ($\lambda_x = 0.57$, $p < 0.05$), RES40 "I do things at home that make a difference" ($\lambda_x = 0.65$, $p < 0.05$), and RES41 "I help make decisions with my family" ($\lambda_x = 0.60$, $p < 0.05$) were deemed to represent the latent variable named as *home meaningful participation* (HOMEMEAN). All the three variables were positively and significantly loaded on this latent variable. Among the three observed variables, RES40 accounted for the greatest variance ($R^2 = 0.42$) of the latent variable HOMEMEAN.

The results of the confirmatory factor analysis for the preferred optimal model (Model 8) of RYDM-External Assets measure with nine factors for both girls and boys groups also provided the strongest support for the model with all seven fit indexes. Goodness-of-fit indices related to the structure of the RYDM-External Assets for the total sample and gender groups are presented in Table 2.12. As can be seen from Table 2.12, all estimated CFA models for each group met the minimum fit criteria, thus yielding a satisfactory fit to the data. These indices were also considered adequate to treat the respective item groups as the distinct latent variables across gender groups in the path analytic model. The model fit results also suggested that the factor loading patterns do not greatly differ across gender groups.

Table 2.12 Chi-Square and Goodness-of-Fit Statistics of Estimated RYDM-External Assets CFA Models for Total Sample and Gender Groups

Indexes	Total Sample	Girls	Boys
GFI	0.94	0.91	0.92
AGFI	0.93	0.90	0.90
CFI	0.95	0.93	0.95
RMSEA	0.037	0.043	0.035
S-RMR	0.038	0.049	0.043
χ^2	850.574	706.440	598.279
df	393	392	394
χ^2**/df**	2.16	1.80	1.52
P	< 0.05	< 0.05	< 0.05
N	872	439	433

Note. GFI = Goodness-of-fit-index; AGFI = Adjusted goodness-of-fit-index; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; S-RMR = Standardization root mean square residual; χ^2 = Chi-square; df = Degrees of freedom, N = Sample size.

The associated standardized Lambda-x estimates of the observed variables of the RYDM external assets for gender groups are presented in Table 2.13. All parameter estimates were statistically significant ($p<0.05$). All observed variable loadings on the nine associated latent variables across gender groups ranged from 0.44 to 0.88 and supported the idea of using these latent variables in the proposed path analytic model to explain the academic achievement of the eight grade students in poverty. The standardized Lambda-x estimates, standard errors, t-values, and squared multiple correlations as obtained for each of the observed variables from the estimated CFA models for girls and boys groups can be seen in Appendix G separately.

Table 2.13 Standardized Lambda-x Estimates of the Observed Variables of RDYM-External Assets Across Gender Groups

Latent and Observed Variables		Girls	Boys
School Caring Relationships & High Expectations			
RES6	Teacher really cares about me	0.66	0.60
RES7	Teacher tells me when I do a good job	0.65	0.54
RES8	Teacher notices when I'm not there	0.57	0.47
RES9	Teacher always wants me to do my best	0.59	0.60
RES10	Teacher listens to me when I have something	0.63	0.68
RES11	Teacher believes that I will be a success	0.69	0.70
School Meaningful Participation			
RES13	I do interesting activities at school	0.67	0.52
RES14	At school I help decide things like class rules	0.67	0.61
RES15	I do things at school that make a difference	0.63	0.73
Community Caring Relationships & High Expectations			
RES18	Adult really cares about me	0.61	0.72
RES19	Adult tells me when I do a good job	0.61	0.73
RES20	Adult notices when I am upset	0.59	0.65
RES21	Adult believes that I will be a success	0.72	0.68
RES22	Adult always wants me to do my best	0.68	0.68
RES23	I trust an adult outside my home	0.57	0.66
Community Meaningful Participation			
RES24	I am part of clubs or other group activities	0.57	0.59
RES25	I am involved in music or a hobby	0.65	0.66
Peer Caring Relationships			
RES27	Friend really cares about me	0.77	0.75
RES28	Friend talks with me about my problems	0.87	0.79
RES29	Friend helps me when having hard time	0.87	0.77
Peer High Expectations			
RES31	Friends try to do what is right	0.76	0.67
RES32	Friends do well in school	0.61	0.62
Home Caring Relationships			
RES34	Parent is interested in my school work	0.68	0.65
RES36	Parent talks with me about my problems	0.80	0.83
RES38	Parent listens to me when I have something	0.76	0.75
Home High Expectations			
RES33	Parent expects me to follow the rules	0.51	0.56
RES35	Parent believes that I will be a success	0.63	0.63
RES37	Parent always wants me to do my best	0.65	0.72
Home Meaningful Participation			
RES39	I do fun things and go fun places with parent	0.59	0.58
RES40	I do things at home that make a difference	0.59	0.71
RES41	I help make decisions with my family	0.60	0.58

2.2.2.1.3 Factor Structure Equalities of the RDYM-External Assets Across Gender Groups

The problem in this study is validating the similar structures across gender for further investigation of the group differences in the latent variables of RYDM-External Assets. Considering the aforementioned indices as satisfactory, covariance

structure equalities of the nine-factor model were tested across the gender groups by using the LISREL 8.30 in the next step. In this analysis, to test whether the nine-factor model holds in both gender groups, covariance matrices obtained among the 31 items in the samples of girls and boys were used. Table 2.14 indicates the Lambda-x estimates for the observed variables of RYDM-External Assets, their standard errors with the *t* statistic and squared multiple correlations.

Table 2.14 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations for the Equality of Covariance Matrices for RYDM-External Assets

Latent and Observed Variables	λ_x	**SE**	**t**	$\mathbf{R^2}$
School Caring Relationships & High Expectations				
RES6 Teacher really cares about me	0.63	0.03	18.77	0.39
RES7 Teacher tells me when I do a good job	0.59	0.04	17.43	0.34
RES8 Teacher notices when I'm not there	0.52	0.04	15.06	0.27
RES9 Teacher always wants me to do my best	0.60	0.03	17.82	0.34
RES10 Teacher listens to me when I have something	0.66	0.03	19.89	0.43
RES11 Teacher believes that I will be a success	0.69	0.03	21.81	0.48
School Meaningful Participation				
RES13 I do interesting activities at school	0.59	0.04	16.37	0.35
RES14 At school I help decide things like class rules	0.65	0.04	18.17	0.42
RES15 I do things at school that make a difference	0.68	0.04	19.03	0.46
Community Caring Relationships & High Expectations				
RES18 Adult really cares about me	0.67	0.03	20.81	0.45
RES19 Adult tells me when I do a good job	0.68	0.03	21.33	0.46
RES20 Adult notices when I am upset	0.62	0.04	18.89	0.39
RES21 Adult believes that I will be a success	0.69	0.03	22.03	0.48
RES22 Adult always wants me to do my best	0.67	0.03	21.07	0.45
RES23 I trust an adult outside my home	0.62	0.03	18.80	0.39
Community Meaningful Participation				
RES24 I am part of clubs or other group activities	0.58	0.05	13.27	0.33
RES25 I am involved in music or a hobby	0.66	0.05	14.32	0.43
Peer Caring Relationships				
RES27 Friend really cares about me	0.76	0.03	24.77	0.58
RES28 Friend talks with me about my problems	0.82	0.03	27.45	0.68
RES29 Friend helps me when having hard time	0.82	0.03	27.23	0.67
Peer High Expectations				
RES31 Friends try to do what is right	0.76	0.04	17.12	0.52
RES32 Friends do well in school	0.61	0.04	15.25	0.37
Home Caring Relationships				
RES34 Parent is interested in my school work	0.66	0.03	20.41	0.44
RES36 Parent talks with me about my problems	0.82	0.03	26.81	0.67
RES38 Parent listens to me when I have something	0.76	0.03	24.24	0.58
Home High Expectations				
RES33 Parent expects me to follow the rules	0.54	0.03	15.42	0.29
RES35 Parent believes that I will be a success	0.62	0.03	18.80	0.39
RES37 Parent always wants me to do my best	0.69	0.03	20.50	0.48
Home Meaningful Participation				
RES39 I do fun things and go fun places with parent	0.57	0.04	15.44	0.32
RES40 I do things at home that make a difference	0.65	0.04	17.84	0.42
RES41 I help make decisions with my family	0.60	0.04	16.24	0.35

The nine-factor measurement model gave the following fit indexes: $\chi^2(887) = 1538.03$, $p < 0.05$; $\chi^2/df = 1.73$; GFI = 0.91; CFI = 0.93; RMSEA = 0.041; and SRMR = 0.054. These indexes indicate a good fit of the model to the data, except for the SRMR index that is slightly higher than the minimum fit value (SRMR < 0.05). Considering the values obtained from the fit indices as adequate, the researcher decided to continue the analysis with this nine-factor external assets model for the structural equation model.

2.2.2.1.4 Reliability of RDYM-External Assets

As shown in Table 2.15, the internal consistencies as estimated by Chronbach alpha for the nine latent variables of RYDM-External Assets were ranged from 0.55 to 0.85 for the total sample, 0.54 to 0.87 for girls, and 0.56 to 0.84 for boys. The overall reliability coefficient for the whole RYDM-External Assets was 0.90 for the total sample, 0.89 for girls, and 0.90 for boys. These results indicated that the reliability evidence for RYDM-External Assets were satisfactory, except "*Community Meaningful Participation*" which yielded rather low coefficients for the total sample and gender groups.

Table 2.15 Alpha Reliability Coefficients of Latent Variables of RDYM-External Assets Across Groups

Latent Variables of RYDM-External Assets	**Cronbach Alpha**		
	Total Sample	**Girls**	**Boys**
1. School Caring Relationships & High Expectations	.78	.80	.76
2. School Meaningful Participation	.67	.70	.65
3. Community Caring Relationships & High Expectations	.83	.80	.84
4. Community Meaningful Participation	.55	.54	.56
5. Peer Caring Relationships	.85	.87	.82
6. Peer High Expectations	.62	.63	.59
7. Home Caring Relationships	.79	.79	.78
8. Home High Expectations	.66	.63	.68
9. Home Meaningful Participation	.63	.62	.65

2.2.2.1.5 Exploratory Factor Analysis of the RYDM-Internal Assets

For an exploratory factor analysis (EFA), principal component analysis with varimax rotation followed by the Kaiser Normalization procedure was applied to RDYM-Internal Assets measure in order to check the factor structures of the instrument. As shown in Table 2.19, results revealed 5 interpretable factors for the total sample, with eigenvalues above one, which explained the 54 % of the total variance.

The EFA results also revealed 5 interpretable factors for the girls, with eigenvalues above one, which explained 54 % of the total variance and, 5 factors for boys with eigenvalues above one, which explained 55 % of the total variance. The varimax rotated factor loadings, eigenvalues, and percentages and cumulative percentages of the explained variance of the factors of RDYM-Internal Assets for total sample, girls and boys were shown separately in Appendix H.

As can be seen from Table 2.16, the formulation used in the original resilience module uses a 6-factor model. However, the EFA results of the present study revealed 5 factors for the total sample and, for girls, and boys. The results suggested that "*self-efficacy*" and "*communication and cooperation*" are not distinct factors for the total sample and for girls. On the other hand, "*problem solving*" and "*communication and cooperation*" did not seem to be separate factors for boys. There was only one item of the internal assets of RYDM, namely item 47 (*I can work out my problems*) that was grouped under "*self-awareness*" factor, instead of "*communication and cooperation*" in all three EFA models in the present study. To conclude, the researcher considered making decisions about the number of factors and factor patterns in order to find the correct measurement model after confirmatory factor analysis.

Table 2.16 EFA Factor Patterns for RYDM-Internal Assets from Selected EFA Models

Factors	Total Sample	Girls	Boys	Resilience Module
Empathy	X	X	X	X
Problem Solving	X	X		X
Problem Solving & Communication			X	
Communication				X
Self-Efficacy & Communication	X	X		
Self-Efficacy			X	X
Self-Awareness	X	X	X	X
Goals and Aspirations	X	X	X	X
Number of Factors	**5**	**5**	**5**	**6**

2.2.2.1.6 Confirmatory Factor Analysis of the RYDM-Internal Assets

The EFA results were taken as a starting point for a series of CFA models. First, a CFA model (Model 1) was estimated that was equivalent to the optimal EFA model for each group (total sample, girls, and boys). Based on the theory, modification indices, model fit, factor inter-correlations, and a nested series of modifications were made to this model to estimate an "optimal" and "preferred" CFA model. Goodness - of fit information for these series of CFA models for the total sample and for each gender group are presented in Appendix I.

Modifications to the CFA models of RYDM-Internal Assets were also performed based on theoretical, empirical and substantive information to improve the factorial validity of the RYDM-Internal Assets by identifying a subset of observed variables that best tapped the latent variables. In the present study, there was consistent evidence that, item RES47 "Outside of my home and school, I help other people", exhibited so weak parameter estimates and excluded from the preferred optimal model. Secondly, RES54 "There is a purpose to my life" and RES57 "I have goals and plans for the future" appeared to tap a general aspect of *goals* of adolescents more than their specific educational *aspirations* or *self-awareness*. For reasons of conceptual clarity, these two aforementioned items were clustered and a new latent variable called *goals* was identified.

The result of the confirmatory factor analysis for the preferred model (Model 4) of RDYM-Internal Assets measure with seven factors for the total sample yielded the following goodness-of-fit indexes: $\chi^2(98) = 224.906$, $p < 0.05$; $\chi^2/df = 2.29$; GFI = 0.97; AGFI = 0.95; CFI = 0.96; RMSEA = 0.039; and SRMR = 0.027. These indexes were regarded adequate to treat the respective observed variable groups as distinct latent variables for the total sample in the structural model. Table 2.17 indicates the standardized Lambda-x estimates, standard errors, t-values, and squared multiple correlations as obtained for each of the observed variables from the confirmatory factor analysis. All parameter estimates were statistically significant ($p < 0.05$). Moreover, all Lambda-x values ranged from .39 to .83 and supported the idea of using these latent variables in the proposed path analytic model to explain the academic achievement of the eight grade students in poverty.

As can be seen from Table 2.17, the first latent variable represented the observed variables related to *empathy* (EMPATHY). Three observed variables were positively and significantly loaded on this latent variable, including RES42 "I feel bad when someone gets their feelings hurt" ($\lambda_x = 0.57$, $p < 0.05$), RES43 "I try to understand what other people go through" ($\lambda_x = 0.63$, $p < 0.05$), RES53 "I try to understand what other people feel" ($\lambda_x = 0.67$, $p < 0.05$). One of the three variables, RES53 accounted for the greatest variance ($R^2 = 0.45$) of the latent variable EMPATHY.

In the second latent variable, the following observed variables were positively and significantly loaded on the *problem solving* (PROBLEM) latent variable: RES44 "When I need help I find someone to talk with" ($\lambda_x = 0.67$, $p < 0.05$), RES45 "I know where to go for help with problem" ($\lambda_x = 0.68$, $p < 0.05$), RES46 "I try to work out problems by talking about them" ($\lambda_x = 0.61$, $p < 0.05$). Among the three variables, RES45 accounted for the greatest variance ($R^2 = 0.47$) of the latent variable PROBLEM.

Table 2.17 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of RDYM-Internal Assets for the Total Sample

Latent and Observed Variables	λ_x	SE	t	R^2
Empathy				
RES42 I feel bad when someone gets feelings hurt	0.57	0.03	15.20	0.32
RES43 I try to understand what others go through	0.63	0.03	16.95	0.40
RES53 I try to understand what other people feel	0.67	0.04	18.10	0.45
Problem Solving				
RES44 When I need help I find someone to talk with	0.67	0.04	18.27	0.45
RES45 I know where to go for help with problem	0.68	0.04	18.75	0.47
RES46 I try to work out problems by talking about	0.61	0.04	16.67	0.37
Self Efficacy				
RES48 I can do most things if I try	0.57	0.03	14.04	0.33
RES50 There are many things that I do well	0.63	0.03	14.96	0.40
Communication and Cooperation				
RES49 I can work someone having different opinions	0.39	0.04	10.20	0.15
RES51 I enjoy working together with others	0.54	0.04	14.12	0.29
RES52 I stand up myself without putting someone down	0.59	0.03	15.42	0.35
Goals				
RES54 There is a purpose to my life	0.66	0.03	17.68	0.44
RES57 I have goals and plans for the future	0.63	0.03	16.90	0.39
Self Awareness				
RES55 I understand my moods and feelings	0.64	0.04	16.54	0.41
RES56 I understand why I do what I do	0.73	0.03	18.30	0.54
Educational Aspirations				
RES58 I plan to graduate from high school	0.79	0.04	21.36	0.62
RES59 I plan to go to college after high school	0.83	0.04	22.27	0.68

Two observed variables, namely RES48 "I can do most things if I try" ($\lambda_x = 0.57$, $p < 0.05$) and RES50 "There are many things that I do well" ($\lambda_x = 0.63$, $p < 0.05$) were loaded positively and significantly on the third latent variable called *self-efficacy* (EFFICACY). RES50 also accounted for the greatest variance ($R^2 = 0.40$) of the latent variable EFFICACY.

In the fourth latent variable, observed variables RES49 "I can work with someone who has different opinions than mine" ($\lambda_x = 0.39$, $p < 0.05$), RES51 "I enjoy working together with other students at my age" ($\lambda_x = 0.54$, $p < 0.05$) and RES52 "I stand up for myself without putting others down" ($\lambda_x = 0.59$, $p < 0.05$) were considered to represent the latent variable named as *communication and cooperation* (COMMUNIC). All three observed variables were positively and significantly loaded on this latent variable. One of the three variables, RES52 accounted for the greatest variance ($R^2 = 0.35$) of this latent variable.

The fifth latent variable called *goals* (GOALS) consisted of two observed variables, namely RES54 "There is a purpose to my life" ($\lambda_x = 0.66$, $p < 0.05$) and RES57 "I have goals and plans for the future" ($\lambda_x = 0.63$, $p < 0.05$). All the aforementioned observed variables were positively and significantly loaded on GOALS and RES54 accounted for the greatest variance ($R^2 = 0.44$) of this latent variable.

Again, two observed variables including RES55 "I understand my moods and feelings" ($\lambda_x = 0.64$, $p < 0.05$) and RES56 "I understand why I do what I do" ($\lambda_x = 0.73$, $p < 0.05$) were loaded significantly and positively on the sixth latent variable called s*elf-awareness* (AWARENES). RES56 also accounted for the greatest variance ($R^2 = 0.54$) of this latent variable.

In the last latent variable, observed variables RES58 "I plan to graduate from high school" ($\lambda_x = 0.79$, $p < 0.05$) and RES59 "I plan to go to college or some other school after high school" ($\lambda_x = 0.83$, $p < 0.05$) were deemed to represent the latent variable named as *educational aspirations* (ASPIRATI). These two observed variables were positively and significantly loaded on the latent variable ASPIRATI. Among observed variables, RES59 accounted for the greatest variance ($R^2 = 0.68$) of the latent variable ASPIRATI.

The results of the confirmatory factor analysis for the preferred optimal model (Model 4) of RYDM-Internal Assets measure with seven factors for both girls and boys groups also provided the strongest support for the model with all seven fit indices. Goodness-of-fit statistics related to the structure of the RYDM-Internal Assets for the total sample and gender groups are presented in Table 2.18. As shown in Table 2.18, all estimated CFA models indicated a satisfactory fit to the data. These indexes were also seemed adequate to treat the respective item groups as distinct latent variables across gender groups in the structural model. The model fit results also indicated that the factor loading patterns do not greatly differ across gender groups and generally similar in magnitude across gender.

Table 2.18 Chi-Square and Goodness-of-Fit Statistics of Estimated RYDM-Internal Assets CFA Models for Total Sample and Gender Groups

Indexes	Total Sample	Girls	Boys
GFI	0.97	0.95	0.96
AGFI	0.95	0.92	0.94
CFI	0.96	0.93	0.96
RMSEA	0.039	0.048	0.038
S-RMR	0.027	0.036	0.033
χ^2	224.906	195.047	158.761
df	98	98	98
χ^2**/df**	2.29	1.99	1.62
P	< 0.05	< 0.05	< 0.05
N	872	439	433

The associated standardized Lambda-x estimates from the confirmatory factor analysis for the RYDM-Internal Assets items for gender groups are presented in Table 2.19. All parameter estimates were statistically significant ($p < 0.05$). All Lambda-x values on the seven associated factors across gender groups ranged from 0.32 to 0.86 and supported the idea of using these latent variables in the proposed path analytic model to explain the academic achievement of the eight-grade impoverished students.

The standardized Lambda-x estimates, standard errors, t-values, and squared multiple correlations as obtained for each of the observed variables from the CFA models estimated for girls and boys groups separately can be seen in Appendix J.

Table 2.19 Standardized Lambda-x Estimates of the Observed Variables of RDYM-Internal Assets Across Gender Groups

Latent and Observed Variables	Girls	Boys
Empathy		
RES42 I feel bad when someone gets feelings hurt	0.47	0.57
RES43 I try to understand what others go through	0.58	0.62
RES53 I try to understand what other people feel	0.69	0.64
Problem Solving		
RES44 When I need help I find someone to talk with	0.63	0.66
RES45 I know where to go for help with problem	0.73	0.68
RES46 I try to work out problems by talking about	0.58	0.63
Self Efficacy		
RES48 I can do most things if I try	0.52	0.58
RES50 There are many things that I do well	0.64	0.64
Communication and Cooperation		
RES49 I can work someone having different opinions	0.32	0.45
RES51 I enjoy working together with others	0.46	0.60
RES52 I stand up myself without putting someone down	0.44	0.64
Goals		
RES54 There is a purpose to my life	0.54	0.75
RES57 I have goals and plans for the future	0.66	0.58
Self Awareness		
RES55 I understand my moods and feelings	0.65	0.63
RES56 I understand why I do what I do	0.71	0.75
Educational Aspirations		
RES58 I plan to graduate from high school	0.85	0.75
RES59 I plan to go to college after high school	0.86	0.76

2.2.2.1.7 Factor Structure Equalities of the RDYM-Internal Assets Across Gender Groups

Considering the aforementioned indices as satisfactory, covariance structure equalities of the seven-factor model were tested across the gender groups by the LISREL 8.30 in the next step. In this analysis, to test whether the seven-factor model holds in both gender groups, covariance matrices obtained among the 17 items in the samples of girls and boys were used. Table 2.20 indicates the Lambda-x estimates for the observed variables of RYDM-Internal Assets, their standard errors with the *t* statistic and squared multiple correlations.

Table 2.20 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations for the Equality of Covariance Matrices for RYDM-Internal Assets

Latent and Observed Variables	λ_x	SE	t	R^2
Empathy				
RES42 I feel bad when someone gets feelings hurt	0.66	0.04	13.39	0.44
RES43 I try to understand what others go through	0.55	0.03	13.72	0.30
RES53 I try to understand what other people feel	0.77	0.04	15.74	0.60
Problem Solving				
RES44 When I need help I find someone to talk with	0.65	0.04	17.73	0.43
RES45 I know where to go for help with problem	0.69	0.04	18.71	0.48
RES46 I try to work out problems by talking about	0.61	0.04	16.37	0.37
Self Efficacy				
RES48 I can do most things if I try	0.56	0.03	13.56	0.31
RES50 There are many things that I do well	0.54	0.03	14.76	0.41
Communication and Cooperation				
RES49 I can work someone having different opinions	0.40	0.04	10.14	0.16
RES51 I enjoy working together with others	0.52	0.03	13.44	0.28
RES52 I stand up myself without putting someone down	0.56	0.03	14.19	0.31
Goals				
RES54 There is a purpose to my life	0.66	0.03	17.07	0.44
RES57 I have goals and plans for the future	0.61	0.03	15.93	0.37
Self Awareness				
RES55 I understand my moods and feelings	0.63	0.04	16.08	0.40
RES56 I understand why I do what I do	.074	0.03	18.07	0.55
Educational Aspirations				
RES58 I plan to graduate from high school	0.85	0.04	22.27	0.73
RES59 I plan to go to college after high school	0.89	0.04	22.94	0.79

The seven-factor model gave the following fit indexes: $\chi^2(249) = 470.459$, $p < 0.05$; $\chi^2/df = 1.89$; GFI = 0.95; CFI = 0.92; RMSEA = 0.045; and SRMR = 0.056. These indexes indicate a reasonable fit of the model to the data except for the SRMR index that is slightly higher than the minimum fit value (SRMR < 0.05). Considering the values obtained from the fit indices as adequate, the researcher decided to continue the analysis with this seven-factor model for the structural equation model.

2.2.2.1.8 Reliability of RYDM-Internal Assets

As shown in Table 2.21, the internal consistencies as estimated by Chronbach alpha for the seven factors of RDYM-Internal Assets were ranged from 0.50 to 0.78 for the total sample, 0.35 to 0.84 for girls, and 0.54 to 0.72 for boys. The overall reliability coefficient for the whole RYDM-Internal Assets was 0.82 for the total

sample, 0.79 for girls, and 0.82 for boys. These results indicated that, although modest, the reliability evidence for RYDM-Internal Assets was reasonably satisfactory.

Table 2.21 Alpha Reliability Coefficients of Latent Variables of RDYM-Internal Assets Across Groups

Latent Variables of RYDM-Internal Assets	Cronbach Alpha Reliabilities		
	Total Sample	Girls	Boys
1. Empathy	.66	.61	.64
2. Problem Solving	.69	.68	.69
3. Self Efficacy	.53	.50	.54
4. Communication	.50	.35	.57
5. Goals	.59	.52	.61
6. Self Awareness	.64	.63	.63
7. Educational Aspirations	.78	.84	.72

2.2.3. Scholastic Competence Scale (SCS)

The adolescent's perception of his/her competence or ability within the realm of scholastic performance was assessed by the 5-item Scholastic Competence Scale of the Self Perception Profile for Adolescents (Harter, 1988) (see Appendix K for the scale). The response format includes both positively and negatively worded phrases, designed to eliminate the "pull" for socially desirable responses: for example, "some teenagers feel that they are pretty intelligent but other teenagers question whether they are intelligent." Harter also introduced a two-step response format whereby the adolescents must first choose the direction and then the intensity of their response. The internal consistency of the scale was 0.81 for a sample of 109 eight-grade students (Harter, 1988). The Harter's Self Perception Profile for Adolescents was adapted to Turkish by Şahin and Güvenç (1996) and statistically significant reliability estimates were reported.

2.2.3.1 Exploratory and Confirmatory Factor Analysis of the Scholastic Competence

Intended for an exploratory factor analysis, five items of Scholastic Competence Scale were analyzed through the principal component analysis in order to investigate

the underlying factor structure. As can be seen from the Table 2.22, results revealed one interpretable factor for the total sample, with an eigenvalue of 1.858, which explained 47 % of the total variance. The EFA results also revealed one interpretable factor for the girls, with an eigenvalue of 1.979, which explained 50 % of the total variance and one factor for boys with an eigenvalue of 1.750, which explained 44 % of the total variance. One item of the scale 'Some teenagers are pretty slow in finishing their schoolwork but other teenagers can do their schoolwork more quickly" was not grouped under scholastic competence dimension in all groups and excluded from the analysis.

Table 2.22 Factor Loadings of the Observed Variables of the Scholastic Competence Across Groups

Observed Variables		**Scholastic Competence**		
		Total sample	Girls	Boys
SC1	Some teenagers feel they are smart as others	.673	.599	.737
SC2	Some teenagers do well at their classwork	.702	.738	.659
SC3	Some teenagers trouble figuring out answers	.676	.750	.570
SC4	Some teenagers feel they are intelligent	.674	.716	.669

In the next step, a confirmatory factor analysis, with one factor, was carried out to assess the fit. The one-factor model for the total sample provided a very good fit to the data. The model fit statistics were as follows: $\chi^2(2) = 2.32$, $p > 0.05$; $\chi^2/df = 1.16$; GFI = 1.00; AGFI = 0.99; CFI = 1.00; RMSEA = 0.014; and SRMR = 0.012. These values indicated that the measurement model was valid and thus accepted to treat the respective observed variables group as a distinct latent variable for the total sample in the structural model.

Table 2.23 shows the standardized Lambda-x estimates, standard errors, t-values, and squared multiple correlations as obtained for each of the observed variables from the confirmatory factor analysis. All observed variables loaded significantly on the latent variable and Lambda-x values indicated reasonable sizes to support the plan of using this latent variable in the proposed structural model for explaining the academic achievement of the eight grade impoverished students.

Table 2.23 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of Scholastic Competence Measure for the Total Sample

Latent and Observed Variables		Lambda-X	SE	t-value	R^2
Scholastic Competence					
SC1	Some teenagers feel they are smart as others	0.52	0.04	12.19	0.27
SC2	Some teenagers do well at their classwork	0.57	0.04	13.19	0.33
SC3	Some teenagers trouble figuring out answers	0.53	0.04	12.37	0.28
SC4	Some teenagers feel they are intelligent	0.52	0.04	12.21	0.27

The results of the confirmatory factor analysis for the model of scholastic competence measure for both girls and boys groups also provided a strongest support for the model with all seven fit indices. Fit statistics related to the structure of the scholastic competence for the total sample and gender groups are presented in Table 2.24. As seen from the table 2.24, the proposed CFA models fit the data well and related fit statistics have also appeared adequate to treat the respective item groups as distinct latent variables across gender groups in the path analytic model. The model fit results also suggested that the factor loading patterns do not greatly differ across gender groups and generally similar in magnitude across gender.

Table 2.24 Chi-square and Goodness-of-Fit Statistics Estimated Scholastic Competence CFA Models for Total Sample and Gender Groups

Indexes	Total Sample	Girls	Boys
GFI	1	1	1
AGFI	0.99	0.99	1
CFI	1	1	1
RMSEA	0.014	0.00	0.00
S-RMR	0.012	0.01	0.01
χ^2	2.322	1.025	0.487
df	2	2	2
χ^2/df	1.16	0.51	0.24
P	> 0.05	> 0.05	> 0.05
N	872	439	433

The standardized Lambda-x estimates of the scholastic competence measure items for gender groups are presented in Table 2.25. All parameter estimates were statistically significant ($p < 0.05$) and standardized loadings indicated reasonable sizes to support the idea of using this latent variable in the proposed structural model for explaining the academic competence of the eight-grade impoverished students.

The standardized Lambda-x estimates, standard errors, t-values, and squared multiple correlations as obtained for each of the observed variables from the CFA model estimated for girls and boys group can be seen in Appendix L.

Table 2.25 Standardized Lambda-x Estimates of the Observed Variables of Scholastic Competence Across Gender Groups

Latent and Observed Variables		Boys	Girls
Scholastic Competence			
SC1	Some teenagers feel they are smart as others	0.64	0.63
SC2	Some teenagers do well at their classwork	0.48	0.43
SC3	Some teenagers trouble figuring out answers	0.38	0.65
SC4	Some teenagers feel they are intelligent	0.51	0.58

2.2.3.2 Factor Structure Equalities of the Scholastic Competence Assets Across Gender Groups

Considering the abovementioned indices as satisfactory, covariance structure equalities of the one-factor model were tested across the gender groups in the next step. In this analysis, to test whether the one-factor model holds in both gender groups, covariance matrices obtained among the four observed variables in the girls and boys samples were used. Table 2.26 indicates the Lambda-x estimates for the observed variables of scholastic competence, their standard errors with the *t* statistic and squared multiple correlations.

Table 2.26 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations for the Equality of Covariance Matrices for Scholastic Competence

Latent and Observed Variables		λ_x	SE	t-value	R^2
Scholastic Competence					
SC1	Some teenagers feel they are smart as others	0.54	0.05	11.93	0.29
SC2	Some teenagers do well at their classwork	0.51	0.04	11.29	0.26
SC3	Some teenagers trouble figuring out answers	0.47	0.05	10.55	0.23
SC4	Some teenagers feel they are intelligent	0.56	0.04	12.32	0.32

The one-dimensional model gave the following fit indexes: $\chi^2(11) = 18.069$, $p>0.05$; $\chi^2/df = 1.64$; GFI = 0.99; CFI = 0.98; RMSEA = 0.038; and SRMR = 0.041. These indexes indicate a very good fit of the model to the data. Consequently, the researcher decided to continue the analysis with this one latent variable model for the path analytic model.

The reliability evidence was also obtained via examining the internal consistency of scholastic competence. The overall Chronbach Alpha coefficient was 0.62 for the total sample, 0.66 for girls, and 0.57 for boys.

2.2.4. Beck Hopelessness Scale

The Beck Hopelessness Scale (BHS) (see Appendix M for the scale) comprises 20 items that reflect hopelessness or pessimism and measures one's negative expectations regarding one's self and one's future (Beck, Weissman, Lester & Trexler, 1974). Items include such statements, as "all I can see ahead of me is unpleasantness rather than pleasantness" and are rated using a true/false format. The total score ranges from 0 to 20, with a high score indicating higher level of hopelessness. The instrument has good internal consistency (KR-20= 0.93) and is highly correlated with other self-report measures of hopelessness (Beck, Weissman, Lester & Trexler, 1974).

The BHS was adapted to Turkish by Seber in 1991 (as cited in Savaşır & Şahin, 1997) and its reliability and validity studies were carried out by Seber, Dilbaz, Kaptanoğlu and Tekin (1993), and Durak (1993, 1994). Regarding the reliability of the BHS, Cronbach Alpha coefficients were 0.86 for 37 depressive patients (Seber, Dilbaz, Kaptanoğlu and Tekin, 1993), 0.85 for a group of 373 normals and psychiatric patients (Durak, 1994). Estimates of internal consistency via the split-half method was reported as 0.85 (Durak, 1994). Additionally, item-total correlations of the scale were examined and the correlations between items and item-total scores were found between 0.07 and 0.72 (Seber, Dilbaz, Kaptanoğlu, & Tekin, 1993) and 0.31 and 0.67 (Durak, 1994), respectively.

Regarding the concurrent validity of the BHS, it's the relationships between the Beck Depression Inventory (BDI) and Rosenberg Self-Esteem Scale (RSES) were examined. The results indicated that the correlation between BHS and BDI was 0.65 while the correlation coefficient between BHS and RSES was 0.55 (Seber, Dilbaz, Kaptanoğlu, & Tekin, 1993). Moreover, the correlation between BHS and BDI was reported in Durak's (1994) study was 0.69 for the whole sample (N=373), 0.71 for the depressive patients, 0.68 for patients with suicidal behaviors, and 0.69 for the control group.

Additional Cronbach Alpha reliabilities were calculated for the present study and the coefficients for BHS were 0.74 for the total sample, 0.76 for girls, and 0.72 for boys.

2.2.5 The Nowicki-Strickland Locus of Control Scale

The Nowicki-Strickland Locus of Control Scale (N-SLCS) (see Appendix N for the scale) originally developed by Nowicki and Strickland (1973) was used to measure the extent to which children or adolescents make external versus internal attributions. In other words, this scale is designed to measure whether or not an adolescent believes that reinforcement comes to them by chance or fate (external locus of control) or because of their own behavior (internal locus of control).

The N-SLCS is a 40-item paper-pencil test using a "Yes-No" response format. Scores range from 0 (internal) to 40 (external) with the higher score indicating greater external orientation. The questions describe reinforcement situations within interpersonal and motivational areas (Powell & Rosen, 1999).

The original scale has established reliability and validity for a generalized expectancy for control in a sample of over thousand elementary and high school students. The results indicated satisfactory reliability for the scale throughout the third through the twelfth grade range. Estimates of internal consistency via the split-half method corrected by the Spearman-Brown Prophesy Formula were: r = 0.63 (grade 3 to 5); r = 0.68 (grade 6to 8); r = 0.74 (grade 9 to 11); and r = 0.81 (grade

12) (Nowicki and Strickland, 1973). Test-retest reliabilities ranged from 0.63 to 0.71 over a 9-month interval for 202 children in the third to the sixth grades (Nowicki & Duke, 1983, as cited in Li & Lopez, 2004).

The N-SLCS was adapted to Turkish by Yeşilyaprak (1988) and the same researcher carried out its reliability and validity studies. Regarding the reliability of the scale, an estimate of internal consistency via the Kuder-Richardson 21 Formula was 0.71 and the test-retest reliability coefficient of the scale was 0.87 (Yeşilyaprak, 1988). The concurrent validity of the N-SLCS was calculated to provide evidence for the validity of the scale by correlating the N-SLCS scores with the internal locus of evaluation and self-esteem subscales of the Turkish version of Personal Orientation Inventory (Shostrom, 1968, adapted by Kuzgun, 1973). The results indicated that the correlation between N-SLCS and self-esteem subscale was 0.58 and between N-SLCS and internal locus of evaluation subscale was 0.40.

Korkut (1986) also carried out a series of reliability and validity studies with elementary school students related to the clustered 19 items of N-SLCS, which is a subset of the scale to enable assessment of children below grade 6. Estimates of internal reliability indicated that Cronbach alpha coefficients were 0.63 for 3rd grade and 0.65 for 5th grade elementary school students. Concurrent validity results showed that the correlation between N-SLCS and Learned Helplessness Scale was 0.31 for 3rd grade and 0.33 for 5th grade elementary school students.

The alpha reliability coefficients, calculated in the present study for N-SLCS, were 0.61 for the total sample, 0.60 for girls, and 0.61 for boys.

2.2.6 Academic Achievement

Grade point averages (GPAs) in 6th, 7th and 8th grades served as observed measures of academic achievement that was used as a dependent latent variable in the structural equation model. In other words, GPAs were the positive (competence) outcome of interest in the present study. Grades reflect learning that takes place

within the larger social context of the classroom and that requires effort and persistence over long periods of time (Wentzel, 1991). Thus, as one of the most important indices of competence, academic achievement was indexed by student grade-point averages.

2.2.6.1 Exploratory Factor Analysis of the Academic Achievement

Regarding the exploratory factor analysis, GPAs of the students in Grade 6, Grade 7, and Grade 8 that were identified as observed variables were analyzed through the principal component analysis in order to check the factor structures. As can be seen from the Table 2.27, results revealed one interpretable factor for the total sample, with an eigenvalue of 2.799, which explained 93 % of the total variance. The EFA results also revealed one interpretable factor for the girls, with an eigenvalue of 2.806, which explained 94 % of the total variance and one factor for boys with an eigenvalue of 2.733, which explained 91 % of the total variance.

Table 2.27 Factor Loadings of the Observed Variables of the Academic Achievement Across Groups

Observed Variables	**Academic Achievement**		
	Total Sample	**Girls**	**Boys**
GPA7	.976	.978	.967
GPA6	.962	.963	.950
GPA8	.960	.961	.947

As shown in Table 2.27, the factor loadings of each observed variable on the respective latent variable indicated very good sizes to support the idea of using academic achievement in the proposed path analytic model as a dependent latent variable.

2.2.6.2 Factor Structure Equalities of the Academic Achievement Across Gender Groups

The covariance structure equalities of the one-factor model were tested across the gender groups by the LISREL 8.30 in the next step. In this analysis, to test whether

the one-factor model holds in both gender groups, covariance matrices obtained among the three observed variables in the samples of girls and boys were used. Table 2.28 indicates the Lambda-x estimates for the observed variables of academic achievement, their standard errors with the *t* statistics and squared multiple correlations.

Table 2.28 Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations for the Equality of Covariance Matrices for Academic Achievement

Latent and Observed Variables	λ_x	SE	t-value	R^2
Academic Achievement				
GPA6	0.93	0.02	35.97	0.86
GPA7	0.98	0.02	39.43	0.95
GPA8	0.92	0.02	35.51	0.85

The one-dimensional model gave the following fit indexes: $\chi^2(6) = 12.989$, $p < 0.05$; $\chi^2/df = 2.16$; GFI = 0.99; CFI = 1.00; RMSEA = 0.048; and SRMR = 0.061. These indexes indicate a reasonable fit of the model to the data, except for the SRMR index that is slightly higher than the minimum fit value (SRMR < 0.05). Considering the values obtained for other indexes as adequate, the researcher decided to continue the analysis with the one-factor model for the structural equation model.

The reliability evidence was also obtained via examining the internal consistency of academic achievement. The Chronbach Alpha coefficients were 0.96 for the total sample, 0.97 for girls, and 0.95 for boys.

2.3 Data Collection Procedure

In November 2002, extensive data related to the low SES inner city neighborhoods in Ankara were obtained from the State Institute of Statistics. Then, extensive and detailed information regarding the schools located in low SES neighborhoods in Ankara were identified with respect to the data obtained by Ankara Directorate of National Education**,** Guidance and Research Centers. Necessary permissions were then obtained from Ankara Governorship (see permission letter in Appendix O) in order to collect data within 6 selected schools in January 2003.

Data collected between March – May 2003 by the researcher and the school counselors of the selected schools together. Data for each student were collected during 45-min class periods, on two consecutive days. Testing of the adolescents was carried out in groups of 40 to 50. Questionnaires were administered in the same order to all the groups (1. Demographic Data Form and RYDM; 2. Nowicki-Strickland Locus of Control Scale, Beck Hopelessness Scale and Scholastic Competence Scale). To ensure maximal participation, an incentive of a pencil was offered as a gift to each student. The GPAs of the students were also collected from the records of 6 elementary schools at the end of the semester in July 2003.

2.4 Analysis of Data

In the present study, exploratory factor analyses, confirmatory factor analyses, and structural equation modeling were used to analyze the data. The statistical analyses were conducted through the following steps:

First, after the data screening was conducted, principal component analyses with varimax rotation were run for the total sample, separately for girls and boys, by using SPSS 11.0 for Windows to explore the factor structures of the questionnaires used in the study.

After the data files were imported from SPSS 11.0 for Windows to PRELIS 2.30 for Windows (Jöreskog & Sörbom, 1999a), the data screening was conducted again in order to obtain the distributions of the variables and to check the normality of the variables.

Then, a nested series of confirmatory factor analysis (CFA) models were estimated in order to determine the latent variables and the "optimal model" for the total sample, separately for the girls and boys by using LISREL (Linear Structural Relations Statistics Package Program) 8.30 for Windows with SIMPLIS Command Language (Jöreskog & Sörbom, 1999b).

Finally, LISREL 8.30 for Windows with SIMPLIS Command Language was used again for the necessary formulation and estimation of the structural equation models including the relationships between external and internal protective factors and academic achievement of eight-grade students in poverty.

For all the statistical procedures performed, the alpha value of 0.05 was established as a level of significance and the maximum likelihood (ML) estimation method was used in all the LISREL analyses.

2.4.1 Structural Equation Modeling

Structural Equation Modeling (SEM) is a comprehensive statistical approach to develop measurement models in order to test hypothesis about relationships or structural equations among the observed and latent variables (Hoyle, 1995; Schumacker & Lomax, 1996).

In order to avoid possible semantic difficulties, basic terms and fundamental issues related to SEM used in the present study are explained below:

a. Observed or Indicator Variables

Observed variables are the directly observable or measured variables (Schumacker & Lomax, 1996). Observed variables typically serve as approximate measures or indicators of latent variables in the general class of structural equation models (Hoyle, 1995) and may be called a manifest variable or, more commonly, an indicator (Kline, 1998).

b. Latent variables

Latent variables are factors or constructs that are not directly observed or measured (Hoyle, 1995) but can be indirectly measured or inferred through observable or measured or indicator variables (Schumacker & Lomax, 1996). A latent variable in a model can be either a dependent latent variable or an independent latent variable. In

other words, any latent variable that is influenced by some other latent variable in the model is called as *latent dependent variable* and any latent variable which is not influenced by some other latent variable in the model is called as *latent independent variable* (Schumacker & Lomax, 1996).

c. Path Diagrams

A path diagram is a diagram that gives the structural relations forming the model and it is quite useful, in practice, to represent models using path diagrams. There is a standard convention that squares and rectangles are used to represent observed variables and circles or ellipses are used to represent latent variables. Directional effects or causal relations between the variables are specified using unidirectional or single-headed arrows. Nondirectional or correlational relationships between variables are represented using bi-directional or two-headed arrows (Hoyle, 1995; Kelloway, 1998).

d. Structural Equation Models

Structural equation models establish the relationships among latent variables or constructs given in a theoretical perspective. The structural equation models are composed of two parts, measurement model and structural model. The measurement model assesses how well the observed variables define the latent variables of interest. On the other hand, the structural model shows the direct and indirect relationships among latent variables. In structural equation models, both the independent and dependent latent-variable measurement models are used and the structural equations specify the relationship between the dependent and the independent latent variables(s) (Schumacker & Lomax, 1996). Moreover, the path diagrams in which the factors are viewed as latent variables are often used in order to diagram the structural equation models (Jöreskog & Sörbom, 1993).

e. Measurement Model

Measurement Model is a confirmatory factor analysis model that treats the latent variables of the structural equation model as common factors with no constraints on the correlations among the factors. This model tests the measurement assumptions, relating the indicators of the structural equation model to the latent variables (Hoyle, 1995). In other words, the measurement model specifies the certain relationships between the observed variables and the latent variables in terms of reliability and validity. These relationships are described on the basis of the factor loadings. Factor loadings give information about the extent to which a specified observed variable is able to measure the hypothesized latent variable and they are used as the validity coefficients while a measurement error serves as a measure of reliability (Schumacker & Lomax, 1996).

In the LISREL measurement model, two CFA models are built, one for exogenous variables and the other for endogenous variables (Maruyama, 1998).

f. Structural Model

The structural model establishes the direct and indirect relationships between and among the latent variables. It indicates the amount of explained and unexplained variance. Hence, structural model shows the extent to which hypothesized relationships are supported by the sample data (Schumacker & Lomax, 1996).

g. LISREL 8.30 with SIMPLIS Command Language

LISREL is one of the first computer programs developed by Jöreskog and Sörbom about 30 years ago to perform structural equation modeling (Kline, 1998). It is currently in its eight version (Jöreskog & Sörbom, 1993).

Although the original programming language for LISREL is based on matrix algebra (Kline, 1998), a new programming language, which is called SIMPLIS, is available

in LISREL 8.30 (Jöreskog & Sörbom, 1993). The SIMPLIS command language has the advantage of moving away from the matrix formulation of the LISREL model and a more national language is used in SIMPLIS language to define LISREL models (Kelloway, 1998). In other words, SIMPLIS programming language requires naming the observed and latent variables and specifying the paths with equation-type statements (Kline, 1998).

There is also a companion program, which is called PRELIS2, to LISREL 8.30. PRELIS2 is designed in order to screen raw data and prepare covariance matrices for analysis with LISREL (Kline, 1998).

h. The Measurement Coefficients

The λ_y (lowercase lambda sub y) and λ_x (lowercase lambda sub x) values indicate the relationships between the latent variables and observed variables. Moreover, these coefficients are referred to as factor loadings and serve as the validity coefficients (Schumacker & Lomax, 1996).

The ε (lowercase epsilon) and δ (lowercase delta) are the measurement errors for Ys and Xs, respectively. They serve as the reliability coefficients (Schumacker & Lomax, 1996).

i. The Structure Coefficients

The β (lowercase beta) values indicate the strength and direction of the relationship among the latent dependent variables (Schumacker & Lomax, 1996).

The γ (lowercase gamma) values indicate the strength and direction of the relationship among latent dependent variables and latent independent variables (Schumacker & Lomax, 1996).

2.4.2 The Stages of Applications of Structural Equation Modeling

There are five stages that characterize the most of the applications of structural equation modeling (Bollen & Long, 1993). These five stages including, model specification, identification, estimation, testing fit, and respecification are explained below in detail.

1. Model Specification

Specification of a model refers to the initial model that formulated prior to estimation and it is the foremost requirement for any form of structural equation modeling. This proposed model is most frequently formulated on the basis of a theory or a review of the research literature in the subject field (Schumacker & Lomax, 1996).

2. Identification

The issue of identification deals with inquiring whether unique values or solution can be found for the parameters to be estimated in the theoretical model (Chou & Bentler, 1998; Schumacker & Lomax, 1996). More specifically, identification concerns whether a single, unique value for each or every free parameter can be obtained from the observed data (Hoyle, 1995). Traditionally, there are three levels of model identification, namely, under-identified (or not identified), just-fitted, and over-identified models. If a model is either just-fitted or over-identified, then it is said that the model is identified (Hoyle, 1995; Schumacker & Lomax, 1996).

3. Estimation

The purpose of estimation is to obtain numerical values for the unknown parameters (Chou & Bentler, 1998). There is a variety of estimation techniques depending on the variable scale and/or distributional property of the variable(s) used in the model (Schumacker & Lomax, 1996). The very common fitting

criteria are ordinary least squares (OLS), generalized least squares (GLS), and maximum likelihood (ML). ML estimation is the default method in many model-fitting programs. Neither of the other estimation options is as widely used as ML estimation. ML estimation works just fine for most types of structural equation models so long as the data have been properly screened and their distributions are reasonably normal (Kline, 1998).

4. Testing fit

Testing fit of the model is related to the interpreting model fit or comparing fit indices for alternative or nested models. There are numerous fit indices or goodness-of-fit criteria (GOF) that indicate whether the data fit the theoretical model (Schumacker & Lomax, 1996).

The fairly widely used Goodness-of-fit criteria for SEM are summarized as follows:

a. Chi-square (χ^2)

A significant χ^2 value, relative to the degrees of freedom, indicates that the observed and estimated matrices differ. This statistical significance shows the probability that the difference between the matrices is related to the sampling variation. On the other hand, a non-significant χ^2 value shows that two matrices are not statistically different (Schumacker & Lomax, 1996). In other words, a non-significant χ^2 value indicates that the model fits the data (Kelloway, 1998). So, obtaining a non-significant χ^2 value with associated degrees of freedom is the main interest of the model fit criteria. But, the χ^2 statistic is sensitive to sample size and, the χ^2 tests have a tendency to indicate a significant probability level when the sample size increases generally above 200 (Schumacker & Lomax, 1996). To reduce the sensitivity of the χ^2 statistics to sample size, it is recommended to divide its value by degrees of freedom (χ^2/df), which results in a lower value and the ratio less than 3 considered as a minimally acceptable value (Kline, 1998).

b. Goodness-of-Fit Index (GFI)

The ratio of the sum of the squared differences between the observed and reproduced matrices to the observed variances is the base of the GFI (Schumacker & Lomax, 1996). Values of GFI theoretically range from 0 (poor fit) to 1 (perfect fit) (Kline, 1998) and the values exceeding 0,9 indicate a good fit to the data (Kelloway, 1998).

c. Adjusted Goodness-of-Fit Index (AGFI)

The AGFI index is the adjusted GFI for the degrees of freedom of a model relative to the number of variables (Schumacker & Lomax, 1996). As GFI, the AGFI has a range from 0 to 1, with values 0.9 indicating a good fit to the data (Kelloway, 1998). The AGFI measure will also provide an index of model parsimony that refers to the number of estimated coefficients required to achieve a specific level of fit (Schumacker & Lomax, 1996).

The fit of two different models with the same data or the fit of models with different data can be compared by using the GFI and AGFI indices (Schumacker & Lomax, 1996). Moreover, values of GFI and AGFI are more standardized and may be less sensitive to sample size than the χ^2 statistic (Kline, 1998).

d. Comparative Fit Index (CFI)

Another commonly used index is CFI, which based on the noncentral χ^2 distributions and measures the improvement in noncentrality in going from researcher's model M_i to M_k (Schumacker & Lomax, 1996). Values of CFI theoretically range from 0 (poor fit) to 1 (perfect fit) and the values exceeding 0.9 indicate a good fit to the data (Kelloway, 1998).

d. Standardized Root-Mean-Square Residual (SRMR)

The SRMR is a standardized summary of the average discrepancy between the observed and predicted (model-implied) covariances (Kline, 1998). In other words, the SRMR is the square root of the mean of the squared differences between the observed and model-implied covariance matrices (Schumacker & Lomax, 1996). The SRMR has a lower bound of 0 and upper bound of 1. When the fit of the model is perfect, the SRMR equals to 0. As the average discrepancy between the observed and predicted covariances increases, so does the value of the SRMR close to 1 (Kline, 1998). For the interpretation of indicating a good fit to the data, values less than 0.05 are generally favorable (Kelloway, 1998).

e. Root-Mean-Squared Error of Approximation (RMSEA)

The RMSEA is computed on the basis of the analysis of residuals and adjusts for degrees of freedom. A test of significance of the RMSEA is provided by LISREL and values of RMSEA less than 0.05 are acceptable to indicate a better fit to the data (Kelloway, 1998).

5. Respecification

One of the more controversial aspects of SEM is respecification, or modification, of a model (MacCallum, 1995). Model modification typically follows estimation of a model that resulted in unfavorable or poor indicators of fit (Hoyle, 1995) and the goal of the model respecification is either improving the parsimony or the fit of the model (MacCallum, 1995).

The most well known of the statistical search strategies make use of the modification index provided by the LISREL program (Hoyle, 1995). On the basis of the modification indices and parameter tests, decisions regarding how to delete, add, or modify paths in the model are made and the new modified model is reassessed again on the same data (Schumacker & Lomax, 1996).

CHAPTER III

RESULTS

The results are presented in three sections. The first section presents the means and the standard deviations of the observed variables. The second section includes findings related to the hypothesized structural equation model for external protective factors of eight-grade students in poverty. In this section, the external protective factors model is estimated and explained for the total sample and for the girls and boys separately.

In the third section, the results of the hypothesized structural equation model for internal protective factors of eight-grade impoverished students are presented. Similar to the external protective factors section, the internal protective factors model is estimated and explained for the total sample, and for the girls and boys separately in this section.

3.1. Descriptive Statistics for the Observed Variables

Descriptive statistics for the observed variables of RYDM external and internal assets, scholastic competence, hopelessness, locus of control, and academic achievement are presented in Table 3.1.

Table 3.1 Descriptive Statistics for the Observed Variables

Latent and Observed Variables	Mean			S.D.		
	Total	**Girls**	**Boys**	**Total**	**Girls**	**Boys**
School Care Relation & High Expect.						
Teacher really cares about me	2.43	2.50	2.36	0.93	0.95	0.90
Teacher tells me when I do a good job	2.79	2.85	2.73	1.04	1.01	1.07
Teacher notices when I'm not there	2.26	2.25	2.28	1.10	1.08	1.12
Teacher always wants me to do my best	3.22	3.26	3.18	0.91	0.90	0.93
Teacher listens to me when I have something	2.95	3.12	2.77	1.03	0.99	1.04
Teacher believes that I will be a success	2.96	3.06	2.85	0.98	0.96	0.99
School Meaningful Participation						
I do interesting activities at school	1.94	2.02	1.86	1.00	1.03	0.98
At school I help decide things like class rules	2.31	2.40	2.22	1.04	1.05	1.03
I do things at school that make a difference	2.24	2.22	2.26	1.04	1.03	1.05
Community Care Relation & High Expect						
Adult really cares about me	2.65	2.76	2.53	1.08	1.05	1.10
Adult tells me when I do a good job	2.92	3.04	2.80	1.01	0.97	1.03
Adult notices when I am upset	2.81	3.00	2.62	1.10	1.08	1.10
Adult believes that I will be a success	2.94	3.06	2.81	1.00	0.96	1.03
Adult always wants me to do my best	3.26	3.38	3.14	0.93	0.88	0.97
I trust an adult outside my home	3.21	3.29	3.14	0.99	0.95	1.02
Community Meaningful Participation						
I am part of clubs or other group activities	1.99	1.78	2.21	1.17	1.07	1.23
I am involved in music or a hobby	2.51	2.46	2.57	1.15	1.16	1.13
Peer Caring Relationships						
Friend really cares about me	2.91	3.13	2.68	1.02	0.97	1.03
Friend talks with me about my problems	2.93	3.22	2.64	1.06	0.98	1.06
Friend helps me when having hard time	3.16	3.31	3.00	0.97	0.94	0.98
Peer High Expectations						
Friends try to do what is right	2.94	3.05	2.82	0.95	0.88	1.00
Friends do well in school	2.67	2.79	2.54	0.97	0.96	0.97
Home Caring Relationships						
Parent is interested in my school work	2.74	2.68	2.81	1.07	1.12	1.01
Parent talks with me about my problems	2.76	2.66	2.86	1.07	1.08	1.06
Parent listens to me when I have something	3.03	3.05	3.01	1.03	1.05	1.02
Home High Expectations						
Parent expects me to follow the rules	3.36	3.37	3.35	0.86	0.87	0.85
Parent believes that I will be a success	3.20	3.25	3.14	0.94	0.93	0.94
Parent always wants me to do my best	3.51	3.57	3.46	0.77	0.73	0.81
Home Meaningful Participation						
I do fun things and go fun places with parent	2.20	2.24	2.16	1.03	1.07	0.98
I do things at home that make a difference	2.54	2.56	2.52	1.01	1.00	1.02
I help make decisions with my family	2.54	2.63	2.44	1.05	1.06	1.03
Empathy						
I feel bad when someone gets feelings hurt	3.16	3.38	2.94	0.92	0.82	0.95
I try to understand what others go through	3.10	3.27	2.92	0.84	0.77	0.87
I try to understand what other people feel	3.00	3.18	2.82	0.89	0.83	0.92
Problem Solving						
When I need help I find someone to talk with	2.97	3.13	2.81	1.03	1.00	1.02
I know where to go for help with problem	2.74	2.81	2.67	1.07	1.05	1.09
I try to work out problems by talking about	2.53	2.64	2.41	1.06	1.08	1.03
Self Efficacy						
I can do most things if I try	3.38	3.45	3.29	0.80	0.77	0.82
There are many things that I do well	3.17	3.23	3,09	0.80	0.75	0.84
Communication and Cooperation						
I can work smo having different opinions	2.66	2.71	2.60	1.00	1.03	0.97
I enjoy working together with others	3.19	3.33	3.05	0.94	0.90	0.96
I stand up myself without putting smo down	3.19	3.42	2.95	0.88	0.77	0.93

Table 3.1 (Continued)

Latent and Observed Variables	Mean			S.D.		
	Total	**Girls**	**Boys**	**Total**	**Girls**	**Boys**
Goals						
There is a purpose to my life	3.36	3.49	3.23	0.86	0.80	0.90
I have goals and plans for the future	3.28	3.44	3.12	0.90	0.83	0.95
Self Awareness						
I understand my moods and feelings	3.03	3.14	2.92	0.94	0.93	0.95
I understand why I do what I do	3.19	3.27	3.12	0.84	0.83	0.84
Educational Aspirations						
I plan to graduate from high school	3.42	3.56	3.28	0.96	0.87	1.02
I plan to go to college after high school	3.08	3.27	2.89	1.12	1.04	1.16
Scholastic Competence						
Some teenagers feel they are smart as others	2.80	2.91	2.69	1.02	1.02	1.01
Some teenagers do well at their classwork	2.70	2.86	2.53	0.99	0.97	0.99
Some teenagers trouble figuring out answers	2.37	2.45	2.29	1.04	1.04	1.03
Some teenagers feel they are intelligent	2.58	2.54	2.62	0.95	0.94	0.96
Hopelessness	6.03	5.48	6.59	3.60	3.51	3.60
Locus of Control	14.25	13.94	14.56	4.47	4.37	4.55
Academic Achievement						
Grade Point Averages in Grade 6	3.13	3.38	2.87	0.80	0.82	0.70
Grade Point Averages in Grade 7	3.26	3.53	2.98	0.80	0.80	0.70
Grade Point Averages in Grade 8	3.41	3.69	3.12	0.77	0.76	0.68

3.2 The Results of the External Protective Factors Models

The following strategy pursued to test the hypothesized structural equation model for external protective factors of the eight-grade impoverished students. The actual structural equation model presented in Figure 1.1 in Chapter 1 was tested for the total sample, as well as for the girls and boys samples separately. The results showed that the estimated equation models specified nine independent latent variables including, S*chool Caring Relationships and High Expectations (SCHCAHI), School Meaningful Participation (SCHMEAN), Community Caring Relationships and High Expectations (COMCAHI), Community Meaningful Participation (COMMEAN), Peer Caring Relationships (PEERCARE), Peer High Expectations (PEERHIGH), Home Caring Relationships (HOMECARE), Home High Expectations (HOMEHIGH), and Home Meaningful Participation (HOMEMEAN)*, respectively and one dependent latent variable namely, *Academic Achievement (ACHIEVE)*. In each model, the estimated relationships were controlled for student's socio-economic (poverty) status by holding the poverty variable constant. In other words, poverty variable was not included in the model.

In addition to the model data fit indexes including χ^2, χ^2/df, GFI, AGFI, CFI, RMSEA, and SRMR, the significance of the paths from independent latent variables to latent dependent variable was also considered with respect to the *t*-test results. Modification indexes were also taken into consideration in order to improve the model data fit.

3.2.1 The External Protective Factors Model for the Total Sample

Firstly, the actual structural equation model presented in Figure 1.1 in Chapter 1 was estimated for the total sample. Modification indexes identified up to three error covariances. Afterwards, three covariance terms were added into the model between the observed variables of RES35 and RES11, RES35 and RES21 and RES37 and RES22 in order to improve the model concerning the highest meaningful modification indices. Significant improvements in model fit of the estimated structural model, as evidenced by the decrease in χ^2 and increases in GFI, AGFI, and CFI were obtained when the error covariances of the aforementioned variables were allowed to be freely estimated. The final SIMPLIS syntax for external protective factors model estimated for the total sample can be found in Appendix P.

Consequently, the goodness-of-fit indices calculated for the model for the total sample provided a good fit to the data. The model fit statistics were as follows: $\chi^2(479) = 1191.86$, $p < 0.05$; $\chi^2/df = 2.49$; GFI = 0.93; AGFI = 0.91; CFI = 0.94; RMSEA = 0.041; and SRMR = 0.041. These values were deemed adequate to interpret the significant relationships between the independent and dependent latent variables.

Figure 3.1 displays LISREL estimates of the parameters in the structural model estimated for the total sample in which the coefficients were in standardized values. Moreover, LISREL estimates of parameters in the structural model of the total sample in which the coefficients were in t-values were also presented in Figure 3.2. Besides, LISREL estimates of parameters in the measurement model of the total sample with coefficients in standardized values and *t*-values were given in Appendix R respectively.

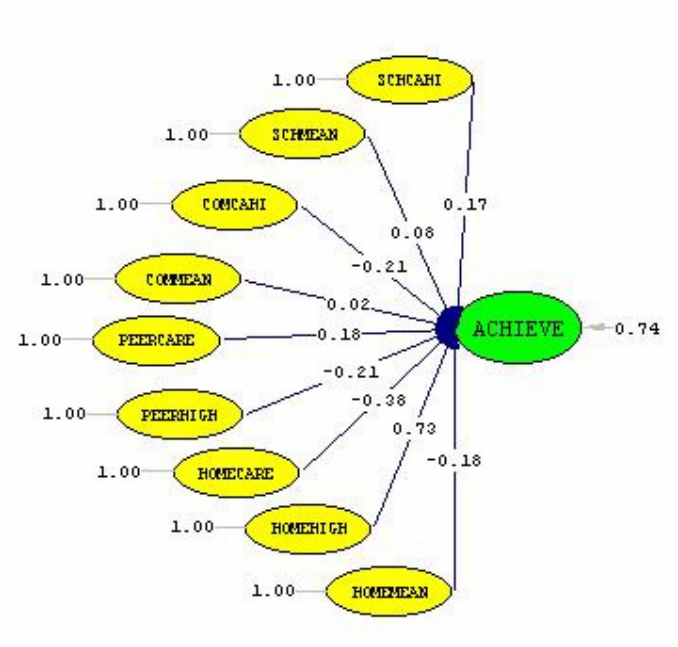

Figure 3.1 LISREL Estimates of the Parameters in the External Factors Structural Model Estimated for the Total Sample (Coefficients in Standardized Values)

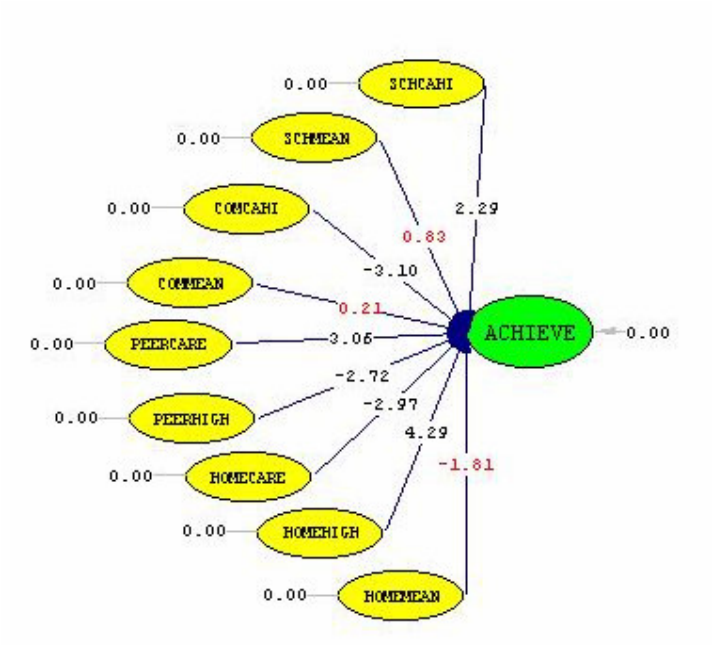

Figure 3.2 LISREL Estimates of the Parameters in the External Factors Structural Model Estimated for the Total Sample (Coefficients in t-Values)

Table 3.2 also presents standardized Lambda-x and Lambda-y estimates, t-values, standard errors and squared multiple correlations for external protective factors model estimated for the total sample.

Table 3.2 Standardized Lambda-x and Lambda-y Estimates, *t*-values, Standard Errors, and Squared Multiple Correlations for External Protective Factors Model for the Total Sample

Latent and Observed Variables		λ	*t*	SE	R^2
School Caring Relationships & High Expectations					
RES6	Teacher really cares about me	0.63 λ_x	18.95	0.03	0.40
RES7	Teacher tells me when I do a good job	0.58 λ_x	17.29	0.03	0.34
RES8	Teacher notices when I'm not there	0.51 λ_x	14.62	0.04	0.26
RES9	Teacher always wants me to do my best	0.60 λ_x	17.72	0.03	0.36
RES10	Teacher listens to me when I have something	0.66 λ_x	20.28	0.03	0.44
RES11	Teacher believes that I will be a success	0.72 λ_x	22.83	0.03	0.52
School Meaningful Participation					
RES13	I do interesting activities at school	0.60 λ_x	16.57	0.04	0.36
RES14	At school I help decide things like class rules	0.66 λ_x	18.45	0.04	0.43
RES15	I do things at school that make a difference	0.66 λ_x	18.56	0.04	0.44
Community Caring Relationships & High Expectations					
RES18	Adult really cares about me	0.69 λ_x	21.40	0.03	0.48
RES19	Adult tells me when I do a good job	0.70 λ_x	21.60	0.03	0.48
RES20	Adult notices when I am upset	0.64 λ_x	19.55	0.03	0.41
RES21	Adult believes that I will be a success	0.67 λ_x	20.24	0.03	0.44
RES22	Adult always wants me to do my best	0.63 λ_x	19.09	0.03	0.40
RES23	I trust an adult outside my home	0.63 λ_x	18.92	0.03	0.39
Community Meaningful Participation					
RES24	I am part of clubs or other group activities	0.55 λ_x	12.57	0.05	0.31
RES25	I am involved in music or a hobby	0.69 λ_x	14.12	0.05	0.47
Peer Caring Relationships					
RES27	Friend really cares about me	0.78 λ_x	25.68	0.03	0.61
RES28	Friend talks with me about my problems	0.84 λ_x	28.37	0.03	0.70
RES29	Friend helps me when having hard time	0.82 λ_x	27.37	0.03	0.67
Peer High Expectations					
RES31	Friends try to do what is right	0.73 λ_x	17.75	0.04	0.54
RES32	Friends do well in school	0.61 λ_x	15.57	0.04	0.37
Home Caring Relationships					
RES34	Parent is interested in my school work	0.67 λ_x	20.52	0.03	0.45
RES36	Parent talks with me about my problems	0.81 λ_x	26.39	0.03	0.66
RES38	Parent listens to me when I have something	0.76 λ_x	24.21	0.03	0.58
Home High Expectations					
RES33	Parent expects me to follow the rules	0.53 λ_x	15.10	0.03	0.28
RES35	Parent believes that I will be a success	0.68 λ_x	20.44	0.03	0.46
RES37	Parent always wants me to do my best	0.67 λ_x	20.14	0.03	0.45
Home Meaningful Participation					
RES39	I do fun things and go fun places with parent	0.57 λ_x	15.46	0.04	0.32
RES40	I do things at home that make a difference	0.65 λ_x	17.98	0.04	0.43
RES41	I help make decisions with my family	0.59 λ_x	16.28	0.04	0.35
Academic Achievement					
GPA6	Grade Point Averages in Grade 6	0.94 λ_y	25.65	0.03	0.87
GPA7	Grade Point Averages in Grade 7	0.98 λ_y	26.66	0.03	0.96
GPA8	Grade Point Averages in Grade 8	0.93 λ_y	25.55	0.03	0.87

As can be seen from Table 3.2, all Lambda-x and Lambda-y values, which are the loadings of each observed variable on a respective latent variable, ranged from 0.51 to 0.93 and all parameter estimates were statistically significant as obtained through *t* values.

Table 3.3 presents the Lowercase Gamma (γ) estimates, which are the coefficients among the latent independent and latent dependent variables and *t*-values.

Table 3.3 Standardized Lowercase Gamma Estimates and t-values for External Protective Factors Model for the Total Sample

Latent Independent Variables	**Latent Dependent Variable**	**γ**	**t**
School Caring Rel. & High Expect.		0.17	2.29
School Meaningful Participation		0.08	0.83
Community Caring Rel. & High Expect.		-0.21	-3.10
Community Meaningful Participation		0.02	0.21
Peer Caring Relationships	& Academic Achievement	0.18	3.06
Peer High Expectations		-0.21	-2.72
Home Caring Relationships		-0.38	-2.97
Home High Expectations		0.73	4.29
Home Meaningful Participation		-0.18	-1.81

As can be seen from Table 3.3 and Figure 3.1, which displays the structural model of the external protective factors for the impoverished eight graders, among the nine paths from external protective factors to academic achievement the paths from s*chool meaningful participation*, c*ommunity meaningful participation*, and *home meaningful participation* to *academic achievement* was found to be non-significant as obtained through t-values.

The significant standardized path coefficients changed between –0.38 and 0.73 in the fitted model for the total sample. Cohen in 1992 (as cited in Schoon, Sacker, & Bartley, 2003) described the effect sizes of the parameter estimates as small (γ=0.10), medium, (γ=0.30), and large (γ=0.50). With respect to these criteria, significant relationships between the six of the nine external protective factors and the level of academic achievement were found. Specifically, the path coefficient from *home high expectations* to *academic achievement* indicated a large effect size. The path coefficients from *community caring relationships and high expectations, peer high expectations,* and *home caring relationships* to *academic achievement*

might be considered as medium effect sizes in the model estimated for total sample. The other two path coefficients from *school caring relationships and high expectations* and *peer caring relationships* to *academic achievement* indicated small effect sizes in the model fitted. These results indicated that external protective factors model estimated for the total sample explained 26 % of the total variance of the *academic achievement* of the 8th grade students in poverty.

When the directions of the relationships were considered, it was observed that *community caring relationships and high expectations* and *home caring relationships* were negatively related with *academic achievement*. Meanwhile, all other four independent latent variables indicated positive relationships with *academic achievement*.

3.2.2 The External Protective Factors Model for Girls

The actual structural equation model presented in Figure 1.1 in Chapter 1 was estimated once more for girls only. As a result of inspecting the modification indexes, five covariance terms were added into the model between the observed variables of RES35 and RES21, RES22 and RES9, RES35 and RES11, RES22 and RES21, and RES27 and RES6. The final SIMPLIS syntax for external factors model estimated for girls can be found in Appendix P. Thus, the goodness-of-fit indices calculated for the model for girls sample provided the following model fit statistics: $\chi^2(476) = 865.49$, $p < 0.05$; $\chi^2/df = 1.82$; GFI = 0.90; AGFI = 0.89; CFI = 0.94; RMSEA = 0.043; and SRMR = 0.050. These indexes indicate a good fit of the model to the data, except for the AGFI index that is slightly lower than the minimum fit value (AGFI > 0.90). These values were considered adequate to interpret the significant relationships between the independent and dependent latent variables. Figure 3.3 displays LISREL estimates of parameters in structural model, estimated for girls in which the coefficients were in standardized values. Moreover, LISREL estimates of parameters in structural model of girls in which the coefficients were in t-values were presented in Figure 3.4. In addition, LISREL estimates of parameters in measurement model of girls with coefficients in standardized values and *t*-values were given in Appendix R respectively.

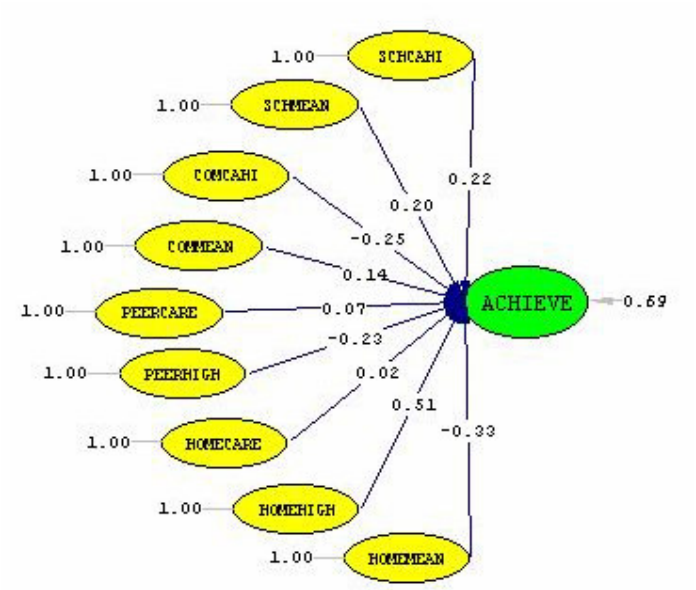

Figure 3.3 LISREL Estimates of the Parameters in the External Factors Structural Model Estimated for Girls (Coefficients in Standardized Values)

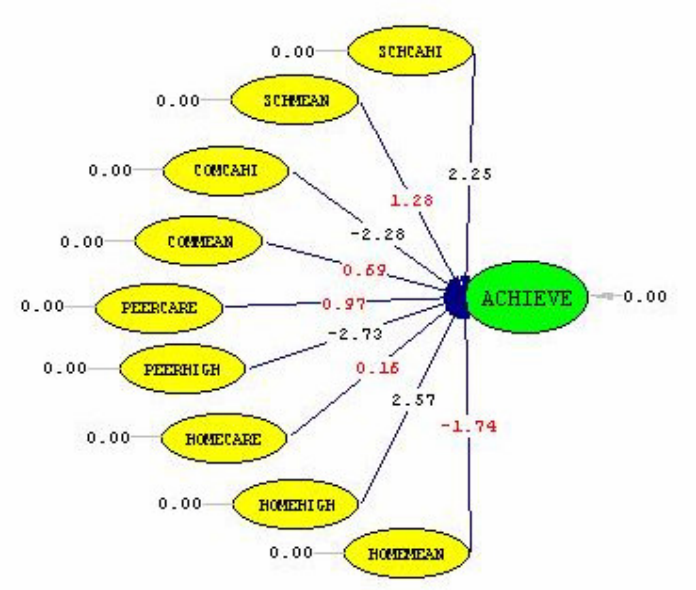

Figure 3.4 LISREL Estimates of the Parameters in the External Factors Structural Model Estimated for Girls (Coefficients in t-Values)

Table 3.4 presents Lambda-x and Lambda-y estimates, t-values, standard errors and squared multiple correlations for external protective factors model estimated for girls.

Table 3.4 Standardized Lambda-x and Lambda-y Estimates, *t*-values, Standard Errors, and Squared Multiple Correlations for External Protective Factors Model for Girls

Latent and Observed Variables		λ	*t*	SE	R^2
School Caring Relationships & High Expectations					
RES6	Teacher really cares about me	0.70 λ_x	15.18	0.04	0.49
RES7	Teacher tells me when I do a good job	0.64 λ_x	13.89	0.05	0.40
RES8	Teacher notices when I'm not there	0.56 λ_x	11.78	0.05	0.31
RES9	Teacher always wants me to do my best	0.58 λ_x	12.66	0.04	0.34
RES10	Teacher listens to me when I have something	0.62 λ_x	13.49	0.04	0.39
RES11	Teacher believes that I will be a success	0.76 λ_x	16.94	0.04	0.58
School Meaningful Participation					
RES13	I do interesting activities at school	0.67 λ_x	13.71	0.05	0.45
RES14	At school I help decide things like class rules	0.68 λ_x	13.90	0.05	0.46
RES15	I do things at school that make a difference	0.61 λ_x	12.30	0.05	0.37
Community Caring Relationships & High Expectations					
RES18	Adult really cares about me	0.63 λ_x	13.36	0.05	0.40
RES19	Adult tells me when I do a good job	0.64 λ_x	13.73	0.05	0.40
RES20	Adult notices when I am upset	0.60 λ_x	12.58	0.05	0.36
RES21	Adult believes that I will be a success	0.66 λ_x	13.97	0.04	0.43
RES22	Adult always wants me to do my best	0.63 λ_x	13.19	0.04	0.39
RES23	I trust an adult outside my home	0.59 λ_x	12.17	0.04	0.35
Community Meaningful Participation					
RES24	I am part of clubs or other group activities	0.57 λ_x	10.31	0.06	0.32
RES25	I am involved in music or a hobby	0.65 λ_x	11.38	0.06	0.43
Peer Caring Relationships					
RES27	Friend really cares about me	0.77 λ_x	18.13	0.04	0.59
RES28	Friend talks with me about my problems	0.86 λ_x	21.44	0.04	0.75
RES29	Friend helps me when having hard time	0.87 λ_x	21.71	0.04	0.76
Peer High Expectations					
RES31	Friends try to do what is right	0.83 λ_x	11.98	0.06	0.69
RES32	Friends do well in school	0.56 λ_x	9.60	0.06	0.32
Home Caring Relationships					
RES34	Parent is interested in my school work	0.68 λ_x	14.91	0.05	0.47
RES36	Parent talks with me about my problems	0.80 λ_x	18.39	0.05	0.65
RES38	Parent listens to me when I have something	0.76 λ_x	17.18	0.05	0.58
Home High Expectations					
RES33	Parent expects me to follow the rules	0.51 λ_x	10.21	0.04	0.26
RES35	Parent believes that I will be a success	0.66 λ_x	14.08	0.04	0.44
RES37	Parent always wants me to do my best	0.64 λ_x	13.35	0.04	0.41
Home Meaningful Participation					
RES39	I do fun things and go fun places with parent	0.58 λ_x	11.21	0.05	0.34
RES40	I do things at home that make a difference	0.59 λ_x	11.52	0.05	0.35
RES41	I help make decisions with my family	0.60 λ_x	11.62	0.05	0.36
Academic Achievement					
GPA6	Grade Point Averages in Grade 6	0.94 λ_y	19.32	0.04	0.88
GPA7	Grade Point Averages in Grade 7	0.98 λ_y	20.21	0.04	0.97
GPA8	Grade Point Averages in Grade 8	0.93 λ_y	19.21	0.04	0.87

As seen from table 3.4, all Lambda-x and Lambda-y values, which are the loadings of each observed variable on respective latent variable, ranged from 0.51 to 0.98. All parameter estimates obtained through *t* values were statistically significant.

Table 3.5 presents the Lowercase Gamma (γ) estimates, which are the coefficients among the latent independent and latent dependent variables and *t*-values.

Table 3.5 Standardized Lowercase Gamma Estimates and t-values for External Protective Factors Model for Girls

Latent Independent Variables	**Latent Dependent Variable**	**γ**	**t**
School Caring Rel. & High Expect.		0.22	2.25
School Meaningful Participation		0.20	1.28
Community Caring Rel. & High Expect.		-0.25	-2.28
Community Meaningful Participation		0.14	0.69
Peer Caring Relationships	& Academic Achievement	0.07	0.97
Peer High Expectations		-0.23	-2.73
Home Caring Relationships		0.02	0.16
Home High Expectations		0.51	2.57
Home Meaningful Participation		-0.33	-1.74

As can be seen from Table 3.5 and Figure 3.3, which displays the structural model of external protective factors of eight-grade girls in poverty, among the nine paths from external protective factors to academic achievement, only the paths from *school caring relationships and high expectations, community caring relationships and high expectations*, *peer high expectations*, and *home high expectations* to *academic achievement* were significant as obtained through t-values. The other five path coefficients yielded non-significant *t*-values.

The significant standardized path coefficients changed between –0.25 and 0.51 in the model estimated for girls. With respect to the Cohen (1992) power primer, significant relationships between the four of the nine external protective factors and the level of academic achievement were found. Specifically, the path coefficient from *home high expectations* to a*cademic achievement* indicated a large effect size. The path coefficients from *community caring relationships and high expectations, peer high expectations,* and *school caring relationships and high expectations* to *academic achievement* indicated medium effect sizes with approximately

similar magnitudes. The external protective factors model estimated for girls explained 31 % of the total variance of the academic achievement of the 8th grade girls in poverty.

When the directions of the relationships were considered, it was observed that *community caring relationships and high expectations* and *peer high expectations* gave negative relationships with *academic achievement*. The other two independent latent variables, namely *school caring relationships and high expectations* and *home high expectations* indicated rather positive relationships with *academic achievement.*

3.2.3 The External Protective Factors Model for Boys

The actual structural equation model presented in Figure 1.1 in Chapter 1 was also estimated for only boys. On the basis of the modification indexes, four covariance terms were added into the model between the observed variables of RES35 and RES11, RES19 and RES7, RES27 and RES18, and RES37 and RES22. The final SIMPLIS syntax for the external factors model estimated for boys can be found in Appendix P. Thus, the goodness-of-fit indices calculated for the model for the boys sample gave the following fit indexes: $\chi^2(478) = 758.26$, $p < 0.05$; $\chi^2/df = 1.59$; GFI = 0.91; AGFI = 0.89; CFI = 0.95; RMSEA = 0.037; and SRMR = 0.043. These indexes indicate a reasonable fit of the model to the data except for the AGFI index that is slightly lower than the minimum fit value (AGFI > 0.90). These values were deemed adequate to interpret the significant relationships between the independent and dependent latent variables.

Figure 3.5 displays LISREL estimates of parameters in structural model, estimated for boys, in which the coefficients were in standardized values. Moreover, LISREL estimates of parameters in the structural model for the boys in which the coefficients were in t-values were presented in Figure 3.6.

Further, LISREL estimates of parameters in the measurement model of boys with coefficients in standardized values and *t*-values were given in Appendix R respectively.

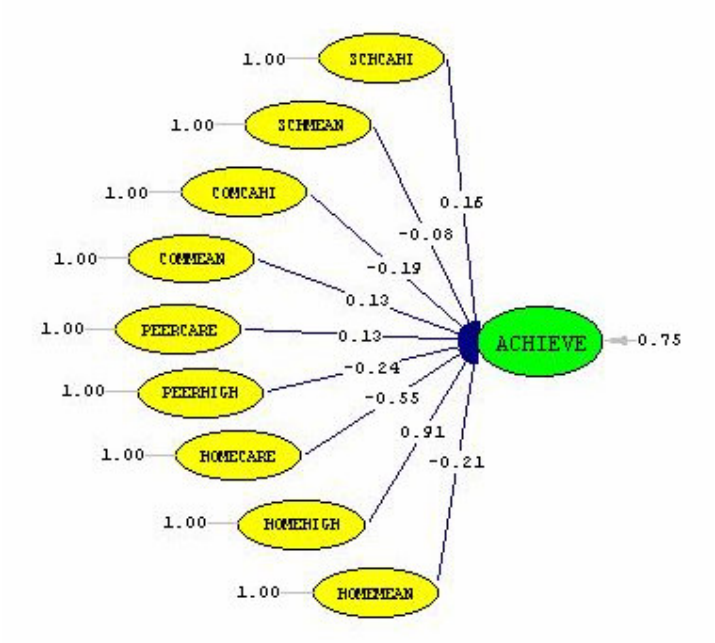

Figure 3.5 LISREL Estimates of the Parameters in the External Factors Structural Model Estimated for Boys (Coefficients in Standardized Values)

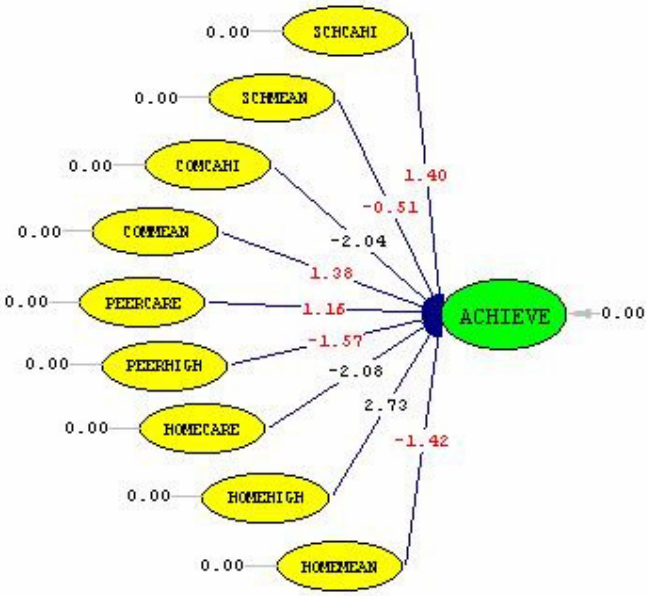

Figure 3.6 LISREL Estimates of the Parameters in the External Factors Structural Model Estimated for Boys (Coefficients in t-Values)

Table 3.6 also illustrates Lambda-x and Lambda-y estimates, t-values, standard errors and squared multiple correlations for external protective factors model estimated for boys.

Table 3.6 Standardized Lambda-x and Lambda-y Estimates, *t*-values, Standard Errors, and Squared Multiple Correlations for External Protective Factors Model for Boys

Latent and Observed Variables		λ	*t*	SE	R^2
School Caring Relationships & High Expectations					
RES6	Teacher really cares about me	0.60 λ_x	12.54	0.04	0.36
RES7	Teacher tells me when I do a good job	0.53 λ_x	11.02	0.05	0.28
RES8	Teacher notices when I'm not there	0.47 λ_x	9.35	0.05	0.22
RES9	Teacher always wants me to do my best	0.61 λ_x	12.63	0.04	0.37
RES10	Teacher listens to me when I have something	0.68 λ_x	14.53	0.04	0.46
RES11	Teacher believes that I will be a success	0.72 λ_x	15.80	0.04	0.51
School Meaningful Participation					
RES13	I do interesting activities at school	0.52 λ_x	10.03	0.05	0.27
RES14	At school I help decide things like class rules	0.61 λ_x	11.99	0.05	0.37
RES15	I do things at school that make a difference	0.74 λ_x	14.74	0.05	0.54
Community Caring Relationships & High Expectations					
RES18	Adult really cares about me	0.72 λ_x	16.37	0.04	0.52
RES19	Adult tells me when I do a good job	0.73 λ_x	16.83	0.04	0.53
RES20	Adult notices when I am upset	0.65 λ_x	14.26	0.05	0.43
RES21	Adult believes that I will be a success	0.68 λ_x	15.10	0.05	0.46
RES22	Adult always wants me to do my best	0.68 λ_x	15.02	0.04	0.46
RES23	I trust an adult outside my home	0.66 λ_x	14.38	0.05	0.43
Community Meaningful Participation					
RES24	I am part of clubs or other group activities	0.54 λ_x	8.23	0.08	0.29
RES25	I am involved in music or a hobby	0.72 λ_x	9.41	0.08	0.52
Peer Caring Relationships					
RES27	Friend really cares about me	0.75 λ_x	16.86	0.05	0.57
RES28	Friend talks with me about my problems	0.80 λ_x	18.05	0.05	0.63
RES29	Friend helps me when having hard time	0.77 λ_x	17.25	0.04	0.59
Peer High Expectations					
RES31	Friends try to do what is right	0.68 λ_x	12.11	0.05	0.46
RES32	Friends do well in school	0.61 λ_x	11.27	0.05	0.38
Home Caring Relationships					
RES34	Parent is interested in my school work	0.66 λ_x	14.31	0.05	0.43
RES36	Parent talks with me about my problems	0.83 λ_x	19.45	0.05	0.69
RES38	Parent listens to me when I have something	0.75 λ_x	16.99	0.04	0.56
Home High Expectations					
RES33	Parent expects me to follow the rules	0.54 λ_x	11.15	0.04	0.30
RES35	Parent believes that I will be a success	0.66 λ_x	14.27	0.04	0.44
RES37	Parent always wants me to do my best	0.71 λ_x	15.34	0.04	0.50
Home Meaningful Participation					
RES39	I do fun things and go fun places with parent	0.58 λ_x	11.35	0.05	0.34
RES40	I do things at home that make a difference	0.71 λ_x	14.04	0.05	0.50
RES41	I help make decisions with my family	0.58 λ_x	11.28	0.05	0.33
Academic Achievement					
GPA6	Grade Point Averages in Grade 6	0.92 λ_y	15.52	0.04	0.84
GPA7	Grade Point Averages in Grade 7	0.97 λ_y	16.07	0.04	0.94
GPA8	Grade Point Averages in Grade 8	0.91 λ_y	15.44	0.04	0.83

As can be seen from table 3.5, all Lambda-x and Lambda-y values, which are the loadings of each observed variable on the respective latent variable, ranged from 0.47 to 0.97. All parameter estimates were statistically significant as obtained through *t* values.

Table 3.7 presents the Lowercase Gamma (γ) estimates, which are the coefficients among the latent independent and latent dependent variables and *t*-values.

Table 3.7 Standardized Lowercase Gamma Estimates and t-values for External Protective Factors Model for Boys

Latent Independent Variables	**Latent Dependent Variable**	**γ**	**t**
School Caring Rel. & High Expect.		0.16	1.40
School Meaningful Participation		-0.08	-0.51
Community Caring Rel. & High Expect.		-0.19	-2.04
Community Meaningful Participation		0.13	1.38
Peer Caring Relationships	& Academic Achievement	0.13	1.16
Peer High Expectations		-0.24	-1.57
Home Caring Relationships		-0.55	-2.08
Home High Expectations		0.91	2.73
Home Meaningful Participation		-0.21	-1.42

As can be seen from Table 3.7 and Figure 3.5, which displays the structural model of external protective factors of the impoverished eight-grade boys, among the nine paths from external protective factors to academic achievement, only the paths from *community caring relationships and high expectations*, *home caring relationships*, and *home high expectations* were significant as obtained through t-values. The other six path coefficients revealed non-significant *t*-values.

The significant standardized path coefficients changed between –0.55 and 0.91 in the estimated model. On the basis of the Cohen (1992) power primer criteria, significant relationships between the three of the nine external protective factors and the level of academic achievement were found. Specifically, the path coefficient from *home high expectations* to *academic achievement* indicated very large effect sizes. Similarly, the path coefficient from *home caring relationships* to *academic achievement* displayed a large effect size. The last path coefficient from *school caring relationships and high expectations* to *academic achievement*

indicated a medium effect size. The external protective factors model estimated for the boys explained 25 % of the total variance of the academic achievement of the 8th grade boys in poverty.

Regarding the directions of the relationships, *community caring relationships and high expectations* and *home caring relationships* had negative relationships with *academic achievement*. The other independent latent variable, namely *home high expectations* indicated a strong positive relationship with *academic achievement*.

3.3 The Results of the Internal Protective Factors Models

The following strategy proceeded in order to test the hypothesized structural equation model for the internal protective factors and academic achievement of eight-grade impoverished students. The actual structural equation model presented in Chapter 1 was tested for the total sample, girls and boys separately. The equation model estimated specified ten independent latent variables including, *Empathy (EMPATHY), Problem Solving (PROBLEM), Self Efficacy (EFFICACY), Communication and Cooperation (COMMUNIC), Goals (GOALS), Self Awareness (AWARANES), Aspirations (ASPIRATI), Scholastic Competence (SCHOLAST), Hopelessness (HOPELESS),* and *Locus of Control (LOCUS)*, respectively and one dependent latent variable, *academic achievement (ACHIEVE)*. Similar to the external protective factors model, in each model, the estimated relationships were controlled for student's socio-economic (poverty) status. In addition to the model data fit indexes including GFI, AGFI, CFI, RMSEA, and SRMR, the significance of the paths from independent latent variables to dependent latent variable was also considered with respect to the *t*-test results. Modification indexes were also taken into account to improve the model data fit.

3.3.1 The Internal Protective Factors Model for the Total Sample

The actual structural equation model presented in Figure 1.2 in Chapter 1 was tested for the total sample with no modifications. The SIMPLIS syntax for internal factors model estimated for the total sample can be found in Appendix S. Consequently, the

goodness-of-fit indices calculated for the model, estimated for the total sample, provides a good fit to the data. The model fit statistics were as follows: $\chi^2(246) = 479.65$, $p < 0.05$; $\chi^2/df = 1.94$; GFI = 0.96; AGFI = 0.94; CFI = 0.97; RMSEA = 0.033; and SRMR = 0.032. These values appeared adequate to interpret the significant relationships among the latent variables.

Figure 3.7 displays LISREL estimates of parameters in structural model estimated for the total sample in which the coefficients were in standardized values. Moreover, LISREL estimates of parameters in the structural model of total sample in which the coefficients were in t-values were presented in Figure 3.8.

Moreover, LISREL estimates of parameters in measurement model of total sample with coefficients in standardized values and *t*-values were given in Appendix T.

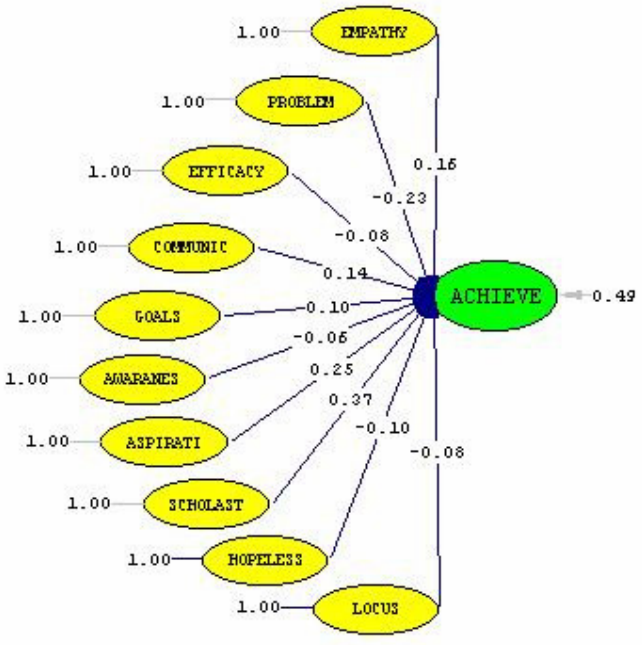

Figure 3.7 LISREL Estimates of the Parameters in the Internal Factors Structural Model Estimated for the Total Sample (Coefficients in Standardized Values)

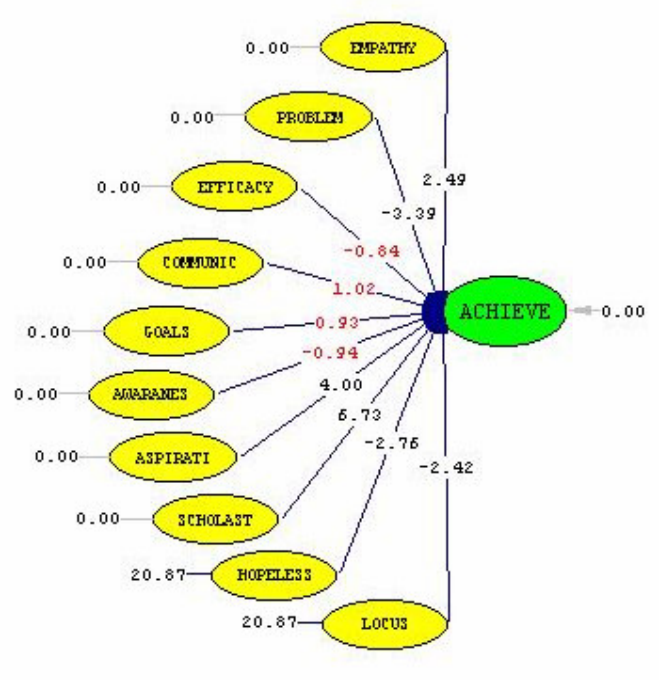

Figure 3.8 LISREL Estimates of the Parameters in the Internal Factors Structural Model Estimated for the Total Sample (Coefficients in t-Values)

Table 3.8 also presents Lambda-x and Lambda-y estimates, t-values, standard errors and squared multiple correlations for internal protective factors model estimated for total sample.

As can be seen from table 3.8, all Lambda-x and Lambda-y values, which are the loadings of each observed variable on the respective latent variable, ranged from 0.38 to 1.00. All parameter estimates obtained through *t* values were statistically significant.

Table 3.8 Standardized Lambda-x and Lambda-y Estimates, *t*-values, Standard Errors, and Squared Multiple Correlations for Internal Protective Factors Model for the Total Sample

Latent and Observed Variables		λ	t	SE	R^2
Empathy					
RES42	I feel bad when someone gets feelings hurt	0.58 λ_x	15.55	0.03	0.33
RES43	I try to understand what others go through	0.64 λ_x	17.22	0.03	0.40
RES53	I try to understand what other people feel	0.66 λ_x	17.94	0.03	0.44
Problem Solving					
RES44	When I need help I find someone to talk with	0.66 λ_x	18.11	0.04	0.43
RES45	I know where to go for help with problem	0.69 λ_x	19.22	0.04	0.48
RES46	I try to work out problems by talking about	0.62 λ_x	16.93	0.04	0.38
Self Efficacy					
RES48	I can do most things if I try	0.57 λ_x	13.97	0.03	0.32
RES50	There are many things that I do well	0.64 λ_x	15.10	0.03	0.40
Communication and Cooperation					
RES49	I can work someone having different opinions	0.38 λ_x	9.95	0.04	0.15
RES51	I enjoy working together with others	0.54 λ_x	14.28	0.04	0.29
RES52	I stand up myself without putting someone down	0.59 λ_x	15.53	0.03	0.35
Goals					
RES54	There is a purpose to my life	0.67 λ_x	18.24	0.03	0.45
RES57	I have goals and plans for the future	0.62 λ_x	17.17	0.03	0.39
Self Awareness					
RES55	I understand my moods and feelings	0.64 λ_x	16.59	0.04	0.40
RES56	I understand why I do what I do	0.74 λ_x	18.61	0.03	0.55
Educational Aspirations					
RES58	I plan to graduate from high school	0.77 λ_x	22.89	0.03	0.59
RES59	I plan to go to college after high school	0.85 λ_x	25.39	0.04	0.72
Scholastic Competence					
SC1	Some teenagers feel they are as smart as others	0.49 λ_x	12.75	0.04	0.24
SC2	Some teenagers do very well at their classwork	0.65 λ_x	17.29	0.04	0.43
SC3	Some teenagers have trouble figuring out answers	0.50 λ_x	12.99	0.04	0.25
SC4	Some teenagers feel they are pretty intelligent	0.47 λ_x	12.26	0.04	0.22
Hopelessness					
Hope	20 items of Hopelessness scale	1.00 λ_x	-	-	1.00
Locus of Control					
Locus	40 items of Locus of Control scale	1.00 λ_x	-	-	1.00
Academic Achievement					
GPA6	Grade Point Averages in Grade 6	0.94 λ_y	28.08	0.03	0.88
GPA7	Grade Point Averages in Grade 7	0.98 λ_y	29.18	0.03	0.95
GPA8	Grade Point Averages in Grade 8	0.93 λ_y	27.95	0.03	0.87

Table 3.9 presents the Lowercase Gamma (γ) estimates, which are the coefficients among the latent independent and latent dependent variables and *t*-values.

Table 3.9 Standardized Lowercase Gamma (γ) Estimates and t-values for Internal Protective Factors Model for Total Sample

Latent Independent Variables	Latent Dependent Variable	γ	t
Empathy		0.16	2.49
Problem Solving		-0.23	-3.39
Self Efficacy		-0.08	-0.84
Communication & Cooperation		0.14	1.02
Goals	& Academic Achievement	0.10	0.93
Self Awareness		-0.06	-0.94
Aspirations		0.25	4.00
Scholastic Competence		0.37	6.73
Hopelessness		-0.10	-2.76
Locus of Control		-0.08	-2.42

As can be seen from Table 3.9 and Figure 3.7, which displays the structural model of the academic achievement of the impoverished eight graders, t-values indicated that, among the ten paths from internal protective factors to academic achievement, the paths from *self efficacy*, *communication and cooperation, goals*, and *self awareness* to a*cademic achievement* were non-significant.

The significant standardized path coefficients changed between –0.08 to 0.37 in the estimated model for the total sample. With respect to the Cohen (1992) power primer criteria, significant relationships between the six of the ten external protective factors and the level of academic achievement were found. Specifically, the path coefficient from *scholastic competence* to a*cademic achievement* indicated a medium effect size. Moreover, the path coefficients from *aspirations* and *problem solving* to a*cademic achievement* seemed to have medium effect sizes in the model estimated for the total sample. The other three path coefficients from *empathy, hopelessness* and *locus of control* to *academic achievement* indicated small effects with various magnitudes. The internal protective factors model estimated for the total sample explained 51 % of the total variance of the academic achievement of the 8th grade students in poverty.

When the directions of the relationships were considered, it was observed that *problem solving, hopelessness* and *locus of control* displayed negative relationships with a*cademic achievement*. All other three independent latent variables indicated rather positive relationships with academic achievement.

3.3.2 The Internal Protective Factors Model for Girls

The actual structural equation model presented in Figure 1.2 in Chapter 1 was estimated only for the girls. Upon inspection of the modification indexes, two covariance terms were added into the model between the observed variables of RES53 and RES42, RES56 and RES52. The final SIMPLIS syntax for the internal factors model estimated for girls can be found in Appendix S. Thus, the goodness-of-fit indices calculated for the model for the girls sample provided the following model fit statistics: $\chi^2(243) = 376.15$, $p < 0.05$; $\chi^2/df = 1.55$; GFI = 0.94; AGFI = 91; CFI = 0.96; RMSEA = 0.035; and SRMR = 0.056. These indexes indicated a good fit of the model to the data, except for the SRMR index that was slightly higher than the minimum fit value (SRMR < 0.05). These values seemed adequate enough to interpret the significant relationships between independent and dependent latent variables.

Figure 3.9 displays LISREL estimates of parameters in the structural model estimated for girls in which the coefficients were in standardized values. Moreover, LISREL estimates of parameters in the structural model of girls in which the coefficients were in t-values were presented in Figure 3.10.

Further, LISREL estimates of parameters in the measurement model of girls with coefficients in standardized values and *t*-values were given in Appendix T.

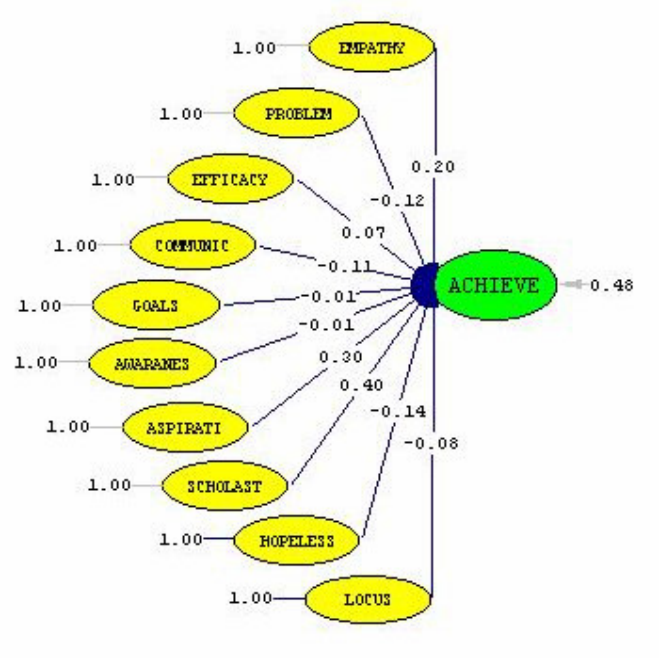

Figure 3.9 LISREL Estimates of the Parameters in the Internal Factors Structural Model Estimated for Girls (Coefficients in Standardized Values)

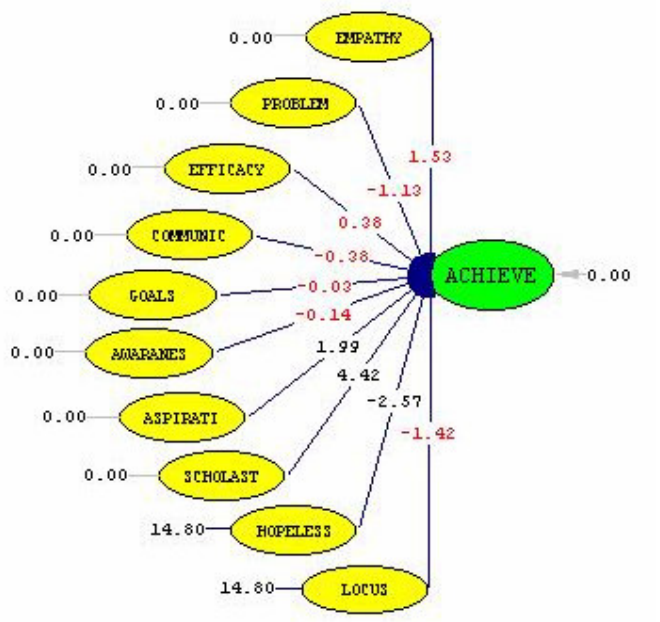

Figure 3.10 LISREL Estimates of the Parameters in the Internal Factors Structural Model Estimated for Girls (Coefficients in t-Values)

Table 3.10 also presents Lambda-x and Lambda-y estimates, t-values, standard errors and squared multiple correlations for internal protective factors model estimated for girls.

Table 3.10 Standardized Lambda-x and Lambda-y Estimates, *t*-values, Standard Errors, and Squared Multiple Correlations for Internal Protective Factors Model for Girls

Latent and Observed Variables		λ	t	SE	R^2
Empathy					
RES42	I feel bad when someone gets feelings hurt	0.58 λ_x	9.26	0.05	0.34
RES43	I try to understand what others go through	0.57 λ_x	10.68	0.04	0.32
RES53	I try to understand what other people feel	0.75 λ_x	12.36	0.05	0.57
Problem Solving					
RES44	When I need help I find someone to talk with	0.62 λ_x	12.01	0.05	0.39
RES45	I know where to go for help with problem	0.73 λ_x	14.04	0.05	0.54
RES46	I try to work out problems by talking about	0.58 λ_x	10.99	0.06	0.34
Self Efficacy					
RES48	I can do most things if I try	0.52 λ_x	8.77	0.05	0.27
RES50	There are many things that I do well	0.64 λ_x	9.87	0.05	0.41
Communication and Cooperation					
RES49	I can work someone having different opinions	0.31 λ_x	5.35	0.06	0.10
RES51	I enjoy working together with others	0.49 λ_x	7.97	0.05	0.24
RES52	I stand up myself without putting someone down	0.42 λ_x	7.17	0.05	0.18
Goals					
RES54	There is a purpose to my life	0.56 λ_x	10.61	0.04	0.32
RES57	I have goals and plans for the future	0.63 λ_x	11.59	0.04	0.40
Self Awareness					
RES55	I understand my moods and feelings	0.62 λ_x	11.09	0.05	0.38
RES56	I understand why I do what I do	0.74 λ_x	12.36	0.05	0.54
Educational Aspirations					
RES58	I plan to graduate from high school	0.83 λ_x	18.84	0.04	0.68
RES59	I plan to go to college after high school	0.88 λ_x	20.31	0.04	0.78
Scholastic Competence					
SC1	Some teenagers feel they are as smart as others	0.42 λ_x	7.86	0.05	0.17
SC2	Some teenagers do very well at their classwork	0.69 λ_x	13.94	0.05	0.48
SC3	Some teenagers have trouble figuring out answers	0.62 λ_x	12.72	0.05	0.38
SC4	Some teenagers feel they are pretty intelligent	0.53 λ_x	10.39	0.05	0.29
Hopelessness					
Hope	20 items of Hopelessness scale	1.00 λ_x	-	-	1.00
Locus of Control					
Locus	40 items of Locus of Control scale	1.00 λ_x	-	-	1.00
Academic Achievement					
GPA6	Grade Point Averages in Grade 6	0.94 λ_y	20.86	0.04	0.88
GPA7	Grade Point Averages in Grade 7	0.98 λ_y	21.75	0.04	0.96
GPA8	Grade Point Averages in Grade 8	0.93 λ_y	20.71	0.03	0.87

As can be seen from table 3.10, all Lambda-x and Lambda-y values, which are the loadings of each observed variable on respective latent variable, ranged from 0.31 to 1.00. All parameter estimates obtained through *t* values were statistically significant.

Table 3.11 presents the Lowercase Gamma (γ) estimates, which are the coefficients among the latent independent and latent dependent variables and *t*-values.

Table 3.11 Standardized Lowercase Gamma Estimates and t-values for Internal Protective Factors Model for Girls

Latent Independent Variables	**Latent Dependent Variable**	**γ**	**t**
Empathy		0.20	1.53
Problem Solving		-0.12	-1.13
Self Efficacy		0.07	0.38
Communication & Cooperation		-0.11	-0.38
Goals	& Academic Achievement	0.01	-0.03
Self Awareness		-0.01	-0.14
Aspirations		0.30	1.99
Scholastic Competence		0.40	4.42
Hopelessness		-0.14	-2.57
Locus of Control		-0.08	-1.42

As can be seen from Table 3.11 and Figure 3.9, which displays the structural model of internal protective factors of the impoverished eight-grade girls, among the ten paths from internal protective factors to academic achievement, only the paths from *aspirations*, *scholastic competence*, and *hopelessness* were significant as obtained through t-values. The other seven path coefficients indicated non-significant *t*-values.

The significant standardized path coefficients changed between –0.14 to 0.40 in the estimated model. With respect to the Cohen (1992) power primer, significant relationships between the three of the ten internal protective factors and the level of academic achievement were found. Specifically, the path coefficients from *scholastic competence* and *aspirations* to *academic achievement* indicated medium effect sizes. The path coefficient from *hopelessness* to *academic achievement* indicated a small effect size in the model estimated for girls. The internal protective factors model estimated for girls explained 52 % of the total variance of the academic achievement of the 8th grade impoverished girls.

When the directions of the relationships were considered, it was observed that *hopelessness* was negatively related with *academic achievement*. The other two independent latent variables, namely *scholastic competence* and *aspirations* were positively associated with *academic achievement*.

3.3.3 The Internal Protective Factors Model for Boys

The actual structural equation model presented in Figure 1.2 in Chapter 1 was estimated only for the boys. On the basis of the modification indexes, two covariance terms were added into the model between the observed variables of RES53 and RES42, and RES56 and RES52. The final SIMPLIS syntax for internal factors model estimated for boys can be found in Appendix S. Thus, the goodness-of-fit indices calculated for the model for boys sample gave the following fit indexes: $\chi^2(243) = 376.15$, $p < 0.05$; $\chi^2/df = 1.55$; GFI = 0.94; AGFI = 0.91; CFI = 0.96; RMSEA = 0.035; and SRMR = 0.056. These indexes indicated a reasonable fit of the model to the data, except for the SRMR index that was slightly higher than the minimum fit value (SRMR < 0.05). As a result, these values were deemed adequate to interpret the significant relationships between independent and dependent latent variables.

Figure 3.11 displays LISREL estimates of parameters in the structural model estimated for boys in which the coefficients were in standardized values. Moreover, LISREL estimates of parameters in the structural model of boys in which the coefficients were in t-values were presented in Figure 3.12.

Moreover, LISREL estimates of parameters in the measurement model of boys with coefficients in standardized values and *t*-values were given in Appendix T.

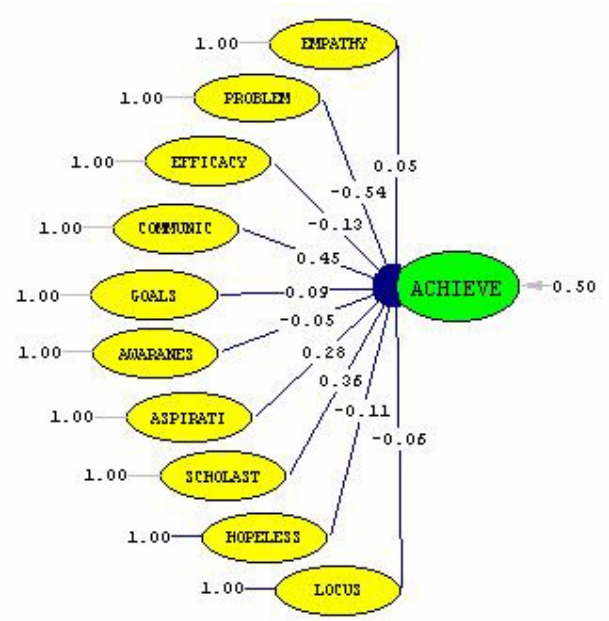

Figure 3.11 LISREL Estimates of the Parameters in the Internal Factors Structural Model Estimated for Boys (Coefficients in Standardized Values)

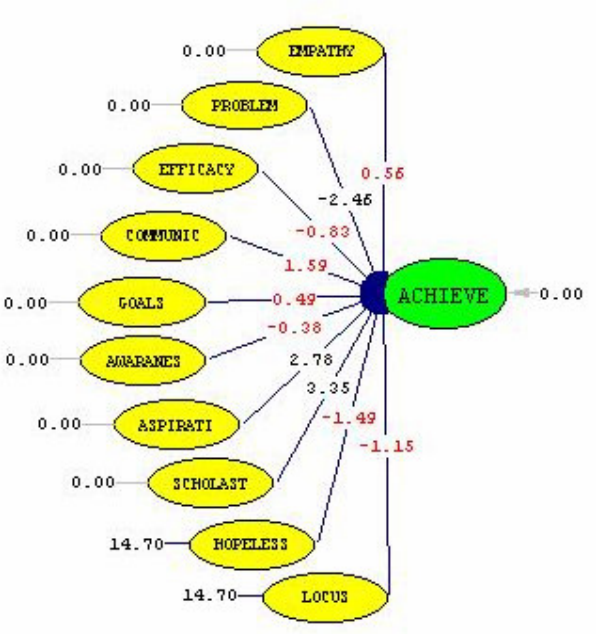

Figure 3.12 LISREL Estimates of the Parameters in the Internal Factors Structural Model Estimated for Boys (Coefficients in t-Values)

Table 3.12 also presents Lambda-x and Lambda-y estimates, t-values, standard errors and squared multiple correlations for internal protective factors model estimated for boys.

Table 3.12 Standardized Lambda-x and Lambda-y Estimates, *t*-values, Standard Errors, and Squared Multiple Correlations for Internal Protective Factors Model for Boys

Latent and Observed Variables		λ	t	SE	R^2
Empathy					
RES42	I feel bad when someone gets feelings hurt	0.57 λ_x	6.92	0.06	0.32
RES43	I try to understand what others go through	0.51 λ_x	8.68	0.05	0.26
RES53	I try to understand what other people feel	0.78 λ_x	11.14	0.06	0.61
Problem Solving					
RES44	When I need help I find someone to talk with	0.56 λ_x	10.42	0.05	0.31
RES45	I know where to go for help with problem	0.58 λ_x	10.98	0.05	0.34
RES46	I try to work out problems by talking about	0.70 λ_x	13.46	0.05	0.49
Self Efficacy					
RES48	I can do most things if I try	0.57 λ_x	10.30	0.05	0.33
RES50	There are many things that I do well	0.65 λ_x	11.30	0.05	0.43
Communication and Cooperation					
RES49	I can work someone having different opinions	0.43 λ_x	8.11	0.05	0.18
RES51	I enjoy working together with others	0.60 λ_x	11.69	0.05	0.36
RES52	I stand up myself without putting someone down	0.65 λ_x	12.70	0.05	0.42
Goals					
RES54	There is a purpose to my life	0.74 λ_x	14.29	0.05	0.55
RES57	I have goals and plans for the future	0.59 λ_x	11.65	0.05	0.35
Self Awareness					
RES55	I understand my moods and feelings	0.62 λ_x	12.04	0.05	0.39
RES56	I understand why I do what I do	0.75 λ_x	14.00	0.05	0.56
Educational Aspirations					
RES58	I plan to graduate from high school	0.73 λ_x	14.53	0.05	0.53
RES59	I plan to go to college after high school	0.78 λ_x	15.40	0.06	0.61
Scholastic Competence					
SC1	Some teenagers feel they are as smart as others	0.58 λ_x	10.21	0.06	0.34
SC2	Some teenagers do very well at their classwork	0.54 λ_x	9.53	0.05	0.29
SC3	Some teenagers have trouble figuring out answers	0.36 λ_x	6.28	0.06	0.13
SC4	Some teenagers feel they are pretty intelligent	0.51 λ_x	8.90	0.05	0.26
Hopelessness					
Hope	20 items of Hopelessness scale	1.00 λ_x	-	-	1.00
Locus of Control					
Locus	40 items of Locus of Control scale	1.00 λ_x	-	-	1.00
Academic Achievement					
GPA6	Grade Point Averages in Grade 6	0.92 λ_y	14.03	0.05	0.84
GPA7	Grade Point Averages in Grade 7	0.97 λ_y	14.37	0.05	0.93
GPA8	Grade Point Averages in Grade 8	0.91 λ_y	13.97	0.04	0.83

As can be seen from table 3.12, all Lambda-x and Lambda-y values, which are the loadings of each observed variable on the respective latent variable ranged from 0.36 to 1.00. All parameter estimates obtained through *t*-values were statistically significant.

Table 3.13 presents the Lowercase Gamma (γ) estimates, which are the coefficients among the latent independent and latent dependent variables and *t*-values.

Table 3.13 Standardized Lowercase Gamma Estimates and t-values for Internal Protective Factors Model for Boys

Latent Independent Variables	Latent Dependent Variable	γ	t
Empathy		0.05	0.56
Problem Solving		-0.54	-2.46
Self Efficacy		-0.13	-0.83
Communication & Cooperation		0.45	1.59
Goals	& Academic Achievement	0.09	0.49
Self Awareness		-0.05	-0.38
Aspirations		0.28	2.78
Scholastic Competence		0.36	3.35
Hopelessness		-0.11	-1.49
Locus of Control		-0.06	-1.15

As Table 3.13 and Figure 3.11 display, which shows the structural model of internal protective factors of the impoverished eight-grade boys, t-values indicated that, among the ten paths from internal protective factors to academic achievement, only the paths from *problem solving, aspirations*, and *scholastic competence* were significant. The other seven path coefficients revealed non-significant *t*-values.

The significant standardized path coefficients changed between –0.54 and 0.36 in the estimated model. With respect to the Cohen (1992) power primer, significant relationships between three out of the ten external protective factors and the level of academic achievement were found. Specifically, the path coefficient from *problem solving* to *academic achievement* indicated a large effect size. The other two path coefficients from *aspirations* and *scholastic competence* to *academic achievement* displayed a medium effect size. The internal protective factors model explained 50 % of the total variance of the academic achievement of the 8th grade impoverished boys.

When the directions of the relationships were considered, it was observed that *problem solving* negatively related with *academic achievement*. The other two independent latent variables, namely *aspirations* and *scholastic competence* revealed positive associations with *academic achievement*.

CHAPTER IV

CONCLUSIONS AND IMPLICATIONS

In this chapter, discussion regarding the results obtained from the statistical analyses is presented in the same order as the results given. In the first section, discussion regarding the academic resilience and the external and internal protective factors for the total sample were presented. Additionally, the discussion of the contribution of the external and internal protective factors to academic resilience across gender was presented in the first section. The second section involves the implications of the present study for practice and recommendations for future research.

4.1 Conclusions

Children and adolescents living in poverty suffer from environmental circumstances, negative life events, and persistent strains that are damaging to their positive development (Buckner, Mezzacappa, & Beardslee, 2003; Duncan, Brooks-Gunn, & Klebanov, 1994; Huston, McLoyd, & Garcia Coll, 1994; Luthar, 1999; McLoyd, 1998). On the other hand, some adolescents function well across multiple indices of competence and manifest resilience despite their at-risk conditions (Buckner, Mezzacappa, & Beardslee, 2003).

The present study aimed at identifying the internal and external protective factors that may play a role in helping low SES students achieve positive outcomes such as academic competence. Focusing on potential assets may provide important information for counselors, teachers, schools, families, community organizations and policy-makers to identify the determinants of resilience and to promote competencies among children and adolescents in poverty.

This preliminary study began with a prediction that academic resilience would be related with several dimensions of internal and external protective factors among adolescents in poverty. In addition, some cultural variations may likely to be observed. Specifically, the structural equation modeling was used testing a series of the related models to examine the relation between internal and external protective factors and academic achievement among eight-grade elementary school students in poverty. The discussion of the findings is presented separately for the total sample and for the gender groups. Different from the way pursued in the presentation of the results, discussion of the findings regarding girls and boys was combined in the same subheading.

4.1.1 Discussion of the Findings Regarding Academic Resilience for the Total Sample

External Protective Factors

Home high expectations were found to be the most important external protective factor in predicting academic resilience. This result strongly supported the findings of the studies conducted by resilience researchers in different settings. For example, Reynolds (1998) reported that parental expectations were the important predictor of sixth-grade resilience and promoted both academic and social resilience outcomes. Moreover, Finn and Rock (1997) found that parents of resilient children differed in the amount of schooling they expected their children to attain and, 72% of the parents expected their children to complete a 2- or 4-year college program or more. It was also reported that the parents of the successful Asian and Asian American children (Chao, 2000) and the parents of academically talented black youth (Prom-Jackson, Johnson & Wallace, 1987) had higher educational aspirations for their children. Thus, as described by Benard (1991), high but realistic expectations within the family seems to work as a protective factor for low SES eight-grade students. As there is no directly analogous academic and/or social resilience study in Turkey, it is difficult to point out whether the results of the study confirms or disconfirms the previous ones. However, the present result indicates that, contrary to the common belief, parental high expectations about adolescents' academic life does not always

seem to operate as a negative factor, at least in the low SES group. This situation might have stemmed from the items measuring realistic expectations and a genuine faith in the ability of the child such as "My parent believes that I will be a success."

As predicted, *school caring relationships and high expectations* was also found influential in increasing academic resilience of the students. This finding indicates that the more the need for recognition, being cared for and being attended were met the more academically resilient the children have become. This finding was consistent with the earlier ones in the literature. It is not surprising to observe that the more the school provides positive, caring and supportive relationships with children as well as having realistic expectancies about the child, the higher the academic resilience of the child is. Resilience literature consistently points out that, caring and supportive teachers are essential for developing academic resilience (Alva, 1991; Benard, 1991; Henderson & Milstein, 1996). Werner and Smith (1992) also reported that caring teachers were one of the extra familial protective factors for resilient adolescents, serving as a mentor and an important role model, within their academic instructor roles, for adolescents who want to succeed. For example, Dryden, Johnson, Howard, and McGuire (1998, as cited in Oswald, Johnson, & Howard, 2003) indicated that students were much more aware of the important roles of teacher for helping disadvantaged children and teachers were shown as the key influences in resilience of these children. Teachers, in this respect, frequently provided critical motivational and informational support (Smokowski, Reynolds, & Bezruczko, 2000). It was also reported that resilient students tend to develop much stronger and more supportive relationships with their teachers than do the non-resilient students. Positive teacher-student relationship found as an important characteristic of students' academic resilience (Borman & Overman, 2004). In addition, resilient students were more likely attend schools where learning was emphasized and students encouraged to do their best (Peng et al., 1991, as cited in Wang, Haertel, & Walberg, 1994). In a similar vein, Benard (1991) reviewed the six research studies and concluded that schools "that establish high expectations for all kids-and give them the support necessary to achieve them-have incredibly high rates of academic success" (p.11).

Similarly, the results indicated that *peer caring relationships* have a positive impact on academic resilience of students. This finding once more indicates that resilient children are the ones whose recognition needs are met and receive consistent stroking from the environment. In other words, these individuals seem to have adequate emotional support in accomplishing their academic tasks. Clark (1991) explained that peers were the most important sources of support after the family. Wang, Haertel, and Walberg (1994) clarified that peer social support provide adolescents a sense of being valued, cared for, and loved. These kinds of peer support assist the development of adolescents as well as protect them against stress. Indeed, results of a recent qualitative study support this idea. Percy (2003) found that the themes emerged from the qualitative investigation of resilient adolescents included "feeling loved", "having friends to count on." The children in this study also reported that their lives were filled with peers and, they looked to their peers for emotional support for friendship while to other adults for assistance with school and homework. Based on the research findings, Steinberg (1996) also pointed out that peer group might be a very powerful determinant of the academic competence than the parents. Johnson et al., (1999, as cited in Oswald, Johnson, & Howard, 2003) found both teachers and students reported that positive peer relationships was an important factor contributing to resilience. Cauce (1986) also found that the peer group has a significant role on students' perceived academic competence and attitude toward school.

One of the results of the study is the negative relationship between *home caring relationships*, *community caring relationships and high expectations* and academic resilience. This result is not surprising because the literature already yielded controversial results regarding this issue. Some research reported a positive relationship (Benard, 1991; Masten & Coatsworth, 1998; Werner & Smith, 1982), some reported negative association between the two variables (Cauce, Felner, & Primavera, 1982) while some indicated no relationship at all (Buckner, Mezzacappa, & Beardslee, 2003; Markstrom, Marshall, & Tryon, 2000; Shumow, Vandell, & Posner, 1999). That is, family emotional support did not appear to operate as a resilience factor associated with better academic performance. It may serve as an important asset contributing to children's emotional well being in home or in

preventing problems that were not tapped by the academically oriented measures (Shumow, Vandell, & Posner, 1999). It may also be the case that adults with low levels of educational and occupational attainment grouped together in neighborhoods serve as poor role models for school achievement (Wilson, 1987, as cited in Shumow, Vandell, & Posner, 1999) for the present study group. This hypothesis was consistent with the research result (Shumow, Vandell, & Posner, 1999) that children are influenced negatively by high proportions of neighbors who have not attained educational and economic success.

In addition, Wang, Haertel, and Walberg (1994) stated that an important risk factor contributing to learning problems encountered by students was the disconnection between schooling experience and family life. Because, students bring to the learning situation a diversity of cultural and language backgrounds and prior knowledge. These differences may be important sources of variation in students' strategy use and in their learning outcomes, especially in inner-city schools serving students from diverse cultural backgrounds (Campione & Armbruster, 1985, as cited in Wang, Haertel, & Walberg, 1994). Actually, the attribution of the academic problems of students to cultural differences between school and home is the basic assumption of cultural difference theory. Villegas and Lucas (2002) stated that

> classrooms are not neutral settings. Learning-whether in or out of school-occurs in a cultural context. Built into this context are subtle and invisible expectations regarding the manner in which individuals are to go about learning. The tacit demands of the conventional classroom are more compatible with the home upbringing of some children than of others. Many white, middle-class children, in particular, find the school experience an extension of the home experience. But, for many students from poor backgrounds, the way life is organized in the typical classroom clashes with the way life is organized in their homes and community (p.43).

Similarly, in his theory of cultural reproduction, Bourdieu (1974, as cited in Aronowitz & Giroux, 1986) stated that schools tend to legitimize certain forms of knowledge, ways of speaking, and ways of relating to the world that capitalize on the type of familiarity and skills that only certain students have received from their family backgrounds and class relations. Students whose families have only a tenuous connection to the dominant cultural capital are at a decided disadvantage.

To conclude, the explanation of these findings might be that these youngsters might have been attended to and cared in their family environment, however the caring pattern in such families might reflect a cultural pattern that would not lead to success in school that generally assume a particular type of socialization. Indeed, the acquired cultural characteristics in low socioeconomic neighborhoods, particularly the home environment, do not help children to adjust and survive successfully in school environment because transfer of what are learned in the home and community environment may not be workable and desirable in the school.

It is important to note that *peer high expectations* had also a negative relationship with the academic resilience of students. The reason of this negative relationship might have stemmed from the items that were supposed to measure peer high expectations. A close inspection of these items imply that statements such as "my friends try to do what is right" and "my friends do well in school" might have failed to measure what was intended to measure. Another reason that may have created this result may be social desirability related with the avoidance of complaining about their peers. This category of the "peer environment" examines what students do together and separate pro-social peers from their antisocial counterparts (WestEd & CDE, 2000). Conversely, Borman and Overman (2004) found that although the peer group relationships were important for adolescent students, the social and academic backgrounds of an elementary student's peers had little to do with his/her chances of achieving resilient academic outcomes. The result of the present study seems to confirm this finding.

On the other hand, the result of the study indicated positive but weak and nonsignificant relationships between *school meaningful participation*, *community meaningful participation* and academic resilience. These findings were consistent with the reports of Finn and Rock (1997) who found that extensive extracurricular participation did not have a direct link to sustained academic achievement among students at risk. It was also reported that community psychosocial resources might play a stronger role in diminishing general problem behaviors (Blyth & Leffert, 1995, as cited in Shumow, Vandell, & Posner, 1999) than in promoting academic performance.

In the present study, when the means of the answers to the observed variables of these two respective latent variables were considered, it may be stated that there is no enough activities or resources for adolescents that may help them to be more academically competent in our schools. Specifically, in the impoverished regions insufficiency of such resources may be even severe. Literature support exists for confirming this speculation. For instance, Dornbusch, Ritter, and Steinberg (1991, as cited in Shumow, Vandell, & Posner, 1999) stated that students who resided in neighborhoods with fewer socioeconomic resources did more poorly in school than did those who resided in neighborhoods with more resources. In addition, Kiraz, Yurdakul, and Kiraz (2002) reported that there are some problems in the development of extracurricular activities in Turkish secondary schools.

In such circumstances, the lack of relationship between both the *school meaningful participation and community meaningful participation* and *academic resilience are not surprising*. Further, it is possible that simply asking whether students participating in some activities or not, may not be sufficiently sensitive to the nature and meaning of the activities to the individual. However, the possibility remains that extracurricular activities may play a role in maintaining a student's sense of identification with school and community (Finn & Rock, 1997).

The results also indicated a negative relationship between *home meaningful participation* and academic resilience. This finding is also expected as the participants live in a poverty area where severe financial restrictions are experienced that prevent "going to fun places and doing fun things" as asked by one of the observed variables.

Internal Protective Factors

When internal factors related with the academic resilience are taken into consideration, students' perceptions of their *scholastic competence* are found to be the most important internal protective factor in predicting academic resilience of low-SES eight-grade students. This result supported the findings of Harter (1982), and Greene and Miller (1996), reporting self-perceptions about one's academic abilities had an influence on academic resilience. Shumow, Vandell, and Posner

(1999) also stated that children with a better sense of academic competence demonstrated better academic performance in the fifth grade. Moreover, it was affirmed that perceptions of academic competence not only predict future academic performance, but also influence academic aspirations, and college attendance positively (Stipek, 1997). Consistently, Catterall (1998) observed that students who were more confident about graduating at the start were also more academically resilient.

As anticipated, higher *educational aspirations* of the students seemed to be the second most important internal protective factor and had a positive impact on the academic resilience. The result supported the studies conducted by resilience researchers (Finn & Rock, 1997; Peng, 1994; Peng et al., 1991, as cited in Wang, Haertel, & Walberg, 1994; Smokowski, Reynolds, & Bezruczko, 2000; Tiet et al., 1998). For example, Cappella and Rhona (2001) examined those of low-SES eight-grade students and found that the students who reported high future educational expectations were more likely to be academically resilient. Finn and Rock (1997) also demonstrated that future academic aspirations predicted later educational performance. Similarly, Newcomb and Bentler (1986) reported that educational aspirations were the most important predictor of high school graduation as well as actual academic achievement. In addition, Tiet and colleagues (1998) indicated that higher educational aspiration was associated with good adjustment in youth at both high and low level of adverse life events. As explained by Tiet and colleagues, higher educational aspiration might have served as a goal and a motivator for adolescents, and might have provided them with a sense of meaning and purpose in their lives as well as promoting a sense of hope (Tiet et al., 1998).

The result showed a negative but significant relationship between *problem solving* and academic resilience. As illustrated in the definitions of the terms section, problem-solving ability involves ability to plan, to be resourceful, to think critically and reflectively and to creatively examine multiple perspectives before making a decision and taking action (WestEd & CDE, 2000). In many western cultures, specifically in the middle class, examining a multiple perspective about the problem appears to be a very important aspect of the problem solving skills. Thus, there

arises a general belief or an attitude that problems may be solved if they are discussed with a trustable person. This trustable source is usually the adults for adolescents and/or mental health professionals for both the adults and the adolescents. The items of the instrument used in the present study appear to reflect this western attitude toward problem solving that are measured by the following items: "When I need help, I find someone to talk with"; "I know where to go for help with a problem" and "I try to work out problems by talking or writing about them". In all these items the western assumption that involves the magical power of talking and seeking help from a trustable adult in solving the problems seems evident. Yet again, another inherent assumption in these statements is the notion that if an adolescent finds an adult to talk over a problem this adult will be capable to contribute to the resolution of the problem perhaps by helping the adolescent to see the bigger picture and gaining further insight into the problem. In fact, taking the characteristics of the adults in the present sample that the adolescent talks or goes for help into consideration, it is quite unlikely that the adults in the present sample should have such communication skills and therefore capable of suggesting a workable solution to the problem. Stating differently, the way the adults in the present sample deal with solving a problem may be functional in the immediate environment but dysfunctional at school.

It has been suggested that social support maximizes the probability that an individual will use problem-solving techniques to overcome difficulties (Licitra-Klecker & Waas, 1993; Markstrom, Marshall, & Tyron, 2000). Caring relationships in family and community, and problem solving that shared the variability in the explanation of academic resilience may be indicative of the possibility that use of social support from family and community may affect the problem solving ability of students in the present study. This view is supported by the idea that adults with low levels of educational and occupational attainment grouped together in neighborhoods serve as poor role models for school achievement (Wilson, 1987, as cited in Shumow, Vandell, & Posner 1999).

Empathy, which refers to understanding and caring about another's experiences and feelings, found to be another internal protective factor and had a positive impact on

the academic resilience in the present study. Other researchers also found that specific empathy skills in kindergarten children (Izard et al., 2001) and in 8- to 9-year-old girls (Feshbach & Feshbach, 1987) were correlated strongly to the academic success that the children achieved two years later. In her definitional study, Reynolds (1982, as cited in Omdahl, 1995), proposed three key categories of empathy description: emotional empathy (sharing the emotion of another person), cognitive empathy (using higher mental processes for perspective taking and role taking), and the combinations of emotional and cognitive empathy. Likewise, according to the three-component model proposed by Feshbach (1975), the empathic response is expressions of two cognitive components –the ability to distinguish affect cues in others, and the ability to assume the point of view of another individual, as well as the third component of experiencing affect. Hence, this model proposed that cognitive skills are directly occupied with empathy and become an important element contributing to an anticipated relation between measures of empathy and measures of cognitive competence through social understanding and role taking manifesting better reading skills (Feshbach & Feshbach, 1987). It may also stated that better social competence and understanding of the teachers' perspective, as well as those of the classmates, ought to facilitate more responsiveness in learning situations and thereby greater achievement in the acquisition of school-taught skills. Moreover, Feshbach and Feshbach (1987) also pointed out that the developmental relations between empathy and cognitive functioning suggest that empathy may be conceived of as a coping skill that the adolescents use in adapting to the school environment.

The results also indicated, although having a low effect size, a significant negative relationship between *locus of control* scores, with a high score indicating greater external orientation, and academic resilience. This finding indicates that as the students' beliefs about their ability to control their life increase, they become more likely to be successful in the academic arena. Contrary to the common belief those Turkish individuals predominantly have external locus of control orientation (Mocan-Aydın, 2000), the result of the present study was surprisingly consistent with the findings of the western research. In particular, resilience research states that, believing one has control over one's fate positively predicts academic

achievement among middle and high school students. (Alva, 1991; Connell, Spencer, & Aber, 1994; Novick, Cauce, & Grove, 1990, as cited in Cappella & Rhona, 2001; Peng et al., 1991, as cited in Wang, Haertel, & Walberg, 1994; Werner & Smith, 1992). Similarly, Finn and Rock (1997) stated that a greater sense of control over one's life is a characteristic of low-SES minority students who succeed in school. Cappella and Rhona (2001) also reported that low-SES eight-grade students who reported a higher internal locus of control were more likely to be academically resilient.

Moreover, it is striking that the result regarding locus of control was also consistent with the findings of earlier Turkish studies carried out with 3rd and 5th grade (Korkut, 1991) and 6th grade (Başal, 1997; Gündüz, 1986) elementary school students. These researchers reported that successful students had internal locus of control orientations like their western peers. Moreover, Dönmez (1986) stated that students having high internal locus of control were more likely ready to take responsibility of their lives than those having external locus of control orientation.

Another weak and negative relationships found between *hopelessness* scores, with a high score indicating higher level of "hopelessness and pessimism" and academic resilience. The result indicated that the low SES adolescents had more positive expectations regarding their self and their future, which, in turn, had a positive influence on their academic resilience. This finding was consistent with the resilience research that showed adolescents were more hopeful about their abilities to generate good outcomes for themselves and others (Kumpfer, 1999).

On the other hand, non-significant relationships between *self-efficacy, communication and cooperation, goals,* and *self-awareness* and academic resilience were found. One explanation of this result might be that the measures of the aforementioned four independent latent variables may in fact be alternative indices of social competence rather than the academic competence.

In conclusion, despite its limitations, the findings of the present study suggest that *home high expectations*, *school caring relationships and high expectations*, along

with the *peer caring relationships*, appear to be the prominent external protective factors that predict academic resilience for the adolescents living in poverty. Moreover, when the internal protective factors are taken into account, *having positive self-perceptions about one's academic abilities*, *high educational aspirations*, *having empathic understanding*, *internal locus of control* and *being hopeful for the future* seem to be positively linked with the academic resilience of adolescents in poverty.

Conversely, the external factors of *home caring relationships*, *community caring relationships and high expectations*, and *peer high expectations*, and internal factor of *problem solving skills* were found to be negatively linked with academic resilience. These factors seem to be vulnerability factors for impoverished Turkish adolescents although they are generally accepted as the protective ones.

4.1.2 Discussion of the Findings Regarding Academic Resilience Across Gender Groups

External Protective Factors

Home high expectations were the only positively related common external protective factors with the academic resilience of both boys and girls. On the other hand, *community caring relationships and high expectations* was the only common external protective factor that negatively related with the academic resilience for both gender. This finding is inconsistent with the findings of the western literature. For instance, Cauce, Felner, & Primavera (1982) reported that high levels of informal support were negatively associated with academic performance in disadvantaged inner-city males. Similarly, while direct associations between neighborhood characteristics and academic outcomes among African-American boys were found, such relationships were not observed in girls (Connell et al., 1995).

Meanwhile, *school caring relationships and high expectations,* was the second important positively related protective factor significantly predicting academic resilience of the girls. It is generally believed that girls excel boys in verbal ability and relationship skills. In other words, they are more relational than the boys. They

also are forced to have more responsibilities in the home regarding the household duties. As a result, it appears that girls make use of the school as a social environment where they can use their verbal and communication skills and perform their relational attitude by interacting with teachers. In other words, girls, by nature, seem to be establishing better caring relationships at school, which in turn, may promote their academic resilience. Besides, their socially responsible behavior learned at home can help create a classroom environment that is conducive to instruction and learning. In fact, behaving in socially responsible ways may also be a valued educational outcome in its own right (Wentzel, 1991) that sets the stage for academic resilience.

However, the results also showed that *peer high expectations* were negatively related with academic resilience of the girls while *home caring relationships,* significantly but negatively associated with the academic resilience of boys. It is again probable that this result may have been affected by social desirability related with the avoidance of complaining about their peers.

The finding regarding the negative relationship between *home caring relationships* and academic resilience appears to be consistent with the controversial results obtained in the literature. Some investigators found positive links between adolescents' perceptions of family cohesion and their adjustment across diverse indices (Felner, Aber, Primavera, & Cauce, 1985), while others yielded contrasting results (Juarez et al., 1997, as cited in Luthar, 1999; Weist et al., 1995).

However, several external protective factors revealed no relationship with academic resilience of both gender groups. These were *school meaningful participation*, *community meaningful participation*, *home meaningful participation*, and *peer caring relationships*. Since the discussion of similar findings, except peer caring relationship that revealed non-significant relationship with academic resilience across gender, was already presented in the interpretation of the results regarding the total sample, this issue will not be addressed further.

On the other hand, one may think that the non-significant relationship between *peer caring relationship* and academic resilience across gender might have been affected by the gender role stereotypes of the participants. It is also quite likely that this result might have stemmed from a technical issue of treating both gender groups jointly in the statistical procedures.

Internal Protective Factors

Scholastic competence, educational aspirations and *hopelessness* were found to be the most important individual characteristics that significantly predict the academic resilience of girls. These expected findings were in theoretically expected direction and discussed under the discussion regarding the interpretation of the findings for the total sample. Thus, only the results that showed divergence across gender will be discussed here.

The results indicated that, like girls, *scholastic competence* and *educational aspirations* were found to be the most important internal assets that significantly and positively related to academic resilience of boys. However, *problem-solving* skills was linked negatively to the academic resilience of boys. This discrepancy between girls and the boys are supported by the other findings of the study. As mentioned previously, a negative relationship between *home caring relationships, community caring relationships and high expectations* and academic resilience of boys were found. On the other hand, problem-solving items of the RYDM, in a way, appear to measure whether the child has an ability using any supportive relationship at home and in community. Thus, these two findings seem to be coinciding with one another and once more indicate that being exposed to the role models in the family and community appears to be more viable for boys.

On the other hand, several internal latent variables revealed no relationship with academic resilience in both gender. These were *self-efficacy, communication and cooperation, goals, self-awareness*, *locus of control* and *empathy*. Discussion of similar findings, except locus of control and empathy that revealed non-significant relationship with academic resilience across gender, was already presented in the interpretation of the results regarding the total sample.

In conclusion, in spite of its limitations, the findings of the present study suggest that external protective factor of *home high expectations*, and internal protective factors of *scholastic competence* and *high educational expectations* appear to be the important protective factors that predict academic resilience for both adolescent girls and boys living in poverty. In addition, external protective factor of *school caring relationships and high expectations*, and internal protective factor of *being hopeful for the future* seem to be significant protective factors only for the girls.

On the contrary, *community caring relationships and high expectations* were negatively related with academic resilience for both boys and girls. Moreover, the external factors of *home caring relationships* for boys, and *peer high expectations* for girls were negatively associated with academic resilience. Similarly, the internal factors of *problem solving* skill seem to be a vulnerability factor only for the boys.

4.2 Implications and Recommendations

A resilience framework suggest three major strategies for planning prevention and intervention programs for counselors, educators, program designers, and policy makers to consider (Masten, 1994; Masten & Powell, 2003; Masten & Reed, 2002): The first one is *risk-focused strategies* which seek to reduce or remove exposure to adversity. The second basic approach is related to *asset-focused strategies*. These strategies inquire about to provide more or better assets in the lives of children or try to increase the accessibility to those resources for the development of competence and resilience. The last one is *process-focused strategies* that aim to improve protective processes by mobilizing the most powerful adaptational systems for children and adolescents including individual, family, school, and community and their interactions with each other.

For the reason of using "additive model" whi ch is explained in Chapter 1, the implications of present study mostly cover asset–focused and process-focused strategies which attempt to reduce the negative consequences of living in poverty by increasing the level of resources, improving access to resources, and mobilizing protective processes.

One of the most straightforward implications of the present study for counseling practice is that counselors in school may assist students at-risk by providing individual and group counseling to improve the student's coping and social skills as well as their self-regulatory processes. School counselors may also develop age-appropriate guidance activities to teach students resiliency skills. These programs may include mentoring, social and/or life skills training, career development education, and substance abuse prevention. There are numerous resources (Brown, D'emidio-Caston, & Benard, 2001; Fraser, 1997; Greene, 2002; Henderson, Benard, & Sharp-Light, 2000; Joseph, 1994; Katz, 1997; Kelly, Berman-Rossi, & Palombo, 2001; Krovetz, 1999; Norman, 2000; Richman & Fraser, 2001; Thomsen, 2002) in the literature that guide school counselors who desire to foster the resilience skills of at-risk students.

Mentoring may be a common approach for reaching out at-risk students. Mentors serve as the fundamental support source for children at risk as a result of poverty, trauma, substance abuse, or other negative life events (Christiansen & Christiansen, 1997). Despite the lack of ultimate research on its effectiveness, there were some mentoring programs such as "The Big Brother/Big Sister" projects (Masten, 1994; Royse, 1998) that used mentors for at-risk youths to improve academic achievement, prosocial behavior and self-esteem.

Solution-focused counseling may be another approach to deal with students at risk. It was stated that solution-focused counseling is helpful with adolescents with conduct, coping, academic, social, and substance use or abuse problems (Rak & Patterson, 1996). The basic orientation of this counseling approach is positive and dependent upon the strengths of the students (Downing & Harrison, 1992). This orientation is parallel to the viewpoint of resilience that emphasizes preventive activities stemming from a "strengths" perspective to promote competencies among at-risk students.

The assumptions of solution-focused approach emphasize that positive changes will take place; that every problem is identifiable and can be transformed into solutions; that small changes have ripple effect that expand into larger changes; and every

clients have the ability to resolve their difficulties (Sklare, 1997). With this approach, school counselors not only help students to solve their problems, but also teach and model behaviors that increase their problem solving ability which was found to be negatively linked with academic resilience in the present study. In addition, Doğan (2000) pointed out the value of using solution-focused counseling strategies in Turkish schools.

It was also acknowledged that if a child's major risk comes from the family system, many of the identified protective factors would have roots in the school or community environments. Likewise, when a child's main risk lies in the community system, the role of protective factors generally examined in the family and school environments for the development of resilience processes (Benard, 1991).

In the present study, the sample did not only grow up in poor families but also reside in poor neighborhoods or community. Accordingly, the role of protective factors in their school environment appears crucial for the development of academic resilience. Moreover, a substantial body of research has emerged signifying that the school plays an essential role in fostering resilience among students at-risk (Borman & Overman, 2004; Felner, Aber, Primavera, & Cauce, 1985; Posner & Vandell, 1994; Wang, Haertel, & Walberg, 1994; Werner & Smith, 1992).

Rutter (1979, as cited in Benard, 1991) reported that within the same extremely poor areas of London, some schools showed significant differences in rates of delinquency, behavioral disturbance, attendance and academic achievement. Furthermore, the successful schools appeared to share firm characteristics including, an academic emphasis, teacher's clear expectations and regulations, high level of student participation, and diverse alternative resources such as library facilities, vocational work opportunities, art, music, and extra-curricular activities.

Schools may aid in the development of resilience in adolescents who have impoverished home and stressful family lives through producing a variety of opportunities to ensure that all students may found something they were involved in and could achieve something. For example, structured, quality after-school programs

or activities may supply these opportunities in order to enhance students' prosocial behavior. In addition, the after-school programs may help adolescents to develop interpersonal skills; social problem solving skills, emphatic understanding, positive peer relationships, cultivated high self-esteem, higher expectations, and positive self-perceptions among the adolescents in poverty. The creative art activities may also let the students to discover their creative abilities to build their sense of self-confidence and self-esteem.

Literature also indicated that participation in after-school programs that include academic, recreational, and remedial activities was associated with academic resilience and positive social/emotional development (Huston, McLoyd, & Garcia Coll, 1994). Moreover, particular relationships, exclusive opportunities, acquired interests, and hobbies in school can all create opportunities for positive adaptation and change (Werner, 1989).

High academic standards were also appeared to be protective and related with academic resilience. It is believed that children from impoverished and stressful homes need high standards, not low standards (Bulletin 875-99, 2002). The findings of the present study confirmed this view and showed that high expectations from schools significantly and positively related with high academic resilience. In addition, Wang, Haertel, and Walberg (1994) posited that mentoring programs, cooperative learning programs, cross-age tutoring, use of small learning groups and extracurricular activities may provide mechanisms for adolescents to develop positive peer relationships and stronger support networks that serve as a protective process to foster academic resilience. Moreover, by providing opportunities in school for students, internal assets for resilience such as problem-solving skills, autonomy, self-esteem, a purposeful, constructive and optimistic outlook toward future, effective communication and relationship skills may be developed.

The literature on increasing academic competencies of at-risk students presents excellent examples of how schools may help promote resilience. For example, Henderson and Milstein (1996) in their books called "*Resiliency in Schools: Making*

It Happen for Students and Educators" proposed such a model that explain the characteristics of schools that foster resilience in students and how the resilience processes take in place in action.

Alternative school programs, such as Child Friendly Schools (MoNE & UNICEF, 2002) may be an important start to develop the resources of impoverished public schools in Turkey. As shown in the present study, poor adolescents do not get much academic and social support outside of their schools. This means that the impoverished public schools are also at-risk and they must change in fundamental ways if they want to accurately meet students' needs (Weiner, 1993, as cited in Martinek & Hellison, 1997).

Furthermore, the importance of teacher in the school environment is clear and teacher support should not be underestimated. It is important for teachers to have high but realistic expectations and standards for their students without exhibiting a harsh attitude towards their students. In particular, they should manifest a caring, warm and soothing attitude in their encounters with their students. In their study of public and private high schools, Coleman and Hoffer (1991, as cited in Wang, Haertel, & Walberg, 1994) point to the role of caring and engaging teachers in helping high school students to develop the values and attitudes necessary for preserving in their school work and achieving academically. They stressed the importance of the personal relationship among teachers and students –persistent, intergenerational, warm relationships of moderate intensity that support students' academic and social accomplishments.

It is important to note that how teachers in schools in impoverished neighborhoods struggle to provide the necessary support for their students. Martinek and Hellison (1997) found that many teachers and principals feeling *disenfranchised* from their counterparts in more wealthy parts of the city and suburbs in Chicago. Lack of special services, resources, provisions for safety, and parental and public interests in schooling, contributed to low teacher morale and expectations for their children as well as losing hope (Martinek & Hellison, 1997). It can be said that this situation is similar for teachers in Turkey.

It is frequently stated that teachers should be appropriate role models and motivate their students. However, there seems to be some factors that prevent teachers from performing such a role model in Turkey. One of the studies of Eğitim-Sen (2001) indicated that not only the education of the poor children and adolescents, but also the poverty of teachers has become an important issue in Turkey. Many teachers cannot manage their lives with their salaries (85.7%), are forced to carry out other ways of earning money beyond their teaching jobs to maintain their families (23%). The insufficient monetary income of teachers and the economic troubles they have been facing have eroded the status of teachers in society and most of the respondents did not want their children to become teachers (68%). It is important to note that several economical and social policy changes are needed to improve the current circumstances of teachers, especially who are working in low SES neighborhoods.

Actually, each staff in the school has the potential to become a role model and mentor in the eyes of the students served, according to retrospective reports of at-risk children who overcome their adversities (Rak & Patterson, 1996). Thus, as one of the responsibility of school counselors, consultation with teachers and other school staff may be essential and enhance the development of resilience in students. Dickinson and Bradshaw (1992) developed a model for combining counseling and consultation services with children and adolescents and stated that through consultation, counselors can develop a network of outreach, advocacy, and support for at-risk students.

Moreover, as shown by the findings of the present study, a growing body of psychological and developmental literature emphasizes positive peer relationships as having important and significant power in individual outcomes (WestEd & CDE, 2000). Subsequently, it is important to promote supportive relationships between peers for creating positive school climate and motivation for students to be academically resilient. For this reason, structured peer activities such as peer support groups, conflict mediation, peer education, and cooperative learning activities may be developed in order to help them to develop their age-salient developmental tasks, including academic, social, and behavioral competence.

On the other hand, although participation in constructive activities in school, caring and engaging teachers and school staff and educational success may offer some means of protection, it is also important to see that school alone has not had the resources to suspend the persistent effects of poverty on academic resilience.

Furthermore, to ensure that all children have the opportunities to develop resilience skills, to increase academic, social and behavioral competencies, schools must also work to build linkages between families and communities. It is only at this intersystem level that we can build a broad enough; intense enough network of protection for all children and families (Benard, 1991).

The importance of family involvement in enhancing children's school performance has been consistently documented (Moles, 1982). Family involvement has been found to aid increased communication between schools and homes. The active participation of the family members in students learning has improved student achievement, increased school attendance, decreased student dropouts, and decreased delinquency (Wang, Haertel, & Walberg, 1994).

Indeed, Uz and Eryılmaz (1999) stated that family encouragement as well as the family interest in schools and classrooms affected Turkish children's achievement.

One way to increase family involvement is to invite parental participation in the school community (Christiansen & Christiansen, 1997). Ramirez-Smith (1995) explained the various ways of increasing parental participation and involvement in a school. These activities included hiring a home-school coordinator who contacted parents by phone and note, developing a social calendar for the school with events designed for parent-student interaction such as father-child breakfasts, providing workshops for parents about topics selected by parents, and welcoming parents in classrooms.

There have already been important attempts in implementing parental involvement programs in Turkey. For instance, Akkök, Öğetürk, and Kökdemir (1998) conducted

a pilot study at TED Ankara College with the purpose of promoting the home-school partnership in primary education. This project was then expanded to other primary education institutions (Taştan & Güden, 2004).

As previously noted in Chapter 1, many of the risk factors experienced by young children are associated with disorganization and disruption in the family and with poverty (Rak & Patterson, 1996). Counselors in school can assist at-risk children by providing individual and group consultation to parents. Parents need to know that children prosper and do well academically in a family environment that are caring and structured, hold high expectations for children's behavior, and encourage participation in the life of the family. Parallel with high expectations and caring relationships, the effects of other family characteristics such as structure, discipline, and clear rules and regulations on resilience outcomes of students should also be emphasized in parent involvement programs, workshops or parent meetings. The necessity of these kinds of programs was also stated by Öztop and Telsiz (1996). The researchers stated that the primary needs of the Turkish parents in all three SES levels to get more information about how they can motivate their children for schoolwork and contribute to their children's friendship preferences.

The family psycho-educational programs may also improve families' parenting skills, communication skills, their bonds with their children, their participation in the activities of their children's schools and their involvement in the social affairs of the communities. Counselors may assists parents in making specific plans to support their children's effective behaviors, to set logical consequences for misbehavior, to help their children to develop good study habits and high expectations.

Moreover, teachers may do a lot of things more than simply reporting parents about what their children do in school. Parents can be given opportunities to engage in the kind of work their children encounter. It will help them to better understand how children develop necessary skills as well as the nature of the school tasks. More individualized instructions for helping students can be given at parent conferences. Teachers may also inform parents about neighborhood resources (Drummond & Spitek, 2004).

Garmezy (1991) indicated that social organizations are the important signs of the cohesive and supportive community. Health care organizations, child-care services, job training opportunities and recreational facilities are important in serving the human developmental needs. These extra-familial social settings do not only include the availability of external resources and extended social supports but also contains the individual's use of those resources (Smokowski et al., 2004).

Hence, whether such organizations or programs are located within schools or cooperatively in community agencies, all should be comfortable, available, and understandable to poor families who are less connected to schools and other community organizations (Doll & Lyon, 1998). For this reason, it is crucial for schools and community organizations to find effective ways of developing relationships that cross the boundaries of social class.

At the same time, although strength based preventions and interventions are solely needed in responding to challenges faced by low-income families and youths, the importance of addressing these issues through public policy changes and community-wide intervention must be remembered (Buckner, Mezzacappa, & Beardslee, 2003). It is noteworthy that a sensitive social policy requires the amelioration of adverse circumstances and negative events in low SES neighborhoods.

To conclude, in this study, all variables assessed at one point in time. While this design is of interest in the preliminary examination of relationships between protective factors and academic resilience, it precludes statements regarding causal relations among the variables. Further research is needed using longitudinal and preventive intervention study designs in order to refine and clarify the causal nature of internal and external protective factors on resilience.

In the future, the demographic and environmental factors, which appear to protect adolescents from the negative effects of poverty, should be investigated more deeply using different research designs, samples, and informants. For example, involving the parent, adolescent's teachers or peers for yielding a more comprehensive picture

about the resilience characteristics of Turkish adolescents in academic, social and emotional/behavioral competence domains will be valuable. In addition, possible family factors including, home environment, parenting quality, psychopathology of parents, and family-school involvement should be explored among adolescents living in poverty in order to obtain rich data considering the effects of family characteristics on adolescents' resilience.

In a similarly vein, different at-risk populations (e.g. children of divorced parents, maltreated children, homeless or street children etc.) should be investigated.

Moreover, the other age-developmental tasks or competence areas such as social competence and behavioral conduct of adolescents as well as academic competence should be investigated under adverse circumstances.

Further studies should implement some individual or group counseling programs to foster resilience in children and adolescents and examine their effectiveness.

Moreover, the effects of school characteristics and environment, academic curriculum, teacher quality of schools on resilience of at-risk students should be assessed along with more in-depth measures in order to understand how schools can sustain high academic motivation and resilience in students.

The last but by no means the least point regarding the future studies is that they should pay attention to the role of community and neighborhood characteristics in promoting vulnerability and/or resilience.

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APPENDICES

APPENDIX A

DOCUMENT OF THE STATE INSTITUTE OF STATISTICS

T.C.
BAŞBAKANLIK
DEVLET İSTATİSTİK ENSTİTÜSÜ
BAŞKANLIĞI

SAYI : B.02.1.DİE.0.16.00.03/907/55A40E-6913 ANKARA

KONU: İstatistiki bilgi talebi 11 / 11 / 2002

Sayın Cem Ali GİZİR

İLGİ : 01.11.2002 tarihli faks yazınız.

İstemiş olduğunuz Ankara ili, ilçeleri ve mahallelerine ait bilgiler 2000 yılı binalar cetveli numarataj çalışmalarının sonuçlarına göre manyetik ortamda excel (xls) dosyası formatında hazırlanmıştır.

Bilgilerinizi rica ederim.

Dr. M. Akif BAKIR
Enstitü Başkanı

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APPENDIX B

DEMOGRAPHIC DATA FORM

ÖĞRENCİ ANKETİ

Değerli Öğrencimiz,

Bu anket, ilköğretim öğrencilerinin gelişimsel özellikleri, hayat şartları ve karşılaştıkları sorunlar ile ilgili yapılmakta olan bir araştırma için hazırlanmıştır. Bu araştırma, siz gençlerimizin sosyal gelişimlerine destek olacak programların planlanması için büyük önem taşımaktadır.

Ankete vereceğiniz yanıtlar, birey olarak tek tek değil bir grup olarak değerlendirilecektir. **Sorulara vereceğiniz yanıtlar kesinlikle gizli tutulacak ve araştırma dışında hiçbir yerde kullanılmayacaktır.** Sizin bu anketteki sorulara vereceğiniz doğru, açık ve samimi yanıtlar, araştırma sonuçlarının güvenirliği ve gelecekte hazırlanacak programların doğru planlanması açısından son derece önemlidir.

Soruların doğru ya da yanlış herhangi bir cevabı yoktur. Lütfen çeşitli sorularla ilgili olarak sadece kendi durumunuzu açıkça yansıtan cevaplar veriniz.

Yardımlarınız için teşekkür eder, başarılar dilerim.

Cem Ali Gizir
Uzm. Psikolojik Danışman
ODTÜ,Eğitim Bilimleri Bölümü
Doktora Öğrencisi

1. **Doğum Tarihiniz :** ……./……./ 19……

2. **Cinsiyetiniz :** ❒Kız ❒Erkek

3. **Anneniz hayatta mı?**

   ❒Evet ❒Hayır

4. **Babanız hayatta mı?**

   ❒Evet ❒Hayır

5. **Anne-Baba hayatta ise**

   ❒Birlikte yaşıyorlar ❒Ayrı yaşıyorlar ❒Boşandılar ❒Diğer (lütfen belirtiniz):

6. **Anne-Baba ayrı yaşıyor ya da boşanmış ise:**

   ❒Annemle yaşıyorum ❒Babamla yaşıyorum ❒Diğer (lütfen belirtiniz): …

7.

   Anneniz : ❒Öz ❒Üvey

   Babanız : ❒Öz ❒Üvey

8. **Annenizin eğitim durumu nedir?**

   ❒ Okuma – yazma bilmiyor
   ❒ Okur yazar
   ❒ İlkokul mezunu
   ❒ Ortaokul mezunu
   ❒ Lise mezunu
   ❒ Yüksekokul mezunu (2 yıllık)
   ❒ Üniversite mezunu (4 yıllık)
   ❒ Bilmiyorum

9. **Anneniz bir işte çalışıyor mu?**

   ❒Evet ❒Hayır

10. **Eğer anneniz bir işte çalışıyorsa, mesleği nedir ?**

    (Eğer anneniz emekli, şu an çalışmıyor veya hayatta değil ise çalıştığı zamanki mesleğini yazınız):

    ……

11. **Babanızın eğitim durumu nedir ?**

    ❒ Okuma – yazma bilmiyor
    ❒ Okur yazar
    ❒ İlkokul mezunu
    ❒ Ortaokul mezunu
    ❒ Lise mezunu
    ❒ Yüksekokul mezunu (2 yıllık)
    ❒ Üniversite mezunu (4 yıllık)
    ❒ Bilmiyorum

12. **Babanız bir işte çalışıyor mu?**

    ❒Evet ❒Hayır

13. Eğer babanız bir işte çalışıyorsa, mesleği nedir ?
(Eğer babanız emekli, şu an çalışmıyor veya hayatta değil ise çalıştığı zamanki mesleğini yazınız) :

……

14. Ailenizin aylık ortalama geliri toplam ne kadardır? (tüm gelirleriniz dahil)

…… TL

15. Evde kaç kişi ile birlikte yaşıyorsunuz (siz dahil) **: ……**kişi

16. Aşağıda belirtilen kişilerden hangileri sizinle birlikte aynı evde yaşıyor?

- ❒ Baba
- ❒ Anne
- ❒ Kızkardeş
- ❒ Erkek Kardeş
- ❒ Büyükanne / Büyükbaba
- ❒ Damat / Gelin
- ❒ Torun
- ❒ Başka akrabalar (çocuk ya da yetişkin)
- ❒ Diğer (lütfen belirtiniz) ……..

17. Yaşadığınız ev aşağıdakilerden hangisi ile tanımlanabilir?

- ❒ Apartman dairesi
- ❒ Müstakil ev
- ❒ Gecekondu
- ❒ Diğer (lütfen belirtiniz): ……

18. Şu anda yaşadığınız evin mülkiyet durumu nedir?

- ❒ Evin sahibiyiz
- ❒ Kiracıyız
- ❒ Lojmanda kalıyoruz
- ❒ Kira ödemeden kullanıyoruz
- ❒ Diğer (lütfen belirtiniz): ……

APPENDIX C

RESILIENCE AND YOUTH DEVELOPMENT MODULE

California Healthy Kids Survey[1]

SECTION B

Please mark on your answer sheets how you feel about each of the following statements.

How strongly do you agree or disagree with the following statements about your *school*?

		Strongly Disagree	Disagree	Agree	Strongly Agree
B1.	I feel close to people at this school.	A	B	C	D
B2.	I am happy to be at this school.	A	B	C	D
B3.	I feel like I am part of this school.	A	B	C	D
B4.	The teachers at this school treat students fairly.	A	B	C	D
B5.	I feel safe in my school.	A	B	C	D

Next, mark how TRUE you feel the next statements are about your SCHOOL and things you might do there.

At my school, there is a teacher or some other adult…

		Not at All True	A Little True	Pretty Much True	Very Much True
B6.	who really cares about me.	A	B	C	D
B7.	who tells me when I do a good job.	A	B	C	D
B8.	who notices when I'm not there.	A	B	C	D
B9.	who always wants me to do my best.	A	B	C	D
B10.	who listens to me when I have something to say.	A	B	C	D
B11.	who believes that I will be a success.	A	B	C	D
B12.	who expects me to follow the rules.	A	B	C	D

[1] California Healthy Kids Survey, 2002 CA Dept. of Ed. Middle School Questionnaire Version M6 – Fall 2002 Module B: Resilience and Youth Development

At school…

		Not at All True	A Little True	Pretty Much True	Very Much True
B13.	I do interesting activities.	A	B	C	D
B14.	I help decide things like class activities or rules.	A	B	C	D
B15.	I do things that make a difference.	A	B	C	D
B16.	I do things that help other people.	A	B	C	D
B17.	I am involved in sports, clubs, or other extra-curricular activities. (Such as band, cheerleading, student council etc.)	A	B	C	D

The next statements are about what might occur *outside your school or home*, such as in your NEIGHBORHOOD, COMMUNITY, or with an ADULT other than your parents or guardian.

Outside of my home and school, there is an adult…

		Not at All True	A Little True	Pretty Much True	Very Much True
B18.	who really cares about me.	A	B	C	D
B19.	who tells me when I do a good job.	A	B	C	D
B20.	who notices when I am upset about something.	A	B	C	D
B21.	who believes that I will be a success.	A	B	C	D
B22.	who always wants me to do my best.	A	B	C	D
B23.	whom I trust.	A	B	C	D

Outside of my home and school, I do these things…

		Not at All True	A Little True	Pretty Much True	Very Much True
B24.	I am part of clubs, sports teams, church/temple, or other group activities.	A	B	C	D
B25.	I am involved in music, art, literature, sports or a hobby.	A	B	C	D
B26.	I help other people.	A	B	C	D

How true are these statements about your FRIENDS?

I have a friend about my own age…

		Not at All True	A Little True	Pretty Much True	Very Much True
B27.	who really cares about me.	A	B	C	D
B28.	who talks with me about my problems.	A	B	C	D
B29.	who helps me when I'm having a hard time.	A	B	C	D

My friends…

		Not at All True	A Little True	Pretty Much True	Very Much True
B30.	get into a lot of trouble.	A	B	C	D
B31.	try to do what is right.	A	B	C	D
B32.	do well in school.	A	B	C	D

How true are these statements about your HOME or the ADULTS WITH WHOM YOU LIVE?

In my home, there is a parent or some other adult…

		Not at All True	A Little True	Pretty Much True	Very Much True
B33.	who expects me to follow the rules.	A	B	C	D
B34.	who is interested in my school work.	A	B	C	D
B35.	who believes that I will be a success.	A	B	C	D
B36.	who talks with me about my problems.	A	B	C	D
B37.	who always wants me to do my best.	A	B	C	D
B38.	who listens to me when I have something to say.	A	B	C	D

At home…

		Not at All True	A Little True	Pretty Much True	Very Much True
B39.	I do fun things or go fun places with my parents or other adults.	A	B	C	D
B40.	I do things that make a difference.	A	B	C	D
B41.	I help make decisions with my family.	A	B	C	D

SECTION B2

How true do you feel these statements are about you personally?

		Not at All True	A Little True	Pretty Much True	Very Much True
B2-1.	I feel bad when someone gets their feelings hurt.	A	B	C	D
B2-2.	I try to understand what other people go through.	A	B	C	D
B2-3.	When I need help, I find someone to talk with.	A	B	C	D
B2-4.	I know where to go for help with a problem.	A	B	C	D
B2-5.	I try to work out problems by talking or writing about them.	A	B	C	D
B2-6.	I can work out my problems.	A	B	C	D
B2-7.	I can do most things if I try.	A	B	C	D
B2-8.	I can work with someone who has different opinions than mine.	A	B	C	D
B2-9.	There are many things that I do well.	A	B	C	D
B2-10.	I enjoy working together with other students my age.	A	B	C	D
B2-11.	I stand up for myself without putting others down.	A	B	C	D
B2-12.	I try to understand how other people feel and think.	A	B	C	D
B2-13.	There is a purpose to my life.	A	B	C	D
B2-14.	I understand my moods and feelings.	A	B	C	D
B2-15.	I understand why I do what I do.	A	B	C	D
B2-16.	I have goals and plans for the future.	A	B	C	D
B2-17.	I plan to graduate from high school.	A	B	C	D
B2-18.	I plan to go to college or some other school after high school.	A	B	C	D

APPENDIX D

RYDM PERMISSION LETTER

Dear Cem Ali Gizir,

I appreciate your honesty. Attached are two documents. Hopefully, they will come through. One is the actual instrument, just the resilience module. This can also be downloaded from the Web site. The other is the coding used to score the module. This code gives the groupings of which questions go with which sub scale and which sub scales go into which assets. Please do not give this code out to anyone else, as this is what WestEd has the intellectual property rights to. However, for the purposes of your research, you may use it to code the data you will get from your subjects for your dissertation only. Please be sure to send all findings to WesEd, as we are very interested in cross cultural validation of the resilience module. Additional, please credit both WestEd and the California Department of Education when citing anything.

Ka

T. Kiku Annon
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APPENDIX E

EFA MODELS OF RYDM EXTERNAL ASSETS

E.1 TOTAL SAMPLE

Factor Loadings and Communalities of the Items of RYDM-External Assets via Varimax Rotation

Factors and Items			F1	F2	F3	F4	F5	F6	F7
Community Care / High									
RES18	Who really cares about me	596	**.726**	-	-	-	-	-	-
RES22	Who always wants me to do my best	.634	**.725**	-	-	-	-	-	-
RES19	Who tells me when I do a good job	.560	**.699**	-	-	-	-	-	-
RES21	Who believes that I will be a success	.601	**.670**	-	-	-	-	-	-
RES23	Whom I trust	.505	**.660**	-	-	-	-	-	-
RES20	Who notices when I am upset	.529	**.646**	-	-	-	-	-	-
School Care / High									
RES11	Who believes that I will be a success	.614	-	**.689**	-	-	-	-	-
RES10	Who listens to me when I have smtg	.533	-	**.662**	-	-	-	-	-
RES9	Who always wants me to do my best	.503	-	**.659**	-	-	-	-	-
RES6	Who really cares about me	.496	-	**.642**	-	-	-	-	-
RES7	Who tells me when I do a good job	.454	-	**.630**	-	-	-	-	-
RES8	Who notices when I'm not there	.447	-	**.620**	-	-	-	-	-
Home Care / High									
RES34	Who is interested in my school work	.582	-	-	**.713**	-	-	-	-
RES36	Who talks with me about my problem	.658	-	-	**.699**	-	-	.369	-
RES38	Who listens to me when I have smtg	.615	-	-	**.670**	-	-	.329	-
RES35	Who believes that I will be a success	.541	-	-	**.637**	-	-	-	-
RES37	Who always wants me to do my best	.526	-	-	**.615**	-	-	-	-
RES33	Who expects me to follow the rules	.379	-	-	**.450**	-	-	-	-
Peer Care									
RES28	Who talks with me about my problem	.770	-	-	-	**.833**	-	-	-
RES27	Who really cares about me	.730	-	-	-	**.811**	-	-	-
RES29	Who helps me when having hard time	.741	-	-	-	**.795**	-	-	-
School / Community Meaningful									
RES25	I am involved in music or a hobby	.518	-	-	-	-	**.710**	-	-
RES24	I am part of clubs or group activities	.447	-	-	-	-	**.628**	-	-
RES13	I do interesting activities	.473	-	-	-	-	**.564**	-	-
RES15	I do things that make a difference	.544	-	-	-	-	**.507**	.374	-
RES14	I help decide things like class rules	.450	-	.361	-	-	**.438**	-	-
RES26	I help other people	.281	-	-	-	-	**.406**	-	-
Home Meaningful									
RES41	I help make decisions with my family	.525	-	-	-	-	-	**.637**	-
RES39	I do fun things and go fun places	.472	-	-	-	-	-	**.610**	-
RES40	I do things that make a difference	.513	-	-	-	-	.378	**.567**	-
Peer High									
RES30	My friends gets into a lot of trouble	.601	-	-	-	-	-	-	**.715**
RES32	My friends do well in school	.539	-	-	-	-	-	-	**.640**
RES31	My friends try to do what is right	.577	-	-	-	.318	-	-	**.627**

Note: Loadings below 0.3 were suppressed in the table.

Rotation Sums of Squared Loadings of Factors of RDYM-External Assets

Component	Eigenvalue	% of Variance	Cumulative %
1. Community – Care/High	3.40	10.31	10.31
2. Home – Care/High	3.26	9.87	20.18
3. School – Care/High	3.07	9.32	29.50
4. Peer Care	2.41	7.30	36.80
5. School / Community Meaningful	2.39	7.24	44.04
6. Home Meaningful	1.89	5.72	49.76
7. Peer High	1.53	4.64	54.40

E.2GIRLS

Factor Loadings and Communalities of the Items of RYDM External Assets via Varimax Rotation

Factors and Items		Com.	F1	F2	F3	F4	F5	F6	F7
School Care / High									
RES11	Who believes that I will be a success	.653	**.759**	-	-	-	-	-	-
RES7	Who tells me when I do a good job	.516	**.669**	-	-	-	-	-	-
RES9	Who always wants me to do my best	.583	**.667**	-	-	-	-	-	.340
RES10	Who listens to me when I have smtg	.484	**.634**	-	-	-	-	-	-
RES6	Who really cares about me	.528	**.631**	-	-	-	-	-	-
RES8	Who notices when I'm not there	.440	**.587**	-	-	-	-	-	-
Community Care / High									
RES18	Who really cares about me	.549	**-**	**.696**	-	-	-	-	-
RES21	Who believes that I will be a success	.676	.356	**.678**	-	-	-	-	-
RES19	Who tells me when I do a good job	.511	**-**	**.672**	-	-	-	-	-
RES22	Who always wants me to do my best	.612	**-**	**.661**	-	-	-	-	-
RES20	Who notices when I am upset	.499	**-**	**.642**	-	-	-	-	-
RES23	Whom I trust	.482	**-**	**.606**	-	-	-	-	-
Home Care / Meaningful									
RES34	Who is interested in my school work	.610	-	**-**	**.750**	-	-	-	-
RES36	Who talks with me about my problem	.642	-	**-**	**.749**	-	-	-	-
RES38	Who listens to me when I have smtg	.622	-	**-**	**.716**	-	-	-	-
RES41	I help make decisions with my family	.472	-	**-**	**.626**	-	-	-	-
RES39	I do fun things and go fun places	.445	-	**-**	**.562**	-	-	-	-
School / Community Meaningful									
RES13	I do interesting activities	.546	-	-	**-**	**.697**	-	-	-
RES15	I do things that make a difference	.517	-	-	**-**	**.687**	-	-	-
RES25	I am involved in music or a hobby	.484	-	-	**-**	**.651**	-	-	-
RES14	I help decide things like class rules	.543	-	-	**-**	**.595**	-	-	-
RES24	I am part of clubs or group activities	.370	-	-	**-**	**.576**	-	-	-
RES26	I help other people	.398	-	-	**-**	**.522**	-	-	-
RES40	I do things that make a difference	.449	-	-	.330	**.521**	**-**	-	-
Peer Care									
RES28	Who talks with me about my problem	.783	-	-	-	**-**	**.837**	-	-
RES29	Who helps me when having hard time	.791	-	-	-	**-**	**.832**	-	-
RES27	Who really cares about me	.747	-	-	-	**-**	**.827**	-	-
Peer High									
RES32	My friends do well in school	.615	-	-	-	-	**-**	**.731**	-
RES31	My friends try to do what is right	.679	-	-	-	-	**-**	**.724**	-
RES30	My friends gets into a lot of trouble	.640	-	-	-	-	**-**	**.603**	-
Home High									
RES37	Who always wants me to do my best	.566	-	-	.351	-	**-**	-	**.513**
RES35	Who believes that I will be a success	.508	.368	.320	-	-	-	**-**	**.463**
RES33	Who expects me to follow the rules	.356	-	-	-	-	**-**	-	**.401**

Note: Loadings below 0.3 were suppressed in the table.

Rotation Sums of Squared Loadings of Factors of RDYM External Assets

Component	Eigenvalue	% of Variance	Cumulative %
1. School – Care/High	3.49	10.59	10.59
2. Community – Care/High	3.16	9.57	20.16
3. Home – Care/meaningful	3.14	9.52	29.68
4. School / Community Meaningful	2.87	8.68	38.36
5. Peer Care	2.50	7.58	45.94
6. Peer High	1.67	5.07	51.01
7. Home High	1.48	4.49	55.50

E.3 BOYS

Factor Loadings and Communalities of the Items of RYDM External Assets via Varimax Rotation

Factors and Items		Com.	F1	F2	F3	F4	F5	F6	F7
Community Care / High									
RES22	Who always wants me to do my best	.642	**.756**	-	-	-	-	-	-
RES18	Who really cares about me	.624	**.750**	-	-	-	-	-	-
RES19	Who tells me when I do a good job	.621	**.705**	-	-	-	-	-	-
RES23	Whom I trust	.547	**.696**	-	-	-	-	-	-
RES21	Who believes that I will be a success	.591	**.655**	-	-	-	-	-	-
RES20	Who notices when I am upset	.560	**.621**	-	-	-	-	-	-
Home Care / High									
RES34	Who is interested in my school work	.583	-	**.728**	-	-	.319	-	-
RES36	Who talks with me about my problem	.686	-	**.717**	-	-	-	-	-
RES35	Who believes that I will be a success	.594	-	**.701**	-	-	-	-	-
RES38	Who listens to me when I have smtg	.612	-	**.672**	-	-	-	-	-
RES37	Who always wants me to do my best	.555	-	**.669**	-	-	-	-	-
RES33	Who expects me to follow the rules	.402	-	**.500**	-	-	-	-	-
School Care / High									
RES10	Who listens to me when I have smtg	.571	-	-	**.686**	-	-	-	-
RES11	Who believes that I will be a success	.627	-	.335	**.663**	-	-		-
RES9	Who always wants me to do my best	.497	-	-	**.654**	-	-	-	-
RES8	Who notices when I'm not there	.455	-	-	**.608**	-	-		-
RES6	Who really cares about me	.463	-	-	**.605**	-	-	-	-
RES7	Who tells me when I do a good job	.451	-	-	**.543**	-	-	-	-
Peer Care									
RES28	Who talks with me about my problem	.711	-	-	-	**.808**	-	-	-
RES27	Who really cares about me	.658	-	-	-	**.772**	-	-	-
RES29	Who helps me when having hard time	.669	-	-	-	**.761**	-	-	-
RES31	My friends try to do what is right	.493	-	-	-	**.467**	-	-	.443
RES32	My friends do well in school	.417	-	-	-	**.422**	-	-	.394
Home Meaningful									
RES39	I do fun things and go fun places	.535	-	-	-	-	**.684**	-	-
RES40	I do things that make a difference	.591	-	-	-	-	**.669**	-	-
RES41	I help make decisions with my family	.432	-	-	-	-	**.546**	-	-
RES15	I do things that make a difference	.551	-	-	.354	-	**.490**	.450	-
RES13	I do interesting activities	.421	-	-	.334	-	**.398**	.367	-
School / Community Meaningful									
RES25	I am involved in music or a hobby	.522	-	-	-	-	-	**.702**	-
RES24	I am part of clubs or group activities	.491	-	-	-	-	-	**.665**	-
RES14	I help decide things like class rules	.479	-	-	.347	-	-	**.420**	**-**
RES26	I help other people	.280	-	-	-	-	-	**.328**	-
Peer High									
RES30	My friends gets into a lot of trouble	.723	-	-	-	-	-	-	**.830**

Note: Loadings below 0.3 were suppressed in the table.

Rotation Sums of Squared Loadings of Factors of RDYM External Assets

Component	Eigenvalue	% of Variance	Cumulative %
1. Community – Care/High	3.46	10.49	10.49
2. Home – Care/High	3.40	10.31	20.80
3. School – Care/High	3.07	9.30	30.10
4. Peer Care	2.68	8.13	38.23
5. Home Meaningful	2.56	6.83	45.06
6. School / Community Meaningful	1.90	5.75	50.81
7. Peer High	1.38	3.89	57.70

APPENDIX F

CFA MODELS OF RYDM EXTERNAL ASSETS

Goodness-of-fit information for CFA of RDYM External Asset measures for the total sample, girls and boys

Models			χ^2	*df*	χ^2/df	GFI	AGFI	CFI	RMSEA	RMR
	TOTAL SAMPLE									
Model 1		7 factor EFA in CFA framework	1614.501	474	3.41	0.90	0.88	0.89	0.053	0.053
Model 2	Model 1 +	Separate home care and home high factors	1382.729	467	2.96	0.91	0.89	0.90	0.047	0.049
Model 3	Model 2 +	Separate school and community meaningful participation	1327.022	459	2.89	0.92	0.90	0.91	0.047	0.047
Model 4	Model 3 +	Separate school care and school high factors	1296.046	450	2.88	0.92	0.90	0.91	0.047	0.049
Model 5	Model 3 +	Separate community care and community high factors	1158.615	450	2.57	0.92	0.90	0.92	0.044	0.047
Model 6	Model 3 +	RES26 crossloads and drop RES26	1205.885	428	2.82	0.92	0.90	0.92	0.046	0.045
Model 7	Model 6 +	RES30 does not load on significantly and drop RES30	1113.965	398	2.80	0.92	0.91	0.93	0.045	0.040
Model 8*	Model 7 +	Add 5 error covariances	850.574	393	2.16	0.94	0.93	0.95	0.037	0.038
	GIRLS									
Model 1		7 factor EFA in CFA framework	1158.413	474	2.44	0.86	0.84	0.86	0.057	0.062
Model 2	Model 1 +	Separate home care and home meaningful factors	1027.234	467	2.20	0.87	0.85	0.88	0.052	0.058
Model 3	Model 2 +	Separate school and community meaningful participation	1002.137	459	2.18	0.88	0.85	0.89	0.052	0.057
Model 4	Model 3 +	Separate school care and school high factors	971.287	450	2.48	0.88	0.85	0.89	0.051	0.056
Model 5	Model 3 +	Separate community care and community high factors	888.470	450	1.97	0.89	0.86	0.91	0.047	0.053
Model 6	Model 3 +	RES26 crossloads and drop RES26	935.983	428	2.19	0.88	0.86	0.89	0.052	0.054
Model 7	Model 6 +	RES30 does not load on significantly and drop RES30	876.096	398	2.20	0.89	0.87	0.90	0.051	0.051
Model 8*	Model 7 +	Add 5 error covariances	706.440	392	1.80	0.91	0.90	0.93	0.043	0.049
	BOYS									
Model 1		7 factor EFA in CFA framework	971.297	474	2.05	0.88	0.86	0.90	0.049	0.055
Model 2	Model 1 +	Separate home care and home high factors	910.776	467	1.95	0.87	0.86	0.90	0.047	0.053
Model 3	Model 2 +	Separate school and community meaningful participation	868.020	459	1.89	0.89	0.87	0.91	0.045	0.052
Model 4	Model 3 +	Separate school care and school high factors	844.606	450	1.87	0.89	0.87	0.91	0.045	0.052
Model 5	Model 3 +	Separate community care and community high factors	838.765	450	1.86	0.90	0.87	0.91	0.045	0.052
Model 6	Model 3 +	RES26 crossloads and drop RES26	796.104	428	1.86	0.90	0.87	0.92	0.045	0.050
Model 7	Model 6 +	RES30 does not load on significantly and drop RES30	722.661	398	1.81	0.90	0.89	0.93	0.043	0.045
Model 8*	Model 7 +	Add 4 error covariances	598.279	394	1.52	0.92	0.90	0.95	0.035	0.043

* Preferred Model

APPENDIX G

LISREL ESTIMATES OF RYDM-EXTERNAL ASSETS FROM THE ESTIMATED CFA MODELS FOR GIRLS AND BOYS GROUPS

G.1 GIRLS

Standardized Lambda-x values, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of RYDM-External Assets

Latent and Observed Variables		λ_x	SE	t	R^2
School Caring Relationships & High Expectations					
RES6	Teacher really cares about me	0.66	0.04	14.43	0.44
RES7	Teacher tells me when I do a good job	0.65	0.05	14.03	0.42
RES8	Teacher notices when I'm not there	0.57	0.05	11.87	0.32
RES9	Teacher always wants me to do my best	0.59	0.04	12.68	0.35
RES10	Teacher listens to me when I have something	0.63	0.05	13.51	0.40
RES11	Teacher believes that I will be a success	0.69	0.04	15.36	0.47
School Meaningful Participation					
RES13	I do interesting activities at school	0.67	0.05	13.55	0.45
RES14	At school I help decide things like class rules	0.67	0.05	13.60	0.45
RES15	I do things at school that make a difference	0.63	0.05	12.61	0.39
Community Caring Relationships & High Expectations					
RES18	Adult really cares about me	0.61	0.05	12.99	0.38
RES19	Adult tells me when I do a good job	0.61	0.04	12.84	0.37
RES20	Adult notices when I am upset	0.59	0.05	12.28	0.34
RES21	Adult believes that I will be a success	0.72	0.04	16.37	0.52
RES22	Adult always wants me to do my best	0.68	0.04	15.19	0.47
RES23	I trust an adult outside my home	0.57	0.05	11.95	0.33
Community Meaningful Participation					
RES24	I am part of clubs or other group activities	0.57	0.06	10.28	0.32
RES25	I am involved in music or a hobby	0.65	0.06	11.36	0.43
Peer Caring Relationships					
RES27	Friend really cares about me	0.77	0.04	18.28	0.59
RES28	Friend talks with me about my problems	0.87	0.04	21.49	0.75
RES29	Friend helps me when having hard time	0.87	0.04	21.63	0.76
Peer High Expectations					
RES31	Friends try to do what is right	0.76	0.05	11.85	0.58
RES32	Friends do well in school	0.61	0.05	10.35	0.37
Home Caring Relationships					
RES34	Parent is interested in my school work	0.68	0.05	14.91	0.47
RES36	Parent talks with me about my problems	0.80	0.05	18.37	0.65
RES38	Parent listens to me when I have something	0.76	0.04	17.23	0.59
Home High Expectations					
RES33	Parent expects me to follow the rules	0.51	0.04	10.21	0.26
RES35	Parent believes that I will be a success	0.63	0.04	13.41	0.40
RES37	Parent always wants me to do my best	0.65	0.03	13.45	0.42
Home Meaningful Participation					
RES39	I do fun things and go fun places with parent	0.59	0.05	11.34	0.35
RES40	I do things at home that make a difference	0.59	0.05	11.38	0.35
RES41	I help make decisions with my family	0.60	0.05	11.54	0.36

G.2 BOYS

Standardized Lambda-x values, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of RYDM-External Assets

Latent and Observed Variables		λ_x	SE	t	R^2
School Caring Relationships & High Expectations					
RES6	Teacher really cares about me	0.60	0.04	12.48	0.36
RES7	Teacher tells me when I do a good job	0.54	0.05	11.14	0.29
RES8	Teacher notices when I'm not there	0.47	0.05	9.38	0.22
RES9	Teacher always wants me to do my best	0.60	0.04	12.58	0.37
RES10	Teacher listens to me when I have something	0.68	0.05	14.49	0.46
RES11	Teacher believes that I will be a success	0.70	0.04	15.52	0.50
School Meaningful Participation					
RES13	I do interesting activities at school	0.52	0.05	10.02	0.27
RES14	At school I help decide things like class rules	0.61	0.05	12.04	0.37
RES15	I do things at school that make a difference	0.73	0.05	14.67	0.54
Community Caring Relationships & High Expectations					
RES18	Adult really cares about me	0.72	0.05	16.20	0.52
RES19	Adult tells me when I do a good job	0.73	0.04	16.89	0.54
RES20	Adult notices when I am upset	0.65	0.05	14.24	0.42
RES21	Adult believes that I will be a success	0.68	0.04	15.37	0.47
RES22	Adult always wants me to do my best	0.68	0.04	15.01	0.46
RES23	I trust an adult outside my home	0.66	0.05	14.37	0.43
Community Meaningful Participation					
RES24	I am part of clubs or other group activities	0.59	0.06	8.61	0.35
RES25	I am involved in music or a hobby	0.66	0.06	9.08	0.44
Peer Caring Relationships					
RES27	Friend really cares about me	0.75	0.04	16.71	0.56
RES28	Friend talks with me about my problems	0.79	0.05	17.95	0.63
RES29	Friend helps me when having hard time	0.77	0.04	17.28	0.59
Peer High Expectations					
RES31	Friends try to do what is right	0.67	0.05	12.07	0.45
RES32	Friends do well in school	0.62	0.05	11.33	0.38
Home Caring Relationships					
RES34	Parent is interested in my school work	0.65	0.05	14.23	0.43
RES36	Parent talks with me about my problems	0.83	0.04	19.55	0.70
RES38	Parent listens to me when I have something	0.75	0.04	16.94	0.56
Home High Expectations					
RES33	Parent expects me to follow the rules	0.56	0.04	11.55	0.32
RES35	Parent believes that I will be a success	0.63	0.04	13.58	0.40
RES37	Parent always wants me to do my best	0.72	0.04	15.52	0.52
Home Meaningful Participation					
RES39	I do fun things and go fun places with parent	0.58	0.05	11.20	0.33
RES40	I do things at home that make a difference	0.71	0.05	14.08	0.51
RES41	I help make decisions with my family	0.58	0.05	11.22	0.33

APPENDIX H

EFA MODELS OF RYDM-INTERNAL ASSETS

H.1 TOTAL SAMPLE

Factor Loadings and Communalities of the Items of RDYM Internal External Assets via Varimax Rotation

Factors and Items	Com.	F1	F2	F3	F4	F5
Goals and Aspirations						
RES59 I plan to go to college after high school	.724	**.842**	-	-	-	-
RES58 I plan to graduate from high school	.690	**.820**	-	-	-	-
RES57 I have goals and plans for the future	.463	**.599**	-	-	-	-
RES54 There is a purpose to my life	.557	**.554**	-	-	-	-
Problem Solving						
RES45 I know where to go for help with problem	.651	-	**.785**	-	-	-
RES44 When I need help I find someone to talk with	.593	-	**.743**	-	-	-
RES46 I try to work out problems by talking about	.530	-	**.687**	-	-	-
Empathy						
RES43 I try to understand what others go through	.656	-	-	**.798**	-	-
RES42 I feel bad when someone gets feelings hurt	.605	-	-	**.757**	-	-
RES53 I try to understand what other people feel	.593	-	-	**.630**	-	-
Communication and Self Efficacy						
RES48 I can do most things if I try	.576	-	-	-	**.685**	-
RES50 There are many things that I do well	.504	-	-	-	**.660**	-
RES49 I can work someone having diferent opinions	.413	-	-	-	**.572**	-
RES52 I stand up without putting someone down	.383	-	-	.306	**.442**	-
RES51 I enjoy working together with others	.409	-	.385	-	**.407**	-
Self Awareness						
RES55 I understand my moods and feelings	.635	-	-	-	-	**.730**
RES47 I can work out my problems	.488	-	-	-	-	**.661**
RES56 I understand why I do what I do	.557	-	-	-	-	**.646**

Note: Loadings below 0.3 were suppressed in the table.

Rotation Sums of Squared Loadings of Factors of RDYM Internal Assets

Component	Eigenvalue	% of Variance	Cumulative %
1. Goals and Aspirations	2.33	12.96	12.96
2. Problem Solving	2.08	11.54	24.50
3. Empathy	1.90	10.57	35.07
4. Communication and Efficacy	1.83	10.16	45.23
5. Self Awareness	1.71	9.51	54.74

H.2 GIRLS

Factor Loadings and Communalities of the Items of RDYM Internal External Assets via Varimax Rotation

Factors and Items	Com.	F1	F2	F3	F4	F5
Goals and Aspirations						
RES59 I plan to go to college after high school	.760	**.863**	-	-	-	-
RES58 I plan to graduate from high school	.752	**.849**	-	-	-	-
RES57 I have goals and plans for the future	.527	**.661**	-	-	-	-
RES54 There is a purpose to my life	.360	**.544**	-	-	-	-
Problem Solving						
RES45 I know where to go for help with problem	.668	-	**.771**	-	-	-
RES44 When I need help I find someone to talk with	.599	-	**.739**	-	-	-
RES46 I try to work out problems by talking about	.542	-	**.719**	-	-	-
Empathy						
RES42 I feel bad when someone gets feelings hurt	.671	-	-	**.811**	-	-
RES43 I try to understand what others go through	.532	-	-	**.698**	-	-
RES53 I try to understand what other people feel	.455	.323	-	**.477**	-	-
Communication and Self Efficacy						
RES48 I can do most things if I try	.580	-	-	-	**.711**	-
RES50 There are many things that I do well	.446	-	-	-	**.588**	-
RES49 I can work someone having diferent opinions	.406	-	.330	-	**.537**	-
RES52 I stand up without putting someone down	.303	-	-	-	**.381**	-
RES51 I enjoy working together with others	.403	-	-	-	**.340**	-
Self Awareness						
RES55 I understand my moods and feelings	.627	-	-	-	-	**.720**
RES56 I understand why I do what I do	.598	-	-	-	-	**.710**
RES47 I can work out my problems	.522	-	-	-	.368	**.591**

Note: Loadings below 0.3 were suppressed in the table.

Rotation Sums of Squared Loadings of Factors of RDYM Internal Assets

Component	Eigenvalue	% of Variance	Cumulative %
1. Goals and Aspirations	2.55	14.17	14.17
2. Problem Solving	2.02	11.21	25.38
3. Empathy	1.78	9.91	35.29
4. Communication and Efficacy	1.71	9.49	44.78
5. Self Awareness	1.69	9.39	54.17

H.3 BOYS

Factor Loadings and Communalities of the Items of RDYM Internal External Assets via Varimax Rotation

Factors and Items	Com.	F1	F2	F3	F4	F5
Problem Solving and Communication						
RES45 I know where to go for help with problem	.562	**.732**	-	-	-	-
RES44 When I need help I find someone to talk with	.551	**.721**	-	-	-	-
RES46 I try to work out problems by talking about	.525	**.653**	-	-	-	-
RES51 I enjoy working together with others	.439	**.602**	-	-	-	-
RES52 I stand up without putting someone down	.431	**.514**	334	-	-	-
Self Awareness						
RES55 I understand my moods and feelings	.581	-	**.723**	-	-	-
RES56 I understand why I do what I do	.628	-	**.721**	-	-	-
RES54 There is a purpose to my life	.549	-	**.527**	.436	-	-
Goals and Aspirations						
RES59 I plan to go to college after high school	.751	-	-	**.853**	-	-
RES58 I plan to graduate from high school	.679	-	-	**.815**	-	-
RES57 I have goals and plans for the future	.416	-	.323	**.462**	-	-
Empathy						
RES43 I try to understand what others go through	.678	-	-	-	**.798**	-
RES42 I feel bad when someone gets feelings hurt	.550	-	-	-	**.709**	-
RES53 I try to understand what other people feel	.582	-	.328	-	**.649**	-
Communication and Self Efficacy						
RES48 I can do most things if I try	.543	-	-	-	-	**.681**
RES50 There are many things that I do well	.511	-	-	-	-	**.621**
RES49 I can work someone having diferent opinions	.529	.390	-	-	-	**.554**
RES47 I can work out my problems	.451	-	.339	-	-	**.521**

Note: Loadings below 0.3 were suppressed in the table.

Rotation Sums of Squared Loadings of Factors of RDYM Internal Assets

Component	Eigenvalue	% of Variance	Cumulative %
1. Problem Solving & Com.	2.56	14.23	14.23
2. Self Awareness	2.00	11.10	25.33
3. Goals and Aspirations	1.91	10.61	35.94
4. Empathy	1.79	9.94	45.88
5. Self Efficacy	1.70	9.43	55.31

APPENDIX I

CFA MODELS OF RYDM INTERNAL ASSETS

Goodness-of-fit Information for CFA of RDYM Internal Asset Measures for the Total Sample, Girls and Boys

Models			χ^2	df	χ^2/df	GFI	AGFI	CFI	RMSEA	RMR
	TOTAL SAMPLE									
Model 1		5 factor EFA in CFA framework	525.206	125	4.20	0.94	0.91	0.89	0.061	0.047
Model 2	Model 1 +	RES47 does not load on significantly and drop RES47	463.464	109	4.25	0.94	0.92	0.90	0.061	0.046
Model 3	Model 2 +	RES54 and RES57 load on to a new factor called goals	264.931	104	2.55	0.97	0.95	0.95	0.042	0.030
Model 4*	Model 3 +	Separate communication and self efficacy factors	224.906	98	2.29	0.97	0.95	0.96	0.039	0.027
	GIRLS									
Model 1		5 factor EFA in CFA framework	292.901	125	2.34	0.93	0.91	0.89	0.055	0.045
Model 2	Model 1 +	RES47 does not load on significantly and drop RES47	256.464	109	2.35	0.94	0.91	0.90	0.055	0.043
Model 3	Model 2 +	RES54 and RES57 load on to a new factor called goals	210.968	104	2.03	0.95	0.92	0.93	0.049	0.038
Model 4*	Model 3 +	Separate communication and self efficacy factors	195.047	98	1.99	0.95	0.92	0.93	0.048	0.036
	BOYS									
Model 1		5 factor EFA in CFA framework	312.334	125	2.50	0.92	0.89	0.87	0.059	0.058
Model 2	Model 1 +	Separate communication and problem solving factors	274.417	120	2.29	0.93	0.90	0.89	0.055	0.054
Model 3	Model 2 +	RES54 and RES57 load on to a new factor called goals	196.613	114	1.72	0.95	0.92	0.94	0.041	0.037
Model 4*	Model 3 +	RES47 does not load on significantly and drop RES47	158.761	98	1.62	0.96	0.94	0.96	0.038	0.033

* Preferred Model

APPENDIX J

LISREL ESTIMATES OF RDYM-INTERNAL ASSETS FROM THE ESTIMATED CFA MODELS FOR GIRLS AND BOYS GROUPS

J.1 GIRLS

Standardized Lambda-x values, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of RYDM-Internal Assets

Factors and Items	λ_x	SE	t	R^2
Empathy				
RES42 I feel bad when someone gets feelings hurt	0.38	0.04	8.57	0.22
RES43 I try to understand what others go through	0.45	0.04	10.88	0.34
RES53 I try to understand what other people feel	0.57	0.04	12.75	0.48
Problem Solving				
RES44 When I need help I find someone to talk with	0.64	0.05	11.88	0.40
RES45 I know where to go for help with problem	0.76	0.05	13.45	0.53
RES46 I try to work out problems by talking about	0.62	0.05	10.85	0.33
Self Efficacy				
RES48 I can do most things if I try	0.40	0.05	8.59	0.27
RES50 There are many things that I do well	0.48	0.05	9.76	0.42
Communication and Cooperation				
RES49 I can work someone having different opinions	0.33	0.06	5.41	0.10
RES51 I enjoy working together with others	0.41	0.05	7.49	0.21
RES52 I stand up myself without putting someone down	0.34	0.05	7.28	0.19
Goals				
RES54 There is a purpose to my life	0.43	0.04	9.95	0.29
RES57 I have goals and plans for the future	0.55	0.05	11.60	0.43
Self Awareness				
RES55 I understand my moods and feelings	0.60	0.05	11.02	0.42
RES56 I understand why I do what I do	0.59	0.05	11.60	0.43
Educational Aspirations				
RES58 I plan to graduate from high school	0.74	0.04	18.76	0.72
RES59 I plan to go to college after high school	0.89	0.05	18.93	0.74

J.2 BOYS

Standardized Lambda-x values, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of RYDM-Internal Assets

Factors and Items	λ_x	SE	t	R^2
Empathy				
RES42 I feel bad when someone gets feelings hurt	0.54	0.05	10.41	0.32
RES43 I try to understand what others go through	0.54	0.05	11.40	0.39
RES53 I try to understand what other people feel	0.59	0.05	11.67	0.41
Problem Solving				
RES44 When I need help I find someone to talk with	0.68	0.05	12.97	0.43
RES45 I know where to go for help with problem	0.74	0.05	13.42	0.46
RES46 I try to work out problems by talking about	0.65	0.05	12.35	0.40
Self Efficacy				
RES48 I can do most things if I try	0.48	0.05	10.44	0.34
RES50 There are many things that I do well	0.54	0.05	11.18	0.41
Communication and Cooperation				
RES49 I can work someone having different opinions	0.44	0.05	8.52	0.20
RES51 I enjoy working together with others	0.57	0.05	11.62	0.36
RES52 I stand up myself without putting someone down	0.59	0.05	12.38	0.40
Goals				
RES54 There is a purpose to my life	0.67	0.05	13.92	0.56
RES57 I have goals and plans for the future	0.55	0.05	11.33	0.34
Self Awareness				
RES55 I understand my moods and feelings	0.59	0.05	11.94	0.39
RES56 I understand why I do what I do	0.63	0.05	13.77	0.56
Educational Aspirations				
RES58 I plan to graduate from high school	0.77	0.06	12.03	0.56
RES59 I plan to go to college after high school	0.88	0.06	12.13	0.58

APPENDIX K

SCHOLASTIC COMPETENCE

AKADEMİK YETERLİLİK ÖLÇEĞİ

Bana Tamamen Uyuyor	Bana Kısmen Uyuyor				Bana Kısmen Uyuyor	Bana Tamamen Uyuyor
		1. Bazı gençler yaşıtları kadar akıllı olduklarını düşünürler.	**OYSA**	bazıları yaşıtları kadar akıllı olup olmadıklarından pek emin değildirler.		
		2. Bazı gençler derslerini oldukça yavaş yaparlar.	**OYSA**	bazıları derslerini daha hızlı yaparlar.		
		3. Bazı gençler derslerinde çok başarılıdırlar.	**OYSA**	bazıları derslerinde pek başarılı değildirler.		
		4. Bazı gençler derslerde soruları yanıtlamakta güçlük çekerler.	**OYSA**	bazıları hemen her zaman soruları cevaplandırabilirler.		
		5. Bazı gençler kendilerini oldukça zeki bulurlar.	**OYSA**	bazıları zeki olup olmadıkları konusunda kuşkuludurlar.		

APPENDIX L

LISREL ESTIMATES OF SCHOLASTIC COMPETENCE FROM THE ESTIMATED CFA MODELS FOR GIRLS AND BOYS GROUPS

L.1 GIRLS

Standardized Lambda-x values, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of Scholastic Competence

Factors and Items	λ_x	SE	t-value	R^2
Scholastic Competence				
SC1	0.52	0.04	12.19	0.27
SC2	0.57	0.04	13.19	0.33
SC3	0.53	0.04	12.37	0.28
SC4	0.52	0.04	12.21	0.27

L.2 BOYS

Standardized Lambda-x values, Standard Errors, t-values, and Squared Multiple Correlations of the Observed Variables of Scholastic Competence

Factors and Items	λ_x	SE	t-value	R^2
Scholastic Competence				
SC1	0.52	0.04	12.19	0.27
SC2	0.57	0.04	13.19	0.33
SC3	0.53	0.04	12.37	0.28
SC4	0.52	0.04	12.21	0.27

APPENDIX M

BECK HOPELESSNESS SCALE

BECK UMUTSUZLUK ÖLÇEĞİ

Aşağıda geleceğe ait düşünceleri ifade eden bazı cümleler verilmiştir. Lütfen her bir ifadeyi okuyarak, bunların size ne kadar uygun olduğuna karar veriniz. Örneğin, okuduğunuz ilk ifade size uygun ise "Evet", uygun değil ise "Hayır" ifadesinin altındaki kutunun içine (X) işareti koyunuz.

	Sizin için uygun mu?	
	EVET	**HAYIR**
1. Geleceğe umut ve coşku ile bakıyorum.		
2. Kendim ile ilgili şeyleri düzeltemediğime göre çabalamayı bıraksam iyi olur.		
3. İşler kötüye giderken bile herşeyin hep böyle kalmayacağını bilmek beni rahatlatıyor.		
4. Gelecek on yıl içinde hayatımın nasıl olacağını hayal bile edemiyorum.		
5. Yapmayı en çok istediğim şeyleri gerçekleştirmek için yeterli zamanım var.		
6. Benim için çok önemli konularda ileride başarılı olacağımı umuyorum.		
7. Geleceğimi karanlık görüyorum.		
8. Dünya nimetlerinden sıradan bir insandan daha çok yararlanacağımı umuyorum.		
9. İyi fırsatlar yakalayamıyorum. Gelecekte yakalayacağıma inanmam için de hiçbir neden yok.		
10. Geçmiş deneyimlerim beni geleceğe iyi hazırladı.		
11. Gelecek benim için hoş şeylerden çok tatsızlıklarla dolu görünüyor.		
12. Gerçekten özlediğim şeylere kavuşabileceğimi ummuyorum.		
13. Geleceğe baktığımda şimdikine oranla daha mutlu olacağımı umuyorum.		
14. İşler bir türlü benim istediğim gibi gitmiyor.		
15. Geleceğe büyük inancım var.		
16. Arzu ettiğim şeyleri elde edemediğime göre birşeyler istemek aptallık olur.		
17. Gelecekte gerçek doyuma ulaşmam olanaksız gibi.		
18. Gelecek bana bulanık ve belirsiz görünüyor.		
19. Kötü günlerden çok, iyi günler bekliyorum.		
20. İstediğim her şeyi elde etmek için çaba göstermemin gerçekten yararı yok, nasıl olsa onu elde edemeyeceğim.		

APPENDIX N

NOWICKI-STRICKLAND LOCUS OF CONTROL SCALE

NOWICKI-STRICKLAND DENETİM ODAĞI ÖLÇEĞİ

Açıklama:

Aşağıda görüşlerinizle, düşüncelerinizle ilgili bir dizi soru bulunmaktadır. Her soruyu dikkatlice okuyunuz, sorunun cevabı size göre ne ise cevap kağıdına o sorunun karşısındaki "**evet**" ya da "**hayır**" sütunlarından birine çarpı (X) işareti koyarak fikirlerinizi belirtiniz. Bu bir sınav değildir, cevaplarınız gizli kalacak ve sadece gençlerle ilgili bir araştırmada kullanılacaktır. Doğru ve içten cevap vermeniz araştırmanın değerini artıracaktır.

	EVET	HAYIR
1. Siz çaba harcamasanız da çoğu güçlüğün kendiliğinden çözüleceğine inanır mısınız?		
2. Üşütüp hasta olmayı engelleyebileceğinize inanıyor musunuz?		
3. Bazı çocuklar doğuştan şanslı mıdır?		
4. Genellikle iyi notlar almanın sizin için çok önemli olduğu kanısında mısınız?		
5. Kendi kusurunuz olmayan şeylerden dolayı sık sık suçlandığınız olur mu?		
6. Herhangi bir kişinin yeterince çalışırsa her dersten geçebileceğine inanır mısınız?		
7. Nasıl olsa hiçbir şeyin istenen biçimde sonuçlanmadığı düşüncesiyle, çok çalışmanın hiçbir işe yaramadığı kanısında mısınız?		
8. Sabahı iyi başlayan bir günün, ne yaparsanız yapın iyi bir gün olacağına inanır mısınız?		
9. Ana-babaların, çocukların söylediklerine genellikle gereken önemi verdikleri kanısında mısınız?		
10. İyi dileklerde bulunmanın, iyi şeylerin oluşmasını sağlayacağına inanıyor musunuz?		
11. Cezalandırıldığınız zaman, genellikle bunun uygun bir nedene dayanmadığı izleniminde mi olursunuz?		
12. Bir arkadaşınızın düşüncesini değiştirmenin genellikle güç olduğu kanısında mısınız?		
13. İzleyicilerin alkış ve tezahüratlarının, bir takımın kazanmasına şanstan daha fazla yardım edeceği kanısında mısınız?		
14.Herhangi bir konuya ilişkin olarak ana-babanızın düşüncesini değiştirebilmenin hemen hemen olanaksız olduğu kanısında mısınız?		
15. Kararlarınızın çoğunun kendiniz tarafından alınmasını ana-babanızın hoşgörüyle karşılaması gerektiği inancında mısınız?		
16. Yanlış bir şey yaptığınızda onu düzeltmek için yapabileceğiniz pek bir şey olmadığı kanısında mı olursunuz?		
17. Çocukların çoğunun sporda doğuştan yetenekli olduğuna inanıyor musunuz?		
18. Yaşıtlarınızın çoğunun sizden daha güçlü olduğu kanısında mısınız?		

	EVET	HAYIR
19. Sorunların çoğunu çözmenin en iyi yollarından birisinin onlara boş vermek olduğu kanısında mısınız?		
20. Arkadaşlarınızı seçmede birçok seçeneğiniz olduğu kanısında mısınız?		
21. Dört yapraklı bir yonca bulsanız, bunun size uğur getireceğine inanır mısınız?		
22. Ödevlerinizi yapıp yapmamanın alacağınız notlar üzerinde etkili olduğu kanısında mısınız?		
23. Kendi yaşınızdaki bir kimse size vurmaya kalkışırsa onu durdurmak için yapabileceğiniz pek bir şey olmadığı kanısında mısınız?		
24. Uğur getirdiğine inandığınız herhangi bir şeyi hiç taşıdınız mı?		
25. İnsanların sizden hoşlanıp hoşlanmamalarının kendi davranışlarınıza bağlı olduğu kanısında mısınız?		
26. Ana-babanızdan yardım istediğinizde genellikle size yardımcı olurlar mı?		
27. Size kötü davrandıklarında, genellikle bunun sebepsiz yere olduğu duygusuna kapılır mısınız?		
28.Çoğunlukla bugün yaptıklarınızla gelecekte olabilecekleri değiştirebileceğiniz kanısında mısınız?		
29. Ne yaparsanız yapınız olabilecek kötü şeyleri durduramayacağınıza inanıyor musunuz?		
30. Eğer sürekli çaba gösterirlerse çocukların ya da gençlerin kendi yaşamlarına yön verebilecekleri kanısında mısınız?		
31. Evinizde işlerin istediği biçimde olması için çalışmanızın genellikle yararlı olmayacağı kanısında mısınız?		
32. İyi şeylerin ancak çok çalışma sonucunda oluşturulabileceği kanısında mısınız?		
33. Yaşıtlarınızdan birinin size düşmanca davranacağını hissettiğinizde bu durumu değiştirmek için yapabileceğiniz pek birşey olmadığını mı düşünüyorsunuz?		
34. Arkadaşlarınıza istediğiniz birşeyi yaptırmanın kolay olduğu kanısında mısınız?		
35. Genellikle, evde ne yemek istediğinize ilişkin size pek fazla söz düşmediği kanısında mısınız?		
36. Biri sizden hoşlanmadığında bu konuda yapabileceğiniz pek fazla birşey olmadığı kanısında mısınız?		
37. Diğer çocukların çoğunun sizden daha akıllı olması nedeniyle okulda çaba göstermenin pek yararlı olmadığı kanısında mısınız?		
38. Önceden planlamanın işleri daha iyi sonuçlandıracağına inanır mısınız?		
39. Çoğunlukla aile kararları üzerinde pek etkili olmadığınız kanısında mısınız?		
40. Akıllı olmanın şanslı olmaktan daha iyi olduğunu düşünüyor musunuz?		

APPENDIX O

PERMISSION LETTER FOR RESEARCH

T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

17/01/2003

BÖLÜM: Kültür
SAYI : B.08.4.MEM.4.06.00.11.070/214
KONU : Anket

VALİLİK MAKAMINA
ANKARA

İLGİ: T.C.Orta Doğu Teknik Üniversitesi,Öğrenci İşleri Dairesi Başkanlığı'nın 02.01.2003 tarih ve 375 sayılı yazısı.

T.C.Orta Doğu Teknik Üniversitesi, Öğrenci İşleri Dairesi Başkanlığından alınan ilgide kayıtlı yazıda, adı geçen üniversite Eğitim Bilimleri doktora programı öğrencisi Cem Ali GİZİR'in, 15 Haziran 2003 tarihine kadar ekli listede isimleri belirtilen ilimiz okullarında anket yapabilmesi için ilgi yazı ile izin istemektedir.

Kamu kurum ve kuruluşlarında uygulanan Devlet Memurları Kılık Kıyafet Yönetmeliği ve Okullarda uyulması gereken usul ve esaslara özen gösterilmesi, ad-soyad kullanılmaması ve sonucundan Müdürlüğümüze bilgi verilmesi kaydıyla söz konusu istek uygun görülmektedir.

Makamlarınızca da uygun görüldüğü takdirde olurlarınıza arz ederim.

Murat Bey BALTA
Milli Eğitim Müdür V.

OLUR
16/01/2003

Orhan KIRLI
Vali a.
Vali Yardımcısı

APPENDIX P

THE SIMPLIS SYNTAXES FOR THE EXTERNAL PROTECTIVE FACTORS MODEL FOR TOTAL SAMPLE, GIRLS, AND BOYS

P.1 The SIMPLIS Syntax For The External Factors Model Estimated For Total Sample

External Factors Model for Total Group (SEM1)

Observed variables
GPA6 GPA7 GPA8
RES6 RES7 RES8 RES9 RES10 RES11 RES13 RES14 RES15
RES18 RES19 RES20 RES21 RES22 RES23 RES24 RES25
RES27 RES28 RES29 RES31 RES32
RES34 RES36 RES38 RES33 RES35 RES37 RES39 RES40 RES41

Covariance Matrix From File total1.cov
Sample Size 872

Latent Variables: Achieve Schcahi Schmean Comcahi Commean Peercare Peerhigh Homecare Homehigh Homemean

Relationships:
GPA6 GPA7 GPA8 = Achieve
RES6 RES7 RES8 RES9 RES10 RES11 = Schcahi
RES13 RES14 RES15 = Schmean
RES18 RES19 RES20 RES21 RES22 RES23 = Comcahi
RES24 RES25 = Commean
RES27 RES28 RES29 = Peercare
RES31 RES32 = Peerhigh
RES34 RES36 RES38 = Homecare
RES33 RES35 RES37 = Homehigh
RES39 RES40 RES41 = Homemean
Gpa = Schcahi - Homemean

Set to Error Covariance Between RES35 and RES11 Free
Set to Error Covariance Between RES22 and RES21 Free
Set to Error Covariance Between RES37 and RES22 Free
Path Diagram
Number of Decimals = 3
Wide Print
Print Residuals
Admissibility Check = 25
Iterations = 25
Method of Estimation = Maximum Likelihood
End of Problem

P.2 The SIMPLIS Syntax For The External Factors Model Estimated For Girls

External Factors Model for Girls (SEM2)

Observed variables
GPA6 GPA7 GPA8
RES6 RES7 RES8 RES9 RES10 RES11 RES13 RES14 RES15
RES18 RES19 RES20 RES21 RES22 RES23 RES24 RES25
RES27 RES28 RES29 RES31 RES32
RES34 RES36 RES38 RES33 RES35 RES37 RES39 RES40 RES41

Covariance Matrix From File girls1.cov
Sample Size 439

Latent Variables: Achieve Schcahi Schmean Comcahi Commean Peercare Peerhigh Homecare Homehigh Homemean

Relationships:
GPA6 GPA7 GPA8 = Achieve
RES6 RES7 RES8 RES9 RES10 RES11 = Schcahi
RES13 RES14 RES15 = Schmean
RES18 RES19 RES20 RES21 RES22 RES23 = Comcahi
RES24 RES25 = Commean
RES27 RES28 RES29 = Peercare
RES31 RES32 = Peerhigh
RES34 RES36 RES38 = Homecare
RES33 RES35 RES37 = Homehigh
RES39 RES40 RES41 = Homemean
Gpa = Schcahi - Homemean

Set to Error Covariance Between RES35 and RES21 Free
Set to Error Covariance Between RES22 and RES9 Free
Set to Error Covariance Between RES35 and RES11 Free
Set to Error Covariance Between RES27 and RES6 Free
Set to Error Covariance Between RES22 and RES21 Free

Path Diagram
Number of Decimals = 3
Wide Print
Print Residuals
Admissibility Check = 25
Iterations = 25
Method of Estimation = Maximum Likelihood
End of Problem

P.3 The SIMPLIS Syntax For The External Factors Model Estimated For Boys

External Factors Model for Boys (SEM3)

Observed variables
GPA6 GPA7 GPA8
RES6 RES7 RES8 RES9 RES10 RES11 RES13 RES14 RES15
RES18 RES19 RES20 RES21 RES22 RES23 RES24 RES25
RES27 RES28 RES29 RES31 RES32
RES34 RES36 RES38 RES33 RES35 RES37 RES39 RES40 RES41

Covariance Matrix From File boys1.cov
Sample Size 433

Latent Variables: Achieve Schcahi Schmean Comcahi Commean Peercare Peerhigh Homecare Homehigh Homemean

Relationships:
GPA6 GPA7 GPA8 = Achieve
RES6 RES7 RES8 RES9 RES10 RES11 = Schcahi
RES13 RES14 RES15 = Schmean
RES18 RES19 RES20 RES21 RES22 RES23 = Comcahi
RES24 RES25 = Commean
RES27 RES28 RES29 = Peercare
RES31 RES32 = Peerhigh
RES34 RES36 RES38 = Homecare
RES33 RES35 RES37 = Homehigh
RES39 RES40 RES41 = Homemean
Gpa = Schcahi - Homemean

Set to Error Covariance Between RES35 and RES11 Free
Set to Error Covariance Between RES19 and RES7 Free
Set to Error Covariance Between RES27 and RES18 Free
Set to Error Covariance Between RES37 and RES22 Free

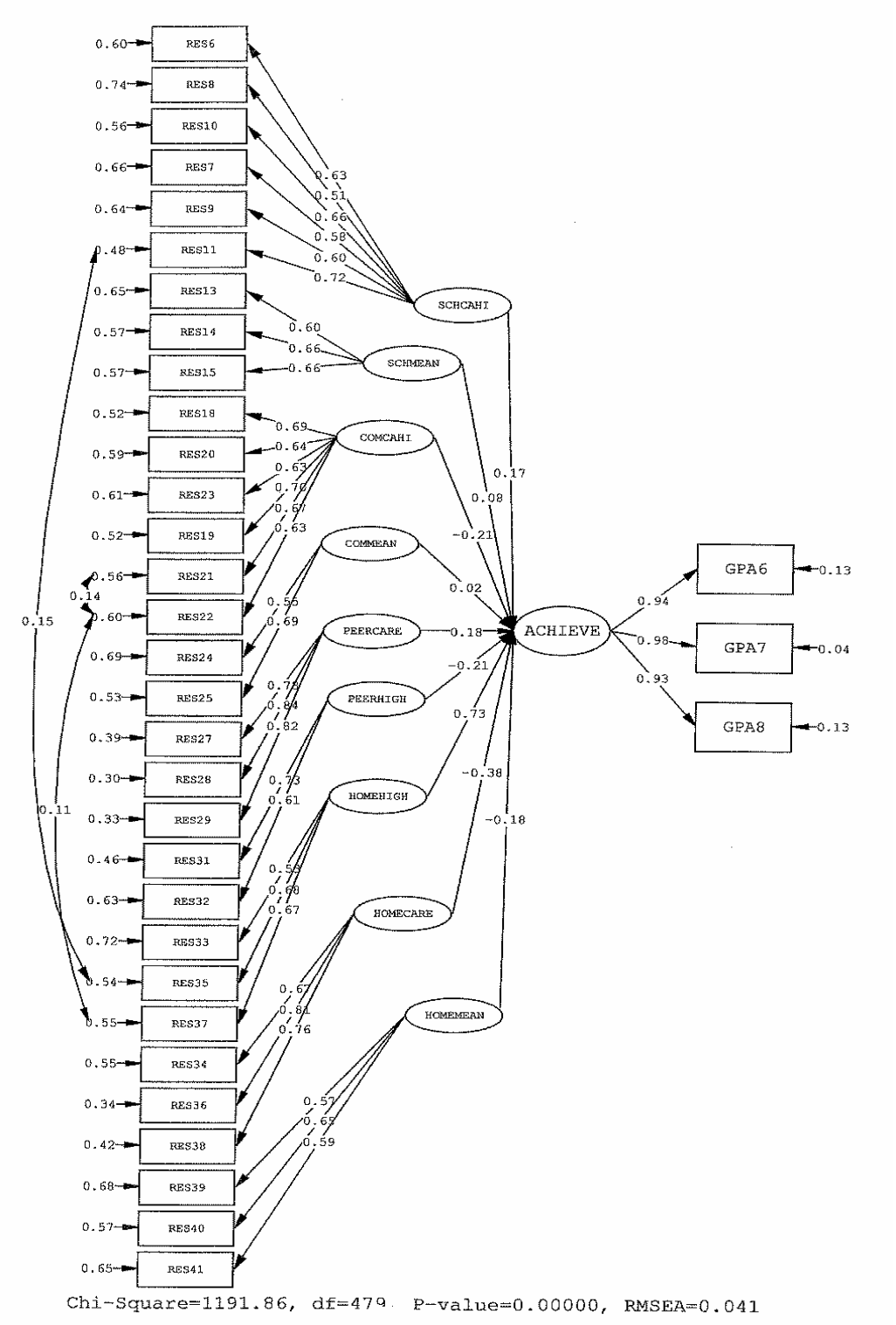
Path Diagram
Number of Decimals = 3
Wide Print
Print Residuals
Admissibility Check = 25
Iterations = 25
Method of Estimation = Maximum Likelihood
End of Problem

APPENDIX R

LISREL ESTIMATES OF PARAMETERS IN THE MEASUREMENT MODEL OF EXTERNAL PROTECTIVE FACTORS WITH COEFFICIENTS IN STANDARDIZED VALUES AND *T*-VALUES FOR TOTAL SAMPLE, GIRLS AND BOYS

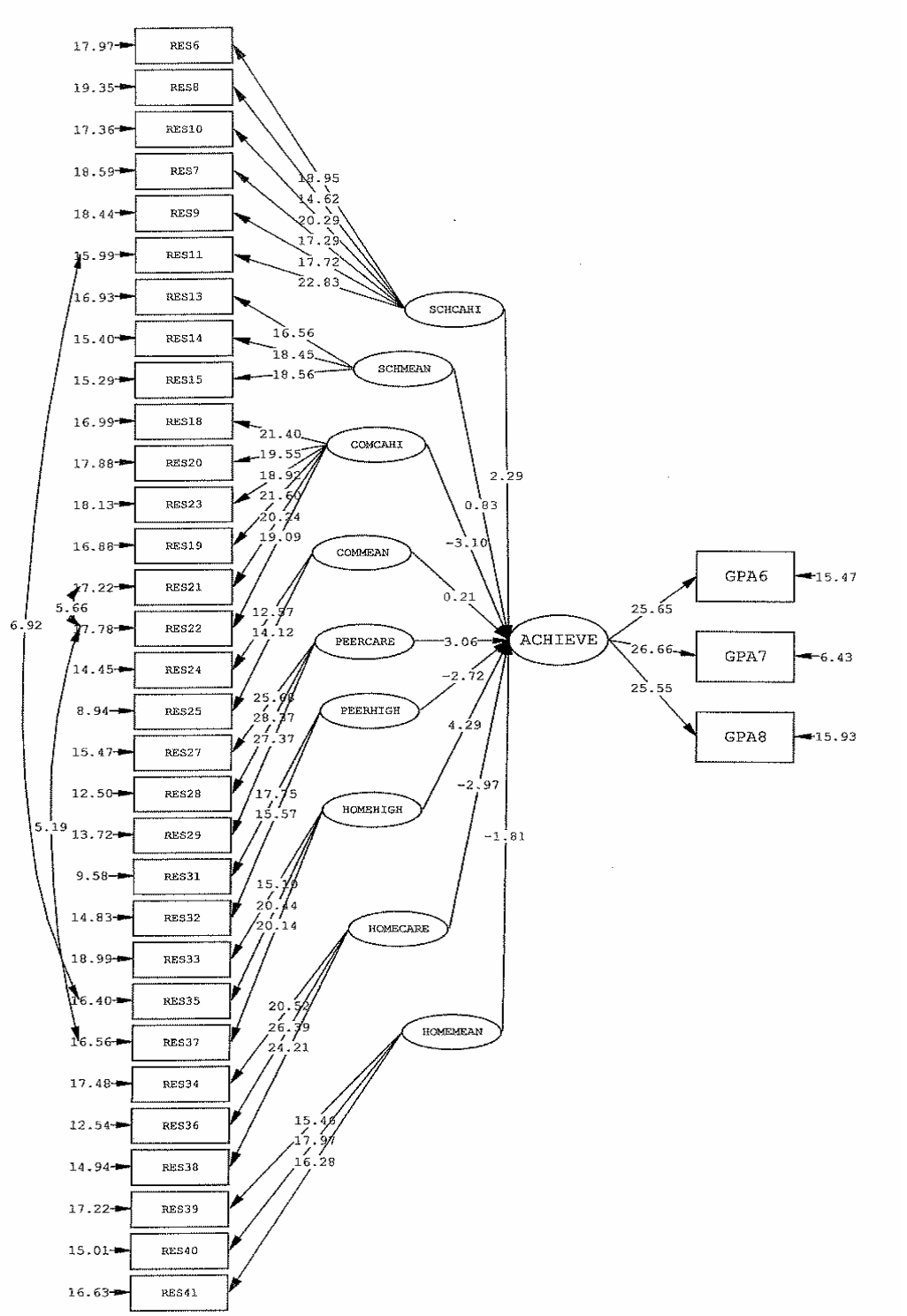
R.1A LISREL Estimates of Parameters in Measurement Model of External Protective Factors with Coefficients in Standardized Values

TOTAL SAMPLE



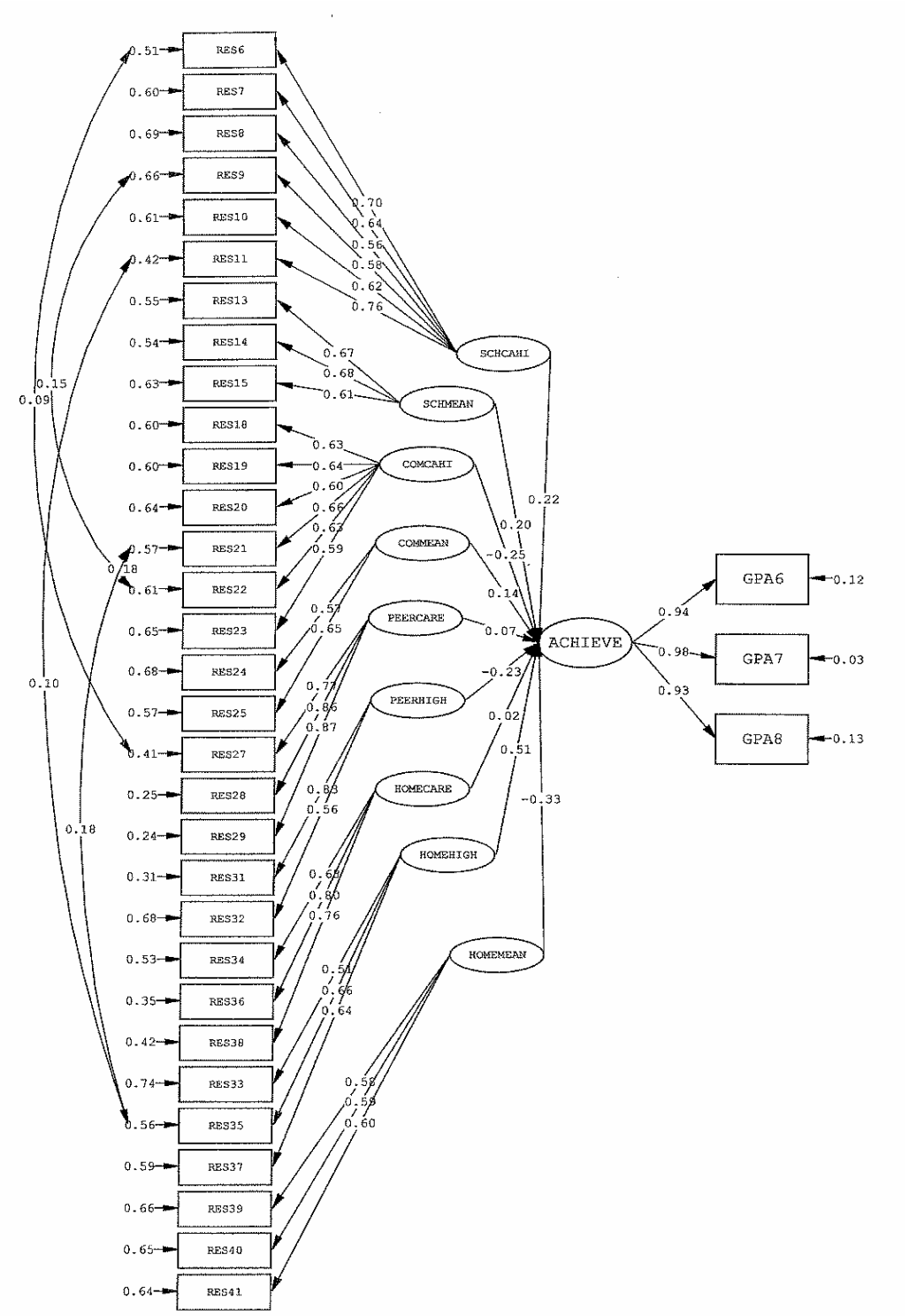
R.1B LISREL Estimates of Parameters in Measurement Model of External Protective Factors with Coefficients in t-Values

TOTAL SAMPLE



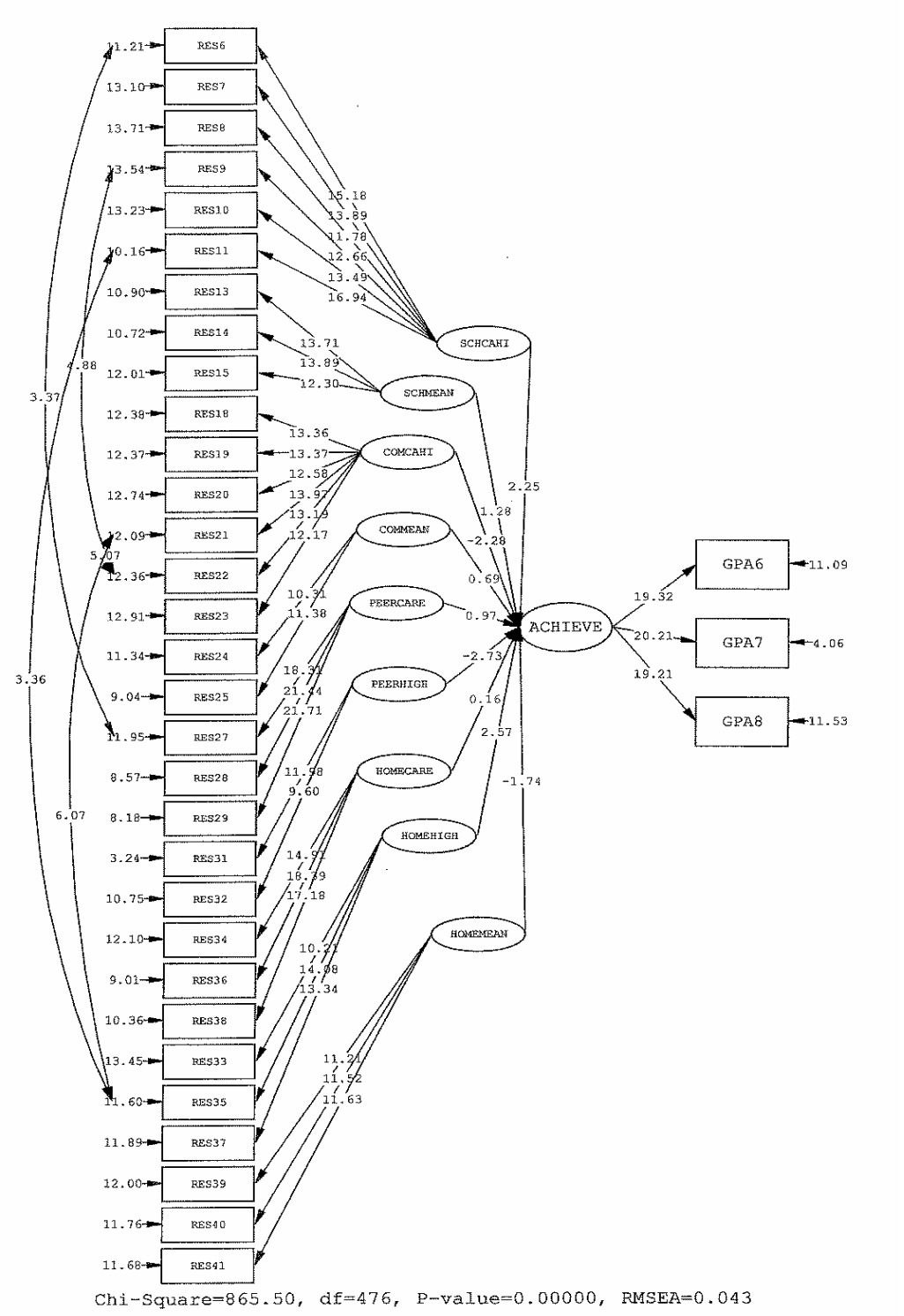
R.2A LISREL Estimates of Parameters in Measurement Model of External Protective Factors with Coefficients in Standardized Values

GIRLS



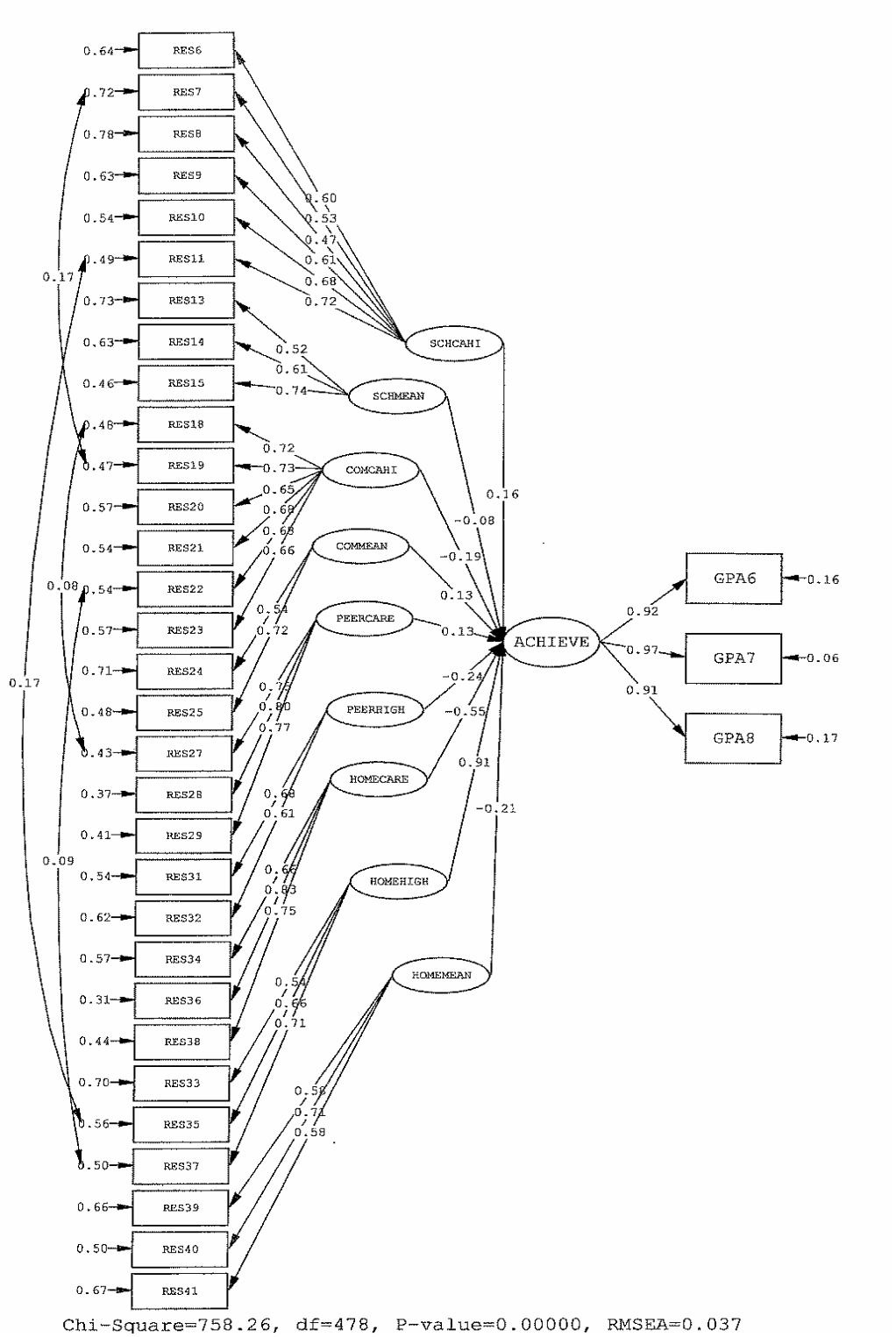
R.2B LISREL Estimates of Parameters in Measurement Model of External Protective Factors with Coefficients in t-Values

GIRLS



R.3A LISREL Estimates of Parameters in Measurement Model of External Protective Factors with Coefficients in Standardized Values

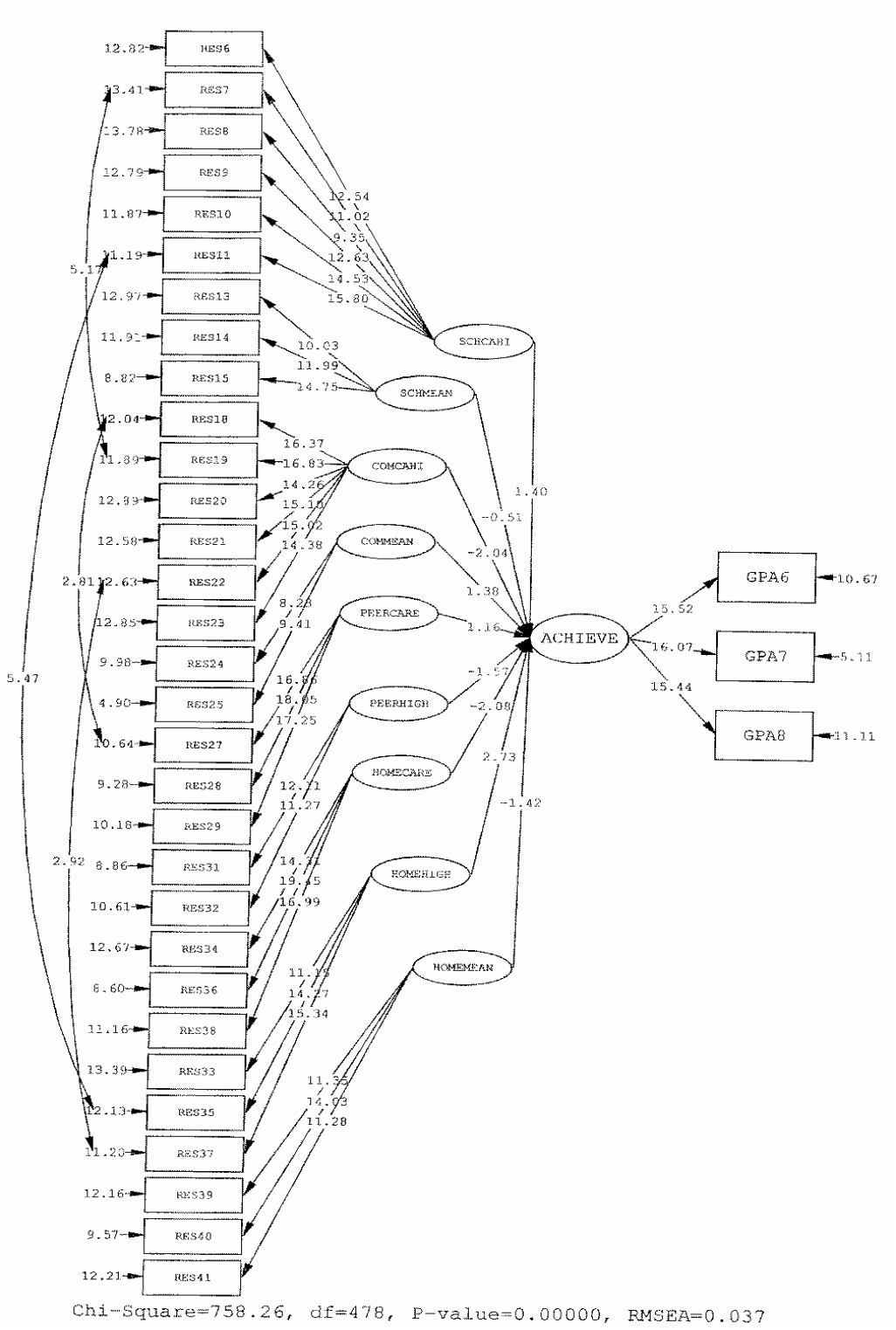
BOYS



Chi-Square=758.26, df=478, P-value=0.00000, RMSEA=0.037

R. 3B LISREL Estimates of Parameters in Measurement Model of External Protective Factors with Coefficients in t- Values

BOYS



APPENDIX S

THE SIMPLIS SYNTAXES FOR THE INTERNAL PROTECTIVE FACTORS MODEL FOR TOTAL SAMPLE, GIRLS, AND BOYS

S.1 The SIMPLIS Syntax For The Internal Factors Model Estimated For Total Sample

Internal Factors Model for Total Group (SEM4)

Observed variables
RES42 RES43 RES53 RES44 RES45 RES46 RES48 RES50
RES49 RES51 RES52 RES54 RES57 RES55 RES56 RES58 RES59
HOPEFULL LOCUSOFC SP1 SP19 SP28 SP37 GPA6 GPA7 GPA8

Covariance Matrix From File total2.cov
Sample Size 872

Latent Variables: Empathy Problem Efficacy Communication Goals Awaranes Aspiration Hopeless Locus Scholastic Achieve

Relationships:
RES42 RES43 RES53 = Empathy
RES44 RES45 RES46 = Problem
RES48 RES50 = Efficacy
RES49 RES51 RES52 = Communication
RES54 RES57 = Goals
RES55 RES56 = Awaraness
RES58 RES59 = Aspiration
HOPEFULL = 1*Hopeless
LOCUSOFC = 1*Locus
SP1 SP19 SP28 SP37 = Scholastic
GPA6 GPA7 GPA8 = Achieve
Achieve = Empathy – Scholastic

Set to Error Variance of HOPEFULL to 0
Set to Error Variance of LOCUSOFC to 0

Path Diagram
Number of Decimals = 3
Wide Print
Print Residuals
Admissibility Check = 30
Iterations = 30
Method of Estimation = Maximum Likelihood
End of Problem

S.2 The SIMPLIS Syntax For The Internal Factors Model Estimated For Girls

Internal Factors Model for Girls (SEM5)

Observed variables
RES42 RES43 RES53 RES44 RES45 RES46 RES48 RES50
RES49 RES51 RES52 RES54 RES57 RES55 RES56 RES58 RES59
HOPEFULL LOCUSOFC SP1 SP19 SP28 SP37 GPA6 GPA7 GPA8

Covariance Matrix From File girls2.cov
Sample Size 439

Latent Variables: Empathy Problem Efficacy Communication Goals Awaranes Aspiration Hopeless Locus Scholastic Compete Achieve

Relationships:
RES42 RES43 RES53 = Empathy
RES44 RES45 RES46 = Problem
RES48 RES50 = Efficacy
RES49 RES51 RES52 = Communication
RES54 RES57 = Goals
RES55 RES56 = Awaraness
RES58 RES59 = Aspiration
HOPEFULL = 1*Hopeless
LOCUSOFC = 1*Locus
SP1 SP19 SP28 SP37 = Scholastic
GPA6 GPA7 GPA8 = Achieve
Achieve = Empathy – Scholastic

Set to Error Variance of HOPEFULL to 0
Set to Error Variance of LOCUSOFC to 0
Set to Error Covariance Between RES53 and RES42 Free
Set to Error Covariance Between RES56 and RES52 Free

Path Diagram
Number of Decimals = 3
Wide Print
Print Residuals
Admissibility Check = 30
Iterations = 30
Method of Estimation = Maximum Likelihood
End of Problem

S.3 The SIMPLIS Syntax For The Internal Factors Model Estimated For Boys

Internal Factors Model for Boys (SEM6)

Observed variables
RES42 RES43 RES53 RES44 RES45 RES46 RES48 RES50
RES49 RES51 RES52 RES54 RES57 RES55 RES56 RES58 RES59
HOPEFULL LOCUSOFC SP1 SP19 SP28 SP37 GPA6 GPA7 GPA8

Covariance Matrix From File boys2.cov
Sample Size 433

Latent Variables: Empathy Problem Efficacy Communication Goals Awaranes Aspiration Hopeless Locus Scholastic Achieve

Relationships:
RES42 RES43 RES53 = Empathy
RES44 RES45 RES46 = Problem
RES48 RES50 = Efficacy
RES49 RES51 RES52 = Communication
RES54 RES57 = Goals
RES55 RES56 = Awaraness
RES58 RES59 = Aspiration
HOPEFULL = 1*Hopeless
LOCUSOFC = 1*Locus
SP1 SP19 SP28 SP37 = Scholastic
GPA6 GPA7 GPA8 = Achieve
Achieve = Empathy – Scholastic

Set to Error Variance of HOPEFULL to 0
Set to Error Variance of LOCUSOFC to 0
Set to Error Covariance Between RES43 and RES42 Free
Set to Error Covariance Between RES53 and RES42 Free
Set to Error Covariance Between RES45 and RES44 Free

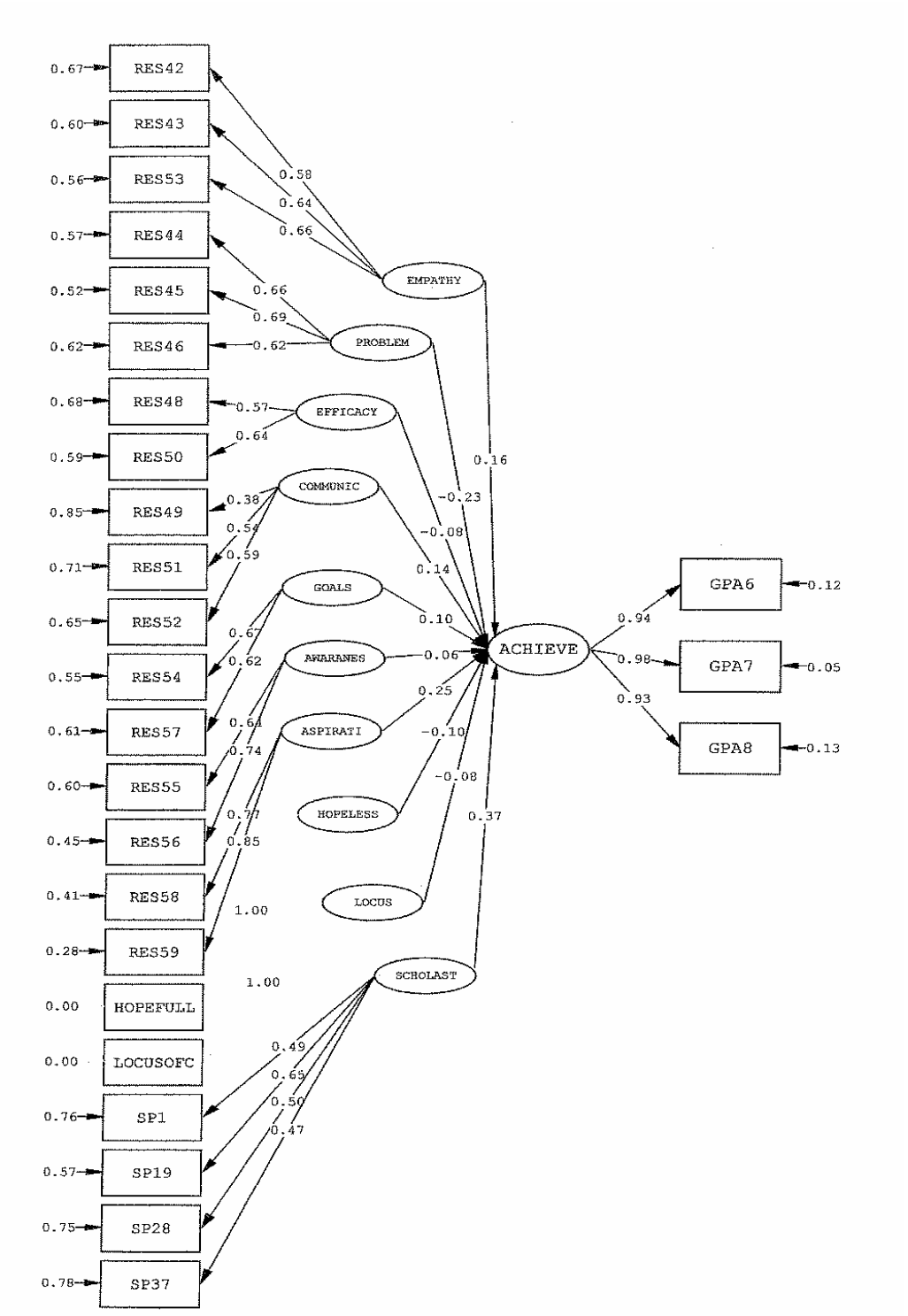
Path Diagram
Number of Decimals = 3
Wide Print
Print Residuals
Admissibility Check = 30
Iterations = 30
Method of Estimation = Maximum Likelihood
End of Problem

APPENDIX T

LISREL ESTIMATES OF PARAMETERS IN THE MEASUREMENT MODEL OF INTERNAL PROTECTIVE FACTORS WITH COEFFICIENTS IN STANDARDIZED VALUES AND *T*-VALUES FOR TOTAL SAMPLE, GIRLS AND BOYS

T.1A LISREL Estimates of Parameters in Measurement Model of Internal Protective Factors with Coefficients in Standardized Values

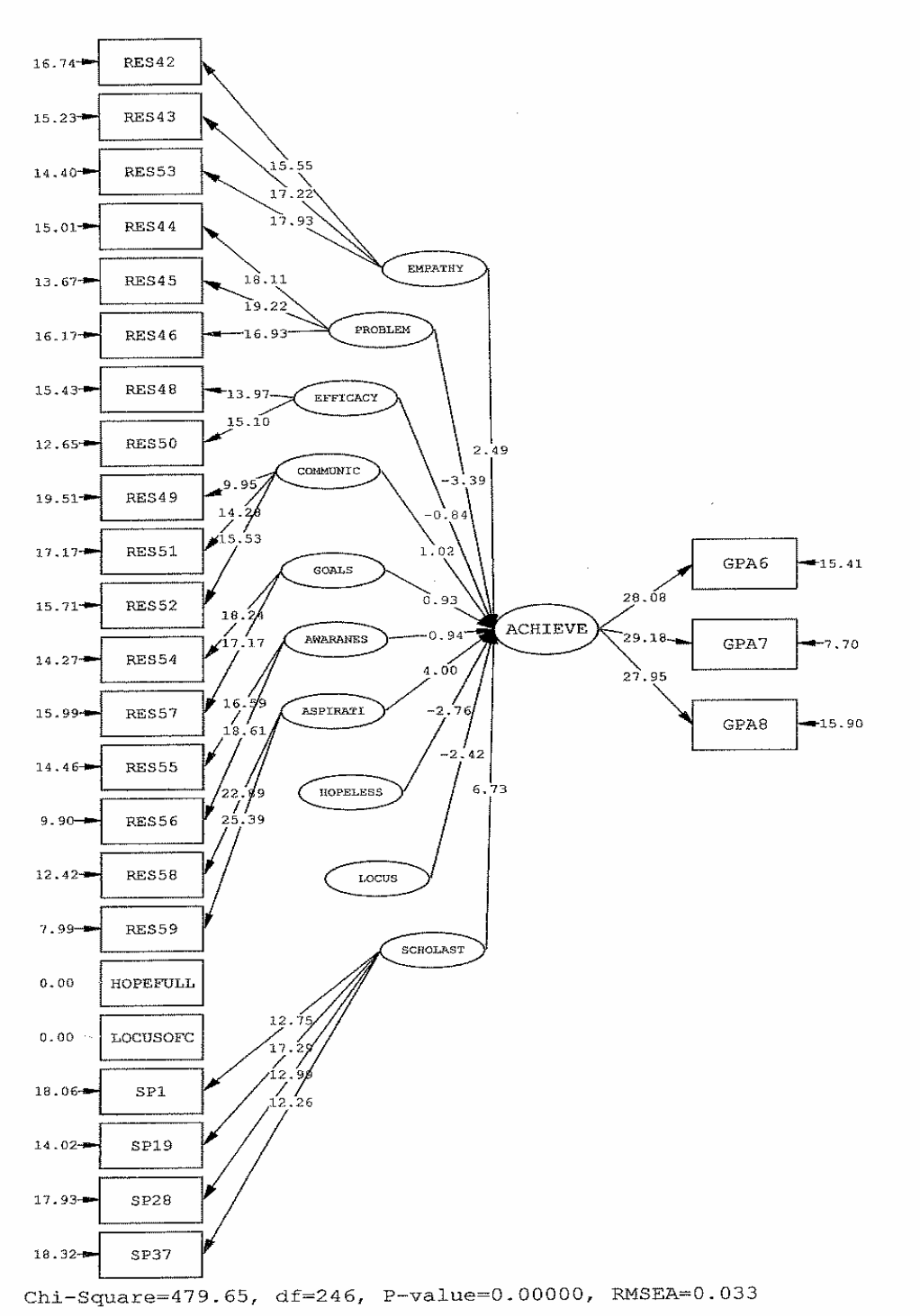
TOTAL SAMPLE



Chi-Square=479.65, df=246, P-value=0.00000, RMSEA=0.033

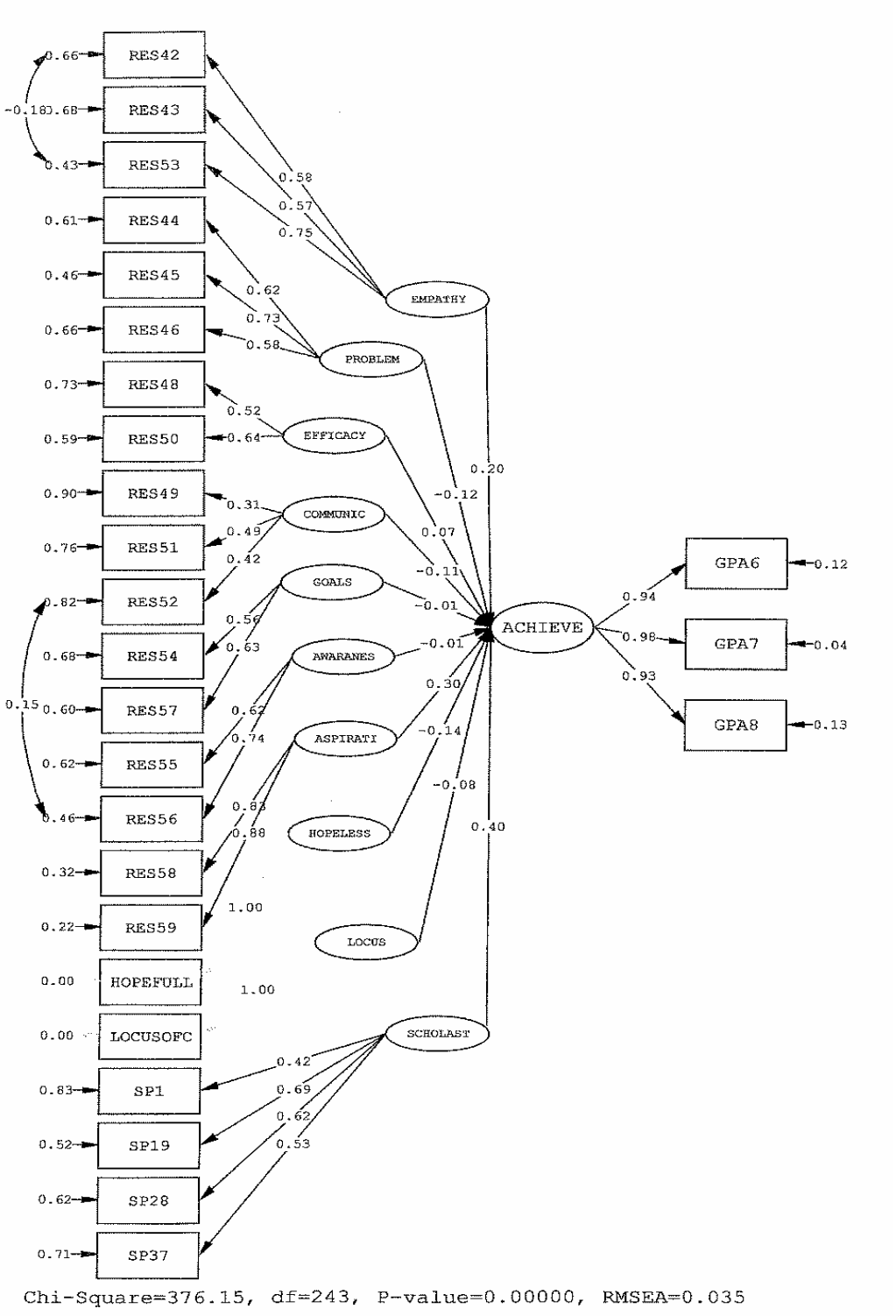
T.1B LISREL Estimates of Parameters in Measurement Model of Internal Protective Factors with Coefficients in t- Values

TOTAL SAMPLE



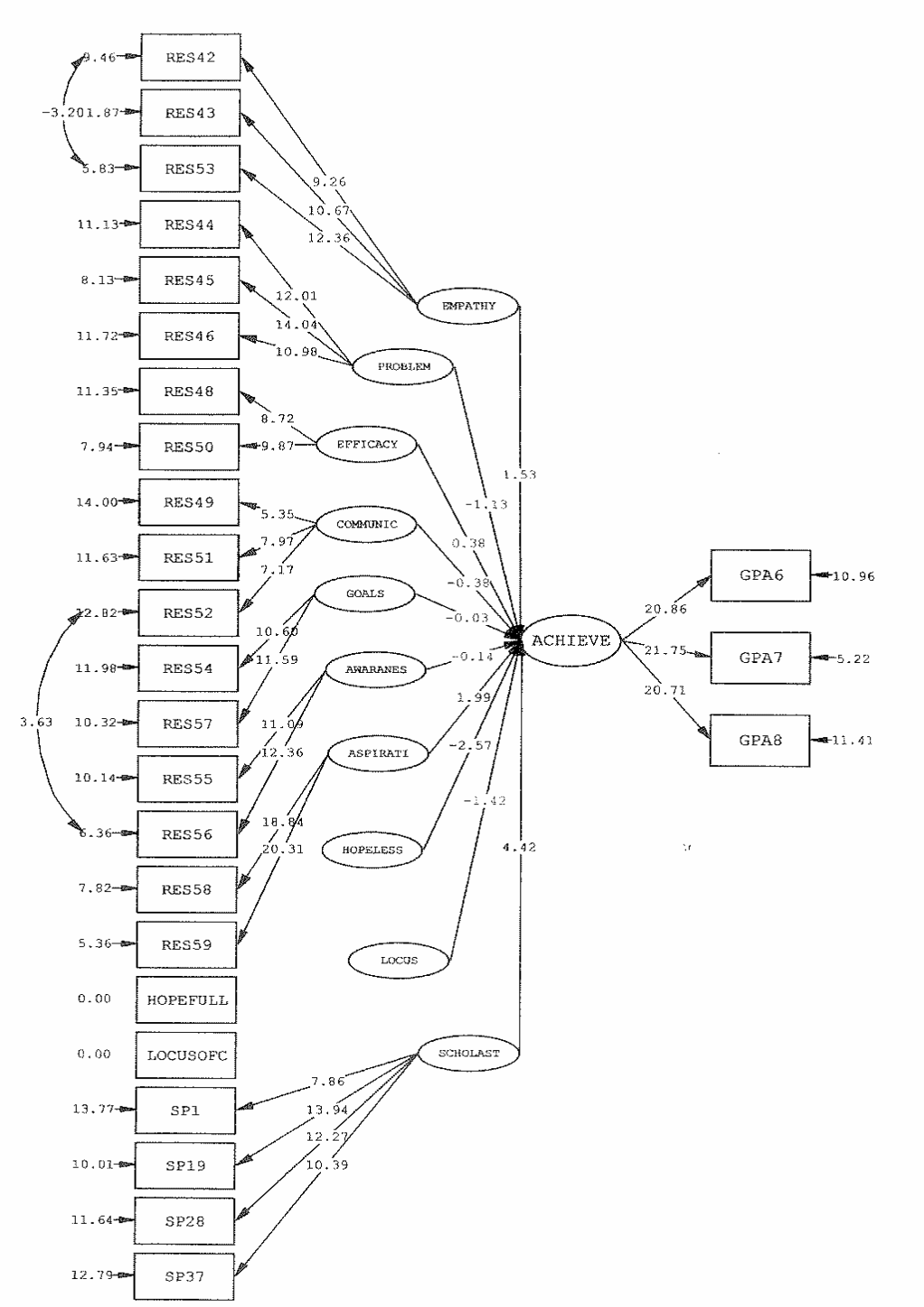
T.2A LISREL Estimates of Parameters in Measurement Model of Internal Protective Factors with Coefficients in Standardized Values

GIRLS



T.2B LISREL Estimates of Parameters in Measurement Model of Internal Protective Factors with Coefficients in t- Values

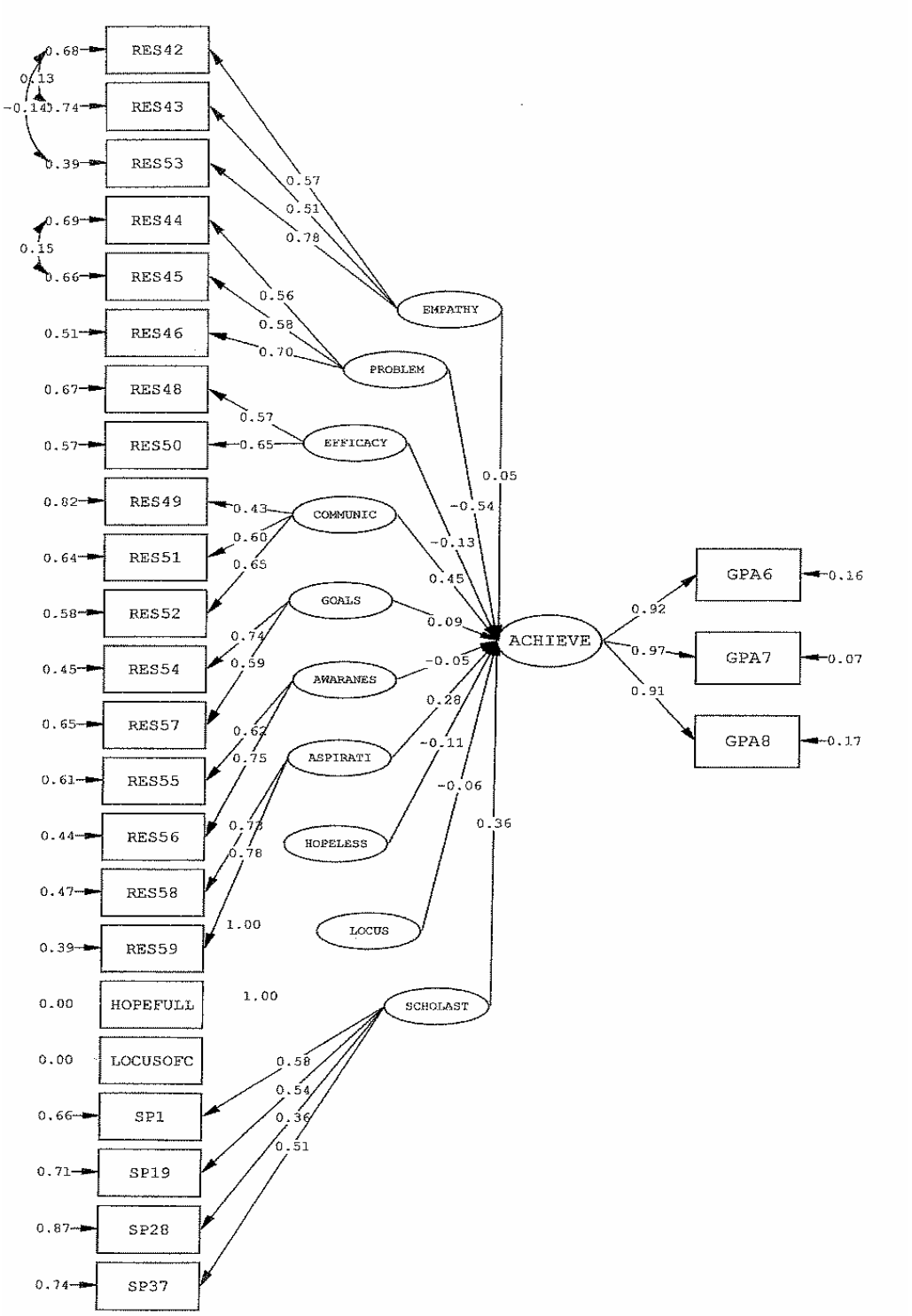
GIRLS



Chi-Square=376.15, df=243, P-value=0.00000, RMSEA=0.035

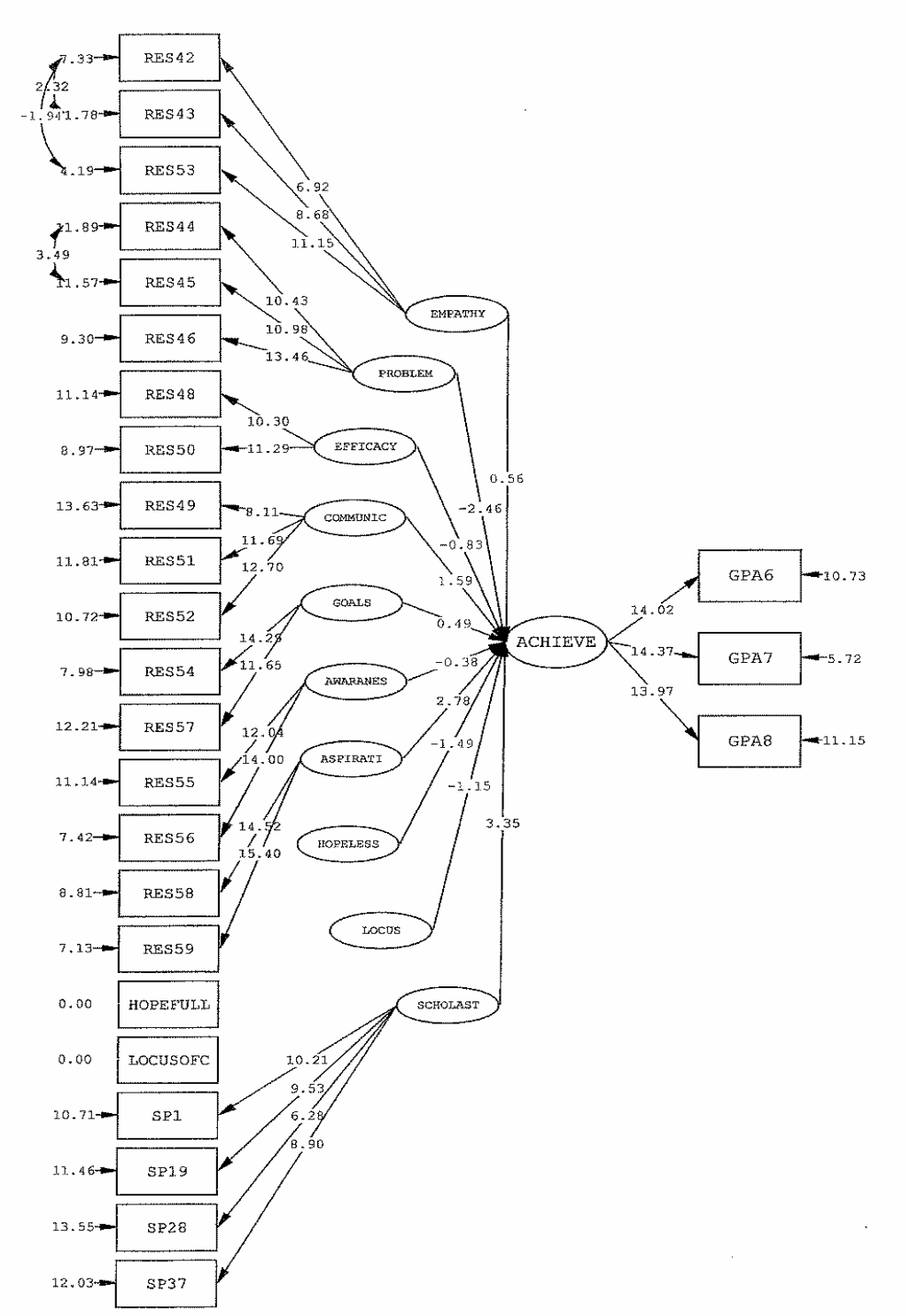
T.3A LISREL Estimates of Parameters in Measurement Model of Internal Protective Factors with Coefficients in Standardized Values

BOYS



T.3B LISREL Estimates of Parameters in Measurement Model of Internal Protective Factors with Coefficients in t- Values

BOYS



Chi-Square=347.72, df=243, P-value=0.00001, RMSEA=0.032

APPENDIX U

TURKISH SUMMARY

AKADEMİK SAĞLAMLIK: YOKSULLUK İÇİNDEKİ SEKİZİNCİ SINIF ÖĞRENCİLERİNİN AKADEMİK BAŞARILARINA KATKIDA BULUNAN KORUYUCU FAKTÖRLERİN İNCELENMESİ

GİRİŞ

Çocukluk ve ergenlik dönemi ile bu dönemlerdeki risk ve sağlamlık (resilience) kavramlarının incelenmesi, araştırma ve uygulama alanlarında ve birinci basamak koruyucu/önleyici hizmetler açısından giderek gelişen ve popüler olan kavramlar haline gelmiş ve gelişim psikolojisi, psikolojik danışmanlık ve rehberlik ile psikiyatri literatürlerinde giderek ilgi çeken konular olmuşlardır.

Olumsuz ve zorlu koşullarda yaşayan aileler ve çocuklara yardım hizmetlerine ayrılan bütçelerin yetersizliği ya da ilgili bütçelerin giderek azaltılması, olumsuz yaşam olaylarına karşı sağlamlığı arttıracak düşük maliyetli araştırma, geliştirme ve uygulama yöntemlerinin geliştirilmesini zorunlu kılmaktadır. Risk altındaki çocuk ve ergenlerde sağlamlığı geliştirecek ya da artıracak bilgilerin kazanılması ve uygun yöntemlerin geliştirilmesi okul, toplum ve aile hizmetleri alanlarındaki önleyici çalışmaların etkinliğini de artıracaktır (Kumpfer, 1999).

Risk ve örseleyici yaşam olayları altında yetişen çocuk ve ergenlerin, gelişimlerini tehdit eden tüm olumsuzluklara rağmen nasıl başarılı olabildiklerini ve sağlam kalabildiklerini anlamak, benzer riskler altındaki diğer çocuk ve gençlere yönelik yapılabilecek önleyici çalışmalara ışık tutacaktır.

Yukarıda sayılan nedenlerle sağlamlık kavramı önleyici çalışmalar içerisinde ilgi çekici ve etkili bir kavram haline gelmeye başlamıştır. Psikolojik danışmanlar, toplum hizmetlileri, eğitimciler ve sosyal bilimciler, risk altında yetişen çocukların gelecekte karşılaşabilecekleri olumsuz durumların sıklığını ve yaygınlığını azaltabilmek için önleyici programlar geliştirme, uygulama ve değerlendirme çabası içindedirler.

Sağlamlık Kavramı

Sağlamlık kavramı; Latince "resiliens" (sağlam) kökünden türemiştir ve bir maddenin elastik olması ve aslına kolayca dönebilmesini ifade etmektedir (Greene, 2002). The Random House Sözlüğü'ne (1967) göre sağlamlık "sıkıştırılıp ya da esnetildikten sonra orijinal formuna ya da pozisyonuna dönebilme becerisi" olarak tanımlanmıştır. Webster Yeni Yirminci Yüzyıl İngilizce Sözlüğü'ne (1958) göre de sağlamlık "sıkıştırıldıktan sonra eski haline gelmek/dönmek ve güç ve enerji, cesaret kazanmak" anlamına gelmektedir. Amerikan Heritage Sözlüğü'nde (1973) ise sağlamlık "değişim, hastalık ve kötü kaderden hızlıca kurtulma, iyileşme" anlamını taşımaktadır. Kavramın anlamı ve tanımı konusunda tam bir uzlaşma olmasa da, aşağıdaki sunulan tanımlar kavramın tam olarak anlaşılmasına katkı sağlamak açısından önemli sayılmaktadır.

"Sağlamlık, bir çocuğun stresle nasıl baş ettiği ve travmadan kurtulduğu/iyileştiği ile ilgilenen genel bir kavramdır. Sağlamlık, olumlu baş etmenin sonuçları olan uyum ve yeterlik gibi olumlu gelişme, geleceğe yönelme ve umut ile ilgilidir" (Murphy, 1987, s.101).

Fraser, Richman ve Galinsky (1999, s.136) ise sağlamlığı "zor koşullar altında olumlu ve beklenmedik başarılar kazanma ve sıra dışı koşul ve durumlara uyum sağlama becerisi" olarak tanımlamışlardır.

Masten, Best ve Garmezy, (1990; aktaran Masten, 1994, s.7-8) sağlamlığın literatürde üç temel olguyu tanımlamak için kullanıldığını belirtmişlerdir.

> Öncelikle sağlamlık terimi mevcut zorlukları aşan ve beklenenden daha iyi gelişim gösteren yüksek risk altındaki bireyleri tanımlamak için kullanılmaktadır. Olumsuz ve zorlu yaşam koşullarında yetişmiş ünlü ya da başarılı kişilerin yaşam öyküleri ve otobiyografileri, yüksek risk altında yetişen çocuklarla yapılan sistematik sağlamlık çalışmalarıyla paralellik ve uyum göstermektedir. Bu tür çalışmalar, yüksek risk altındaki grupların başarılı sonuçlar elde edebileceği değişkenleri belirlemeyi amaçlamaktadır.
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> İkinci temel sağlamlık olgusu, stresli yaşam deneyimleri karşısında bireyin çabucak uyum yapabilme yeteneğine işaret etmektedir. Bu tür çalışmalarda boşanma gibi temel bir stres faktörü odak noktası olarak alınmaktadır. Bazı çalışmaların odaklandığı nokta ise yakın zamanda meydana gelmiş birden fazla ve farklı stres faktörlerinin bir arada incelenmesi olabilmektedir. Bu türden çalışmalar farklı stres kaynaklarının çocukların davranışları üzerindeki etkileriyle birlikte örseleyici yaşam koşullarının çocuklar üzerindeki olumsuz etkilerini azaltan ya da arttıran faktörleri (moderators) incelemektedir.
>
> Üçüncü grup araştırmalar ise, travmanın olası etkilerinden kurtulma konusunda önemli rol oynayan bireysel özellikler ve farklılıkları irdeleyen çalışmalardır. Tanım olarak, örseleyici yaşam deneyimlerinin bireyin yaşam kalitesini azaltması beklenir. İncinmezlik (invulnerability) kavramı geçmişten günümüze değin kullanılmasına rağmen, kimse gerçekten "incinmez" değildir. Stres kaynakları aşırı ya da hayatı tehdit edici boyutlara ulaştıklarında, sağlamlık yerini travmatik yaşantıya bırakır.

Yukarıdaki tanımlamalarda da görüldüğü üzere, sağlamlığın evrensel olarak kabul edilmiş ortak bir tanımı yoktur. Buna rağmen, tüm sağlamlık (resilience) tanımlarında ortak olarak görülen önemli bazı noktalar vardır. Bunlar, sağlamlık olgusunun dinamik bir süreç olduğu; travma, zorlu yaşam olayları ya da belirgin bir risk altında başarılı bir başetme (succesful coping), sağlıklı uyum gösterme (positive adaptation) ya da yeterlik (competence) geliştirebilme süreçlerini içerdiğidir (Doll ve Lyon, 1998; Garmezy, Masten, ve Tellegen 1984; Luthar ve Cicchetti, 2000; Luthar, Cicchetti, ve Becker, 2000; Masten ve Reed, 2002; Rutter, 1990, 1999; Wolin ve Wolin, 1993). Sağlamlık iki boyutlu bir kavramı temsil etmektedir. Bir başka deyişle, sağlamlığın ortaya çıkabilmesi için bireyin bir risk ya da zorluğa maruz kalması ve bu sürecin sonunda, duruma uyum sağlayarak mevcut tüm olumsuz koşullara rağmen yaşamın değişik alanlarında başarı elde etmesi

gerekmektedir. Özetle, sağlamlığın ortaya çıkabilmesi için risk anahtar faktör olarak belirmektedir. Herhangi bir örseleyici yaşam olayına maruz kalmayan ama yaşamın çeşitli alanlarında başarılı olan bireyler sağlam (resilient) değil yalnızca başarılı veya yeterli bireylerdir (Luthar ve Cicchetti, 2000; Luthar, Cicchetti, ve Becker, 2000).

Sağlamlık kavramının mevcut literatürdeki kullanımına bir açıklık ve kesinlik getirebilmek ve kavramın içerdiği temel boyutları belirleyebilmek için araştırmacılar sağlamlık ile ilgili "eğitimsel sağlamlık" (Wang, Haertel ve Walberg, 1994) ya da "akademik sağlamlık" (Alva,1991) gibi sınırlandırmış tanımlar kullanmayı tercih etmeye başlamışlardır (Luthar, Cicchetti, ve Becker, 2000).

Örneğin, akademik sağlamlık "okulda başarısız olabileceği ve sonuçta okulu bırakabileceği riskli durumlara sokabilecek stresli yaşam olaylarına ve zorlu yaşam koşullarına rağmen bireyin yüksek motivasyon, performans ve akademik başarı göstermesi " olarak tanımlanmıştır (Alva,1991, p.19).

Akademik sağlamlık kavramı literatürde büyük ölçüde kabul görmüş ve bu kavram araştırmacılar tarafından sıklıkla kullanılmaya başlanmıştır (Borman ve Overman, 2004; Cappella ve Rhona, 2001; Finn ve Rock, 1997; Gonzalez ve Padilla, 1997). Akademik sağlamlık, sağlamlık kavramının önemli boyutlarından biri olarak kabul edilmiştir. Akademik başarı da okul çağındaki çocuklarda akademik yeterliği ve sağlamlığı belirleyen en önemli gösterge olmuştur (Masten, 1994, Masten ve Coastworth,1998). Bu çalışmada akademik sağlamlık kavramı yeterince kapsamlı bulunarak çalışmanın rapor edilmesi boyunca kullanılmıştır.

Özetle, mevcut literatür incelendiğinde sağlamlık kavramının çeşitli tanımlarında üç temel nokta ortak olarak ifade edilmektedir. Bunlar; a) risk ve/veya zorluk, b) olumlu uyum gösterme, baş etme, yeterlik ve c) koruyucu faktörlerdir. bu durumda sağlamlık, "mutlaka sağlıklı bir uyum yapma ile bağlantılı olan ve bu uyum sürecine katkı sağlayan koruyucu faktörlerin mevcut risk faktörleri ile olan belirgin etkileşimi sonucunda ortaya çıkan" bir olgudur (Windle, 1999, s.163).

Risk, Olumlu Sonuçlar (Positive Outcomes) ve Koruyucu Faktörler

Yukarıda sözü edilen sağlamlık kavramının kavramsallaştırılması ile ilgili olarak, risk faktörleri, olumlu sonuçlar (positive outcomes) ve koruyucu faktörler araştırma bulgularıyla desteklenerek aşağıda açıklanmıştır.

Risk

Sağlamlık, sadece kişi bir tür risk ya da zorluk yaşadığı zaman tanımlanabilir. Belirgin bir risk durumunun olmadığı koşullarda yaşayan çocuklara "yeterli ya da yetkin", "uyumlu" ya da sadece "normal" denilebilir fakat bu çocuk ya da ergenler için "sağlamlık" olgusundan bahsedilemez (Masten ve Reed, 2002).

Bu durumda sağlamlık araştırmalarında ele alınan ve bireyler üzerinde belirgin olumsuz etkileri olan "yüksek riskli" ortamların ya da koşulların ve "yüksek risk" altında sağlıklı uyum göstermiş bireylerin açık bir şekilde tanımlanmaları gerekmektedir. Risk, zorluk, sıkıntı ve felaket (adversity) anlamına gelmektedir ve istatistiksel bir kavramdır. Genel olarak risk bireyler yerine belirli grupları tanımlamak için kullanılır. Risk faktörleri, "olumsuz bir durumun ortaya çıkma olasılığını arttıracak ya da olası bir problemin süregelmesine neden olacak etkiler" olarak tanımlanmıştır (Kirby ve Fraser, 1997, s. 10-11).

Diğer bir deyişle, risk faktörleri, belirli bir insan grubunun özellikle de çocuk ve gençlerin suç işleme, okulu bırakma vb. gibi olumsuz ve istenmeyen sonuçları yaşama olasılığını arttıran özelliklerini tanımlamak için kullanılmaktadır (Masten, 1994). Bazı risk faktörleri olumsuz sonuçların nedeni iken diğer bazı risk faktörleri olumsuz sonuçlarla sadece ilişki gösterir. Risk faktörleri genetik, biyolojik, sosyo-kültürel ve demografik koşulları ya da özellikleri içerebilir.

Literatürde, sağlamlık kavramı çerçevesinde, özellikle çocuk ve gençleri konu alan birçok farklı risk faktörü üzerinde çalışılmıştır. Bunlar; *erken doğum* (Bradley ve ark., 1994*), olumsuz yaşam olayları* (Masten ve ark., 1990; 1999), *kronik hastalıklar* (Bolig ve Weddle, 1988; Hobfall ve Lerman, 1988; Wells ve Schwebel, 1987),

ebeveynlerin hastalığı ya da psikopatolojisi (Anthony, 1987b; Coatsworth, 1995; Musick ve ark, 1987; Radke-Yarrow ve Sherman, 1990; Sameroff, Seifer, Baldwin ve Baldwin, 1993; Tebes, Kaufman, Adnopoz ve Racusin, 2001; Tiet ve ark., 2001; Worland, Weeks ve Janes, 1987), *ebeveynlerin ayrılması, boşanması ya da tek ebeveyn ile birlikte yaşamak* (Grych ve Fincham, 1997; Hetherington ve Hagan, 1999; Mulholland, Watt, Philpott ve Sarlin, 1991), *ergenlik döneminde anne olma* (Werner & Smith, 1982), *düşük sosyo-ekonomik düzey, ekonomik zorluklar ve yoksulluk* (Baldwin, Baldwin ve Cole, 1990; Buckner, Mezzacappa ve Beardslee, 2003; Conger ve ark. 1992; Elder, van Nguyen ve Caspi, 1985; Garmezy, 1991; Long ve Vaillant, 1984; Luthar, 1999; Mendez, Fantuzzo ve Cicchetti, 2002; Shumow, Vandell ve Posner, 1999; Werner ve Smith, 1982, 1992, 2001), *çocuk ihmal ve istismarı* (Beeghly ve Cicchetti, 1994; Cicchetti ve Rogosch, 1997; Egeland ve Farber, 1987; Heller, Larrieu, D'Imperio ve Boris, 1999; Kinard, 1998; Moran ve Eckenrode, 1992), *savaş ve doğal afetler gibi toplumsal travmalar* (Baron ve Eisman, 1996; Casella ve Motta, 1990; Elder ve Clipp, 1989; Grotberg, 2001; Hobfall, London ve Schwebel, 1987; Rosenfeld, Lahad ve Cohen, 2001), *toplumsal şiddet ve ailevi felaketler* (Criss ve ark., 2002; O'Donnell, Schwab-Ston ve Muyeed, 2002) ve *evsizlik* (homelessness) (Masten ve ark.,1993; Reed-Victor ve Pelco, 1999; Reed-Victor & Stronge, 2002; Williams, Lindsey, Kurtz ve Jarvis, 2001) olarak sıralanabilir.

Olumlu Sonuçlar (Positive Outcome)

Sağlamlık araştırmalarında, yalnızca riskin tanımı yeterli olmamakta bunun yanı sıra ele alınan akademik ve sosyal alanlardaki yeterlik/yetkinlik gibi olumlu sonuçların belirlenmesi de gerekmektedir

Çeşitli tanımları olmakla birlikte, yeterlik (competence) kavramı, varolan çevresel koşullar altında, bireysel gelişim sürecini sağlıklı bir biçimde devam ettirebilmek için etkili ve sağlıklı bir uyum örüntüsü gösterme anlamında kullanılmaktadır (Masten ve Coastworth, 1998). Sağlamlık araştırmalarında, sağlıklı uyumu ya da yeterliği tanımlamada farklı ölçütler kullanılabilmektedir. Bu ölçütler, sosyal ve akademik başarının varlığı gibi olumlu davranışlar olabildiği gibi, üzerinde çalışılan

yaş grubunda kültürel olarak istendik davranışların varlığı (gelişimsel görevler ya da sorumluluklar), mutluluk ve yaşamdan doyum veya bireyin yaşamında uyumsuzluk, psikopatoloji, duygusal stres, riskli ve suça yönelik davranışların mevcut olmaması da olabilmektedir (Luthar ve Cushing, 1999; Masten ve Reed, 2002).

Masten ve Reed'in (2002) belirttiği gibi en çok çalışılan olumlu sonuç değişkenleri: akademik başarı (örneğin okul akademik başarı puanları ve çeşitli sınav (test) sonuçları, okula devam etme, liseden mezuniyet), olumlu davranış örüntüleri (kurallara uygun davranışlar ya da anti-sosyal davranışlar), arkadaşlar tarafından kabul görmek ve yakın arkadaşlık ilişkileri kurmak, psikolojik sağlık (içsel ya da dışsal davranış problemlerinden pek az belirti göstermek) ve yaşa uygun spor ve toplum hizmeti vb. gibi ders dışı etkinliklerin içinde yer almak olarak sıralanabilir.

Koruyucu Faktörler

Sağlamlık, bireyi çevrenin olumsuz etkilerinden koruyan bir karakter özelliği değildir. Bireyi başarıya götüren gerçek sebepler, onun çevresel risk faktörlerinin etkisini azaltmayı sağlayan tutum ve becerilerinin bulunması gibi koruyucu faktörlerdir (Beauvais ve Oetting, 1999).

Koruyucu faktörler ifadesi, risk ya da zorluğun etkisini yumuşatan, azaltan ya da ortadan kaldıran, sağlıklı uyumu ve bireyin yeterliklerini geliştiren durumları tanımlamaktadır (Masten, 1994). Koruyucu faktörler bireysel özellikler, bazı çevresel faktörler ya da bu iki boyutun etkileşiminden kaynaklanan durumları içerebilir. Önemli olan bu boyutlardan hangisinin varolduğuna bakılmaksızın, koruyucu faktörlerin riski azalttığına, durdurduğuna ve hatta önlediğine olan inançtır (Greene ve Conrad, 1999, p. 34). Sağlamlık araştırmalarında koruyucu bireysel ve çevresel özelliklerin incelenmesi, risk altındaki bazı bireylerin diğerlerine göre neden daha sağlıklı ve başarılı bir uyum gösterdiklerinin açıklanabilmesi yönünden büyük önem taşımaktadır (Masten ve Reed, 2002).

Bireysel (İçsel) Koruyucu Faktörler

İçsel bireysel faktörler pek çok çalışmanın konusu olmuş ve bu faktörlerin neler olduğu literatürde ayrıntılı olarak tanımlanmıştır. Çalışmaların bir çoğundaki bulgular, sağlam (resilient) çocukların ya da ergenlerin diğerlerine göre *zihinsel ve akademik yetenek ve becerilerinin* daha üst düzeyde olduğunu göstermiştir (Kandel ve ark., 1988, Masten ve ark., 1988; White, Moffit ve Silva, 1989).

Sağlamlık ile ilişkili olduğu belirlenen diğer bireysel faktörler sırasıyla *mizaç* (temperament) (Gordon ve Song, 1994; Smith ve Prior, 1995; Tschann ve ark., 1996), *iç kontrol odağı* (internal locus of control) (Cowen ve ark., 1992; Grossman ve ark., 1992; Luthar, 1991; Luthar ve Zigler, 1991; Magnus ve ark., 1999; Weist ve ark., 1995; Werner ve Smith, 1992, *yüksek benlik saygısı* (self-esteem), *özyeterlik* (self-efficacy) ve bunlarla bağlantılı olarak *kişisel farkındalık* (self-awaraness) (Masten, 1994; Masten ve ark., 1999; Moran ve Eckenrode, 1992; Rak ve Patterson, 1996; Taylor, 1994), *bağımsızlık* (autonomy) (Anthony, 1987; Gordon ve Song, 1994 Benard, 1993 Martinek ve Hellison, 1997), *etkili problem çözme becerilerine sahip olmak* (Anthony, 1987; Rutter ve Quinton, 1994 Benard, 1991; Cowen, Work ve Wyman, 1997; Felsman ve Vaillant, 1987; Luthar, 1991; Werner, ve Smith, 1982; 1992), *iyimserlik* (optimism) ve *umut* (hope) (Martinek, ve Hellison, 1997; Kumpfer, 1999) ve *sosyal yeterlik* (social competence) (Benard, 1991; Martinek ve Hellison, 1997) olarak belirlenmiştir. Ayrıca, sağlam çocuklar ve ergenler arkadaş ve diğerlerine olan ilişkilerinde daha aktiftirler ve çevrelerinin olumlu ilgisini çekerler (Rutter, 1990; Werner ve Smith, 1982; Garmezy ve Masten, 1986; Bernard, 1991). Sağlam çocuklar ve ergenler daha mutlu bireyler (Kumpfer,1999) olarak nitelendirilmekle birlikte, mizah ve espri anlayışları da üst düzeydedir (Masten, 1986). bunların yanısıra sağlam çocuk ve ergenlerin diğerlerine göre daha sağlıklı, daha az çocukluk hastalığı geçirmiş, fiziksel olarak güçlü, uyku ve yeme örüntüleri daha sağlıklı olan bireyler (Kumpfer, 1999; Mandleco ve Perry, 2000; Murphy, 1987; Werner ve Smith, 1982; 1992) oldukları belirlenmiştir.

Çevresel (Dışsal) Koruyucu Faktörler

Bireysel (içsel) kişilik özelliklerinin yanında araştırmacılar, yaşamı tehdit edici koşullar altında çocukların uyumlarında etkili olan ailesel ve çevresel faktörleri de belirlemişlerdir.

Çocuğun ya da ergenin ailede en az bir ebeveyni ya da aile bireyi ile olumlu yakın ilişki içinde bulunmasının hem risk altındaki çocukların uyumunda hem de daha başarılı olmalarında (olumlu sonuç-positive outcome) belirleyici bir unsur olduğu konusu üzerinde geniş bir uzlaşma sağlanmıştır (Anthony ve Cohler, 1987; Buchanan, 2000; Grossman ve ark., 1992; Masten ve Coatsworth, 1998; Rutter, 1990; Werner ve Smith, 1982; 1992; Wyman, Cowen, Work ve Parker, 1991; Wyman ve ark., 1999 Benard, 1991).

Ayrıca, çocuğun içinde bulunduğu çevre ve toplum içinde de sağlamlığı etkileyen başka faktörler bulunabildiği ileri sürülmüştür. Ev dışında ilgili ve destek olan, sosyal destek sağlayan bir yetişkinin varlığının yüksek risk altındaki çocuklar ve ergenler için koruyucu bir faktör olduğu belirtilmiştir (Brooks, 1994; Grizenko ve Pawliuk, 1994; Rutter, 1987; Werner ve Smith, 1982; 1992 Beardslee ve Podorefsky, 1988; Benard, 1991; Bolig ve Weddle, 1988; Gordon ve Song, 1994; Taylor, 1994; Werner ve Smith, 1982; 1992).

Kaliteli okullar (Masten, 1994; Gordon ve Song, 1994), dini organizasyonlar (Gordon ve Song, 1994; Werner ve Smith, 1992), destek hizmeti sağlayan kurumlar ve önleyici programlar (Luthar ve Zigler, 1991) vb. gibi çevresel ve toplumsal kaynakların varlığı da yüksek risk altında olan çocuklar ve ergenlerin olumlu sonuçlar elde etmelerinde önemlidir.

Bunların yanısıra çevre ve toplumun sunduğu kaynak ve olanakların çeşitliliği ve çokluğu da önemlidir (Mandleco ve Perry, 2000). Sağlık kuruluşları, çocuk bakım merkezleri, mesleki eğitim olanakları, dini kurumlar ve spor, kültür, sanat ve eğlence olanakları çeşitli risk durumları ve yaş gruplarındaki çocukların sağlamlığını artırıcı faktörler arasındadır (Wang, Haertel ve Walberg, 1994).

Sağlamlık Araştırmalarında Temel Yaklaşımlar

Sağlamlık araştırmalarında risk durumu ve sağlıklı uyum ve herhangi bir yeterlik arasındaki ilişkiyi açıklamak için kullanılan iki temel araştırma yöntemi vardır.

Değişken temelli yaklaşımda; risk, uyum ve yeterlik ile bireysel, ailesel ve çevresel koruyucu faktörler arasındaki ilişkiler çok değişkenli istatistik yöntemleri (multivariate analysis) ile incelenmektedir (Masten ve Reed, 2002).

Birey temelli yaklaşımda ise, aynı yüksek risk koşulları içindeki iki grup (sağlam (resilient) ve kolay incinebilir (vulnerable) arasında karşılaştırmalı çalışmalar yapılmaktadır (Masten ve Reed, 2002).

Sağlamlık çalışmalarında bazı araştırmacılar değişken temelli yaklaşımı (Garmezy, Masten ve Tellegen, 1984; Grossman ve ark., 1992; Luthar, 1991; Osborn, 1990), diğerleri ise birey temelli yaklaşımı kullanmışlardır (Werner & Smith, 1992). Bunun yanısıra, çalışmalarında her iki yaklaşımı birden kullanan araştırmacılar da vardır (Buckner, Mezzacappa ve Beardslee, 2003; Masten ve ark., 1999).

Yoksulluk ve Sağlamlık

Yoksulluk, çocukların ve ergenlerin gelişim ve psikososyal uyumlarına pek çok yönden olumsuz etkiler gösterse de, ekonomik olarak risk altında olan çocuk ve ergenlerin büyük bir kısmı bu zorluğu yenmiş ve yaşadıkları ekonomik güçlüğe rağmen yaşamlarında akademik, davranışsal ve sosyal yönden önemli yeterlikler göstermişlerdir (Garmezy, 1991; Werner ve Smith, 1982; 1992; 2001). Başka bir deyişle, sağlam çocuk ve ergenler yoksul bir aile ortamı ve çevrede bulunmalarına rağmen, gelişimsel süreçlerine uygun davranışlar sergileyerek akademik yönden başarılı, kendilerine güvenen, suça yönelik davranış ve eylemlerden uzak kalan, arkadaşları ve içinde bulundukları çevre ile ilişkilerini en uygun biçimde geliştiren bireyler olarak yetişirler (Taylor, 1994). Yoksulluk yaşayan çocuk ve ergenlere yönelik olarak yapılmış çok az sayıda sağlamlık çalışması olmasına rağmen, çok

çeşitli bireysel ve çevresel koruyucu faktörün sağlamlık sürecine katkı sunduğuna yönelik bulgular ortaya konmuş ve bu bulgular Luthar (1999) tarafından özetlenmiştir.

Araştırmanın Amacı

Bu çalışmanın temel amacı, yoksulluk içindeki sekizinci sınıf ilköğretim okulu öğrencilerinin akademik sağlamlıklarının gelişmesine yardım eden koruyucu bireysel özellikler ve çevresel faktörlerin incelenmesidir.

YÖNTEM

Örneklem

Araştırmanın örneklemi, Ankara ilinin sosyo-ekonomik statüsü düşük olan gecekondu bölgelerindeki 6 ilköğretim okuluna devam eden 872 (439 kız, 433 erkek) sekizinci sınıf öğrencisinden oluşmaktadır.

Örneklem seçiminde izlenen aşamalar şöyledir: Öncelikle Ankara il sınırları içindeki sekiz merkez ilçedeki (Altındağ, Çankaya, Etimesgut, Gölbaşı, Keçiören, Mamak, Sincan ve Yenimahalle) düşük sosyo-ekonomik düzeydeki mahalleler Başbakanlık Devlet İstatistik Enstitüsü, "2000 yılı binalar cetveli numarataj" çalışmalarına göre belirlenmiştir. Ardından, üç ilçe seçkisiz örnekleme yöntemiyle belirlenmiş (Altındağ, Mamak ve Yenimahalle) ve bu ilçelere ait düşük sosyo-ekonomik düzeydeki mahallelerde bulunan okulların listesi Ankara İl Milli Eğitim Müdürlüğü, Rehberlik ve Araştırma Merkezleri'ndeki bilgiler ışığında oluşturulmuştur. Seçkisiz örnekleme yoluyla her ilçe için 2 okul olmak üzere toplam 6 okul belirlenmiş ve bu okullardaki tüm sekizinci sınıf öğrencileri örnekleme dahil edilmiştir.

Kullanılan Ölçme Araçları

Bu çalışmada, "Demografik Bilgi Formu", "Sağlamlık ve Ergen Gelişim Ölçeği" (Resilience and Youth Development Module), "Akademik Yeterlik Ölçeği" (Scholastic Competence Scale), "Beck Umutsuzluk Ölçeği" (Beck Hopelessness

Scale) ve "Nowicki-Strickland İç-Dış Kontrol Odağı Ölçeği" (Nowicki-Strickland Locus of Control Scale) olmak üzere toplam beş ölçme aracı kullanılmıştır. Bununla birlikte, öğrencilerin 6., 7. ve 8. sınıf genel not ortalamaları "Akademik Başarı" ölçütü olarak kullanılmıştır.

Demografik Bilgi Formu

Demografik Bilgi Formu, bu çalışmada yer alan öğrencilerin sosyo-ekonomik durumları ve aile ortamlarının betimlenebilmesi amacıyla araştırmacı tarafından geliştirilmiştir. Bu form, cinsiyet, yaş, anne-baba eğitim ve mesleki düzeyi, ailenin gelir durumu ve aile ortamı vb. gibi temel demografik bilgileri elde etmeyi amaçlayan soru maddelerinden oluşmaktadır.

Sağlamlık ve Ergen Gelişim Ölçeği

Bu çalışmada, WestEd ve California Eğitim Müdürlüğü tarafından geliştirilen Sağlamlık ve Ergen Gelişim Ölçeği (Resilience and Youth Development Module) M6 2002 modeli, adı geçen kurumların izniyle Türkçe'ye uyarlanarak kullanılmıştır. Bu ölçek, olumlu ergen gelişimi ile ilişkilendirilen çeşitli içsel ve dışsal (bireysel ve çevresel) koruyucu faktörleri betimlemek ve ölçmek amacıyla kullanılmaktadır. Adı geçen ölçekte, 33 madde aracılığıyla 11 "Dışsal Koruyucu Faktör" (*Okuldaki ilişkilerde ilgi ve sevecenlik, Okuldaki yüksek beklentiler, Okuldaki etkinliklere katılım, Toplumsal ilişkilerde ilgi ve sevecenlik, Toplumsal yüksek beklentiler, Toplumsal etkinliklere katılım, Arkadaş ilişkilerindeki ilgi ve sevecenlik, Arkadaş grubundaki yüksek beklentiler, Evdeki ilişkilerde ilgi ve sevecenlik, Evdeki yüksek beklentiler, Evdeki etkinliklere katılım*) ile ergenlerin başarılı ve sağlıklı gelişimlerini destekleyen çevresel kaynaklar ya da destek sistemleri belirlenmeye çalışılmaktadır. Ayrıca, 18 madde ile de 6 "İçsel Koruyucu Faktör" (*İşbirliği ve İletişim, Empati, Problem Çözme Becerileri, Kişisel Farkındalık, Amaçlar, Eğitimsel Beklentiler*) belirlenmektedir.

Sağlamlık ve Ergen Gelişim Ölçeği araştırmacı tarafından Türkçe'ye uyarlandıktan sonra ölçek üzerinde gerçekleştirilen açıklayıcı (exploratory) ve doğrulayıcı (confirmatory) faktör analizleri sonucunda ölçeğin 9 dışsal koruyucu faktör ve 7

içsel koruyucu faktörden oluştuğu saptanmıştır. Cronbach Alfa güvenirlik katsayısı ile hesaplanan ölçeğin iç tutarlığına ilişkin bulgular ölçeğin güvenirliğinin yeterli olduğuna işaret etmiştir.

Akademik Yeterlik Ölçeği

Bu ölçek, ergenler için Harter (1988) tarafından geliştirilen ve ergenlerin benlik algısının çeşitli alanlarını değerlendiren Ergenler için Benlik Algısı Ölçeği'nin en önemli alt ölçeklerinden biri olan ve toplam 5 maddeden oluşan, dört dereceli Likert tipi bir ölçme aracıdır. Akademik Yeterlik Ölçeği, ergenin okulla ilgili performansında kendi yetenek ve yeterliklerine ilişkin algılarını içermektedir. Bu ölçek Türkçe'ye Şahin ve Güvenç (1996) tarafından uyarlanmıştır. Bu çalışmada, ölçeğin geçerlik ve güvenirlik çalışmaları gerçekleştirilmiş ve ardından ölçek kullanılmıştır.

Beck Umutsuzluk Ölçeği

Bu ölçek, umutsuzluk ve kötümserliği yansıtan 20 maddeden oluşmaktadır ve kişinin kendisi ve geleceği hakkındaki olumsuz beklentileri ölçmeyi amaçlamaktadır (Beck, Weissman, Lester ve Trexler, 1974). Ölçekten alınan yüksek puanlar umutsuzluğa işaret etmektedir. Ölçek, Seber (1991) tarafından Türkçe'ye çevrilmiştir. Ölçeğin geçerlik ve güvenirlik çalışmaları da Seber, Dilbaz, Kaptanoğlu ve Tekin (1993) ve Durak (1993; 1994) tarafından yapılmıştır.

Nowicki-Strickland Kontrol Odağı Ölçeği

Bu ölçek, çocuk ve ergenlerin denetim odağı algısının içte ya da dışta algılama düzeylerini değerlendirmek amacıyla Nowicki ve Strickland (1973) tarafından geliştirilmiştir. Ölçek 40 maddeden oluşmaktadır ve ölçekten alınan yüksek puanlar denetim odağının dıştan algılandığını, düşük puanlar ise denetim odağının içten algılandığını göstermektedir. Yeşilyaprak (1988), ölçeği Türkçe'ye uyarlamış ve geçerlik ve güvenirlik çalışmalarını yürütmüştür. Bu çalışmanın yanısıra Korkut (1986) tarafından yürütülen bir araştırmada da ölçeğin 19 maddeden oluşan kısa formu üzerinde geçerlik ve güvenirlik çalışmaları gerçekleştirilmiştir.

Verilerin Toplanması

Araştırma verileri Mart - Mayıs 2003 tarihleri arasında araştırmacı ve ilgili okulların psikolojik danışmanları ile birlikte toplanmıştır. Ölçekler, öğrencilere 45 dakikalık ders saatlerinde ve ardışık iki günde uygulanmıştır. Ölçekler, örneklemdeki tüm sınıflara aynı sırayla uygulanmıştır (1. Gün: Demografik Bilgi Formu ve Sağlamlık ve Ergen Gelişim Ölçeği; 2. Gün: Nowicki-Strickland İçsel Denetim Odağı Ölçeği, Beck Umutsuzluk Ölçeği ve Akademik Yeterlik Ölçeği). Eğitim yılı sonu itibariyle, Temmuz 2003 tarihinde ise örneklemdeki 6 okulun mevcut kayıtlarından tüm öğrencilerin 6., 7. ve 8. sınıf genel not ortalamaları elde edilmiştir.

BULGULAR VE SONUÇ

Bu çalışma için toplanan veriler, açıklayıcı faktör analizi ve yapısal eşitlik modeli teknikleri kullanılarak toplam örneklem grubu, kızlar ve erkekler için ayrı ayrı analiz edilmiştir.

Toplam örneklem grubu üzerinde yapılan analizler sonucunda, *evdeki yüksek beklentiler*, *okuldaki ilişkilerde ilgi ve sevecenlik*, *arkadaş ilişkilerindeki ilgi ve sevecenlik*, yoksul öğrencilerin akademik sağlamlığını yordayan en temel dışsal koruyucu faktörler olarak belirlenmiştir. Bu bulgular, sağlamlık alanında yapılan diğer araştırmaların bulgularıyla paralellik göstermektedir (Borman ve Overman, 2003; Clark, 1991; Chao, 2000; Finn ve Rock, 1997; Percy, 2003; Prom-Jackson, Johnson ve Wallace, 1987; Werner ve Smith, 1992). Bununla birlikte, içsel koruyucu faktörler dikkate alındığında, *öğrencilerin kendi akademik yeterlikleri konusundaki olumlu algıları, yüksek eğitimsel beklenti, empatik bir anlayışa sahip olmak, içten denetimlilik* ve *gelecek konusunda umutlu olmak* ile yoksul ergenlerin akademik sağlamlığı arasında olumlu bir ilişki görülmektedir. Elde edilen bu bulgular da sağlamlık alanındaki diğer çalışmaların (Alva, 1991; Connell, Spencer ve Aber, 1994; Fescbach ve Feschbach, 1987; Fin ve Rock, 1997; Greene ve Miller, 1996; Kumpfer, 1999; Peng, 1994; Stipek, 1997; Tiet ve ark., 1998) bulgularını destekler niteliktedir.

Diğer yandan, dışsal faktörler arasında yer alan *evdeki ilişkilerde ilgi ve sevecenlik*, *toplumsal ilişkilerde ilgi ve sevecenlik* ve *arkadaş grubundaki yüksek beklentiler* ve içsel koruyucu faktörler arasında yer alan *problem çözme* becerisi ile yoksul öğrencilerin akademik başarıları arasında anlamlı fakat olumsuz yönde bir ilişki olduğu belirlenmiştir. Başka bir deyişle, yukarıda adı geçen bu dört faktör, koruyucu olma özelliklerinin aksine, çalışmadaki örneklem grubunun akademik sağlamlıklarını olumsuz yönde etkileyen faktörler olarak görülmektedir. Bu bulgular, öğrencilerin ailede ve yakın çevrelerinde kazandıkları ya da edindikleri kültür ve bilginin, okulda kazandırılmaya çalışılan kültür ve bilgilerden farklılık gösterdiği ve bu durumun öğrencilerin akademik başarılarını olumsuz etkilediği şeklinde yorumlanabilir. Bu görüş, öğrencilerin akademik alanda yaşadıkları problemlerin çocuk ve ergenlerin yaşamındaki en önemli sistemler olarak nitelendirilen okul ve aile arasındaki kültürel faklılıklardan kaynaklandığına yönelik "kültürel farklılık" teorisi (Villegas ve Lucas, 2000) ve "kültürel yeniden üretim" (Boudieu, 1974; aktaran Aronowitz ve Giroux, 1986) teorisi tarafından ileri sürülen görüşlerle paralellik göstermektedir. Araştırma örneklemini oluşturan öğrencilerin yoksul çevre ve aile ortamlarında yetiştikleri göz önüne alındığında, bu bulguların adı geçen teorilerin varsayımlarını desteklediği düşünülebilir.

Diğer yandan öğrencilerin *okulda, evde ve toplumsal çevredeki etkinliklere katılımları* ile akademik sağlamlık arasında istatistiksel olarak anlamlı bir ilişki bulunamamıştır. Aynı şekilde, içsel koruyucu faktörler arasında yer alan *özyeterlik, iletişim ve işbirliği, amaçlar* ve *kişisel farkındalık* ile akademik sağlamlık arasında istatistiksel olarak anlamlı bir ilişki bulunamamıştır.

Kız ve erkek örneklem grubu üzerinde ayrı ayrı yapılan analizler sonucunda ise, dışsal koruyucu faktörlerden *evdeki yüksek beklentiler* ve *olumlu akademik yeterlik algısı* ve *yüksek eğitimsel beklenti* içsel koruyucu faktörlerinin, yoksulluk altında yetişen kız ve erkek gruplarının her ikisinde de akademik sağlamlığı yordadıkları saptanmıştır. Bununla birlikte *okuldaki ilişkilerde ilgi ve sevecenlik ve yüksek beklenti* ile akademik sağlamlık arasındaki olumlu ve anlamlı ilişki sadece ergen kız öğrencilerde ortaya çıkmıştır.

Bu bulguların aksine, her iki grupta da *toplumsal ilişkilerde ilgi ve sevecenlik ve yüksek beklentiler* ile akademik sağlamlık arasında olumsuz yönde bir ilişki bulunduğu görülmüştür. Buna ek olarak, erkeklerde *ailedeki ilişkilerde ilgi ve sevecenlik* ile akademik sağlamlık ve kızlarda ise, *arkadaş grubundaki yüksek beklentiler* ile akademik sağlamlık arasında yine olumsuz yönde ilişkiler belirlenmiştir. Benzer bir şekilde erkeklerde, içsel koruyucu faktör olarak nitelendirilen *problem çözme* becerileri ile akademik sağlamlık arasındaki ilişki anlamlı ve olumsuz yöndedir.

Sağlamlık çalışmalarının sonucunda psikolojik danışmanlar, psikologlar, psikiyatri uzmanları, sosyal hizmet uzmanları, eğitimciler, program geliştirme uzmanları ve politikacıların önleyici çalışmaların programlanmasında üzerinde dikkatle durmaları gereken üç temel strateji ortaya çıkmaktadır (Masten, 1994; Masten ve Powell, 2003; Masten ve Reed, 2002). Bunlardan birincisi, riske ya da zorlu yaşam olaylarına maruz kalmayı azaltan ya da bu riskleri ortadan kaldırmayı amaçlayan *risk-odaklı* (risk-focused) müdahale ya da stratejilerdir. İkinci temel yaklaşım, *nitelik-odaklı* (asset-focused) stratejilerdir. Bu strateji grubunda amaç, çocukların ve ergenlerin gelişim süreci içerisinde yeterlik ve sağlamlıklarını artırmaya yarayacak nitelikli kaynakları artırmak ya da çocukların ve ergenlerin varolan kaynaklara ulaşabilirliklerini kolaylaştırmaktır. *Süreç-odaklı* (process-focused) stratejilerde ise amaç çocuk ve ergenlerin bireysel (içsel faktörler) ya da aile, okul, çevre, toplum (dışsal faktörler) gibi sağlamlıklarını artırıcı koruyucu faktörleri harekete geçirmek ve bu sistemler arasındaki varolan etkileşimi artırmaktır.

Bu çalışmanın amaçları ve bulguları göz önüne alındığında, çalışmanın önleyici çalışmalara yönelik katkıları daha çok *nitelik-odaklı* ve *süreç-odaklı* stratejileri içermektedir. Dolayısıyla amaç, yoksulluk altında yetişen ergenlerin psikososyal gelişimlerini ve sağlamlıklarını artırmak için mevcut kaynakların çeşitliliğini ve bu kaynaklara ulaşılabilirliği artırmak, aynı zamanda akademik sağlamlık sürecine katkı sağladıkları gözlenen bireysel ve çevresel (aile, okul, arkadaş grubu ve toplum) koruyucu faktörleri harekete geçirerek, yoksulluğun ergenler üzerindeki olumsuz etkilerini azaltmak olmalıdır.

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Gizir, C. A. & Köse M. R. (1999). *Problems of the Middle East Technical University Senior Students*. Paper presented at the meeting of the 5th National Psychological Counseling and Guidance Congress, Ankara, Turkey.

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