PREDICTORS OF RISK-TAKING BEHAVIORS AMONG TURKISH ADOLESCENTS

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ABSTRACT

PREDICTORS OF RISK-TAKING BEHAVIORS
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The purpose of the present study is to examine the role of several demographic and personality characteristics of Turkish adolescent risk takers. More specifically, how well gender, age, sensation-seeking, self-esteem, and locus of control predict adolescent risk-taking behavior was examined in this study. Participants were between the ages of 15-19, from two Anatolian high schools and a general lycee in Ankara. They were given four different instruments to fill out -Modified Risk Involvement and Perception Scale (M-RIPS), Arnett Inventory of Sensation-Seeking (AISS), Rosenberg Self-Esteem Scale (RSES), Rotter Internal-External Locus of Control Scale (IELOC)- and a demographic data form which was developed by the researcher (n = 867). Involvement subscale of the Risk Involvement and Perception Scale was adapted to Turkish culture by the researcher. A standard multiple regression analysis was conducted to evaluate how well sensation-seeking, self-esteem, locus of control, age, and gender predicted the risk-taking behaviors of adolescents. Results of the study indicated that except self-esteem, all other variables were significantly related to Turkish adolescent risk-taking behaviors. Gender and sensation-seeking were the most predictor variables in explaining adolescent risk-taking. The results also indicated that older male adolescent high sensation seekers who have external locus of control were more likely to engage in various risk-taking

behaviors. Theoretical and practical implications, and recommendations for future research were presented.

Key words: Risk-taking, sensation-seeking, Turkish adolescents, risk involvement, adolescent studies.

ÖZ

TÜRK ERGENLERİNDE RİSK ALMA DAVRANIŞLARINI YORDAYAN DEĞİŞKENLER

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Bu araştırmanın amacı, bazı demografik özellikler ile birlikte bazı kişilik özelliklerinin Türk ergenlerinin risk alma davranışını açıklamadaki rolünü irdelemektir. Daha açık ifadeyle bu araştırmada, cinsiyet, yaş, heyecan arama, benlik saygısı ve denetim odağının, ergenlerin risk alma davranışını ne derece yordadığı incelenmiştir. Araştırmanın katılımcıları Ankara'da iki Anadolu lisesi ve bir genel lisede okumakta olan, 15-19 yaşlar arasındaki gençlerdir. Katılımcılar dört farklı ölçek -Risk Alma Davranışını Gösterme Sıklığı Ölçeği, Arnett Heyecan Arama Ölçeği, Rosenberg Benlik Saygısı Ölçeği ve Rotter İç-Dış Kontrol Odağı Ölçeği- ile birlikte araştırmacı tarafından hazırlanan bir kişisel bilgi formunu doldurmuşlardır (n = 867). Risk Alma Davranışlarını Gösterme Sıklığı ve Risk Algısı Ölçeği'nin "Davranışı Gösterme Sıklığı" alt ölçeği, araştırmacı tarafından Türk öğrencilerinden oluşan bir örnekleme uyarlanmıştır. Heyecan arama, benlik saygısı, denetim odağı, yaş ve cinsiyet değişkenlerinin ergenlerin risk alma davranışlarını ne derecede yordadığını irdeleyebilmek için toplanan veriye standart çoklu regresyon analizi yapılmıştır. Sonuçlar benlik saygısı dışında tüm değişkenlerin Türk ergenlerinde risk alma davranışlarıyla anlamlı derecede ilişkili olduğunu göstermiştir. Cinsiyet ve heyecan arama risk alma davranışlarının en önemli yordayıcıları olarak bulunmuştur. Sonuçlar aynı zamanda heyecan arama gereksinimi

yüksek ve dıştan denetimli geç erkek ergenlerin birçok risk davranışına girme açısından en riskli grup olduğunu ortaya koymuştur. Teorik ve uygulama alanındaki doğurgular ve sonraki araştırmalar için verilebilecek öneriler sunulmuştur.

Anahtar kelimeler: Risk alma, heyecan arama, Türk ergenleri, riske girme, ergen araştırmaları.

To My Family

and

My Fiancée

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TABLE OF CONTENTS

PLAGIARISM iii
ABSTRACT iv
ÖZ vi
DEDICATION viii
ACKNOWLEDGEMENTS ix
TABLE OF CONTENTS x
LIST OF TABLES xiii

CHAPTER
1. INTRODUCTION 1
1.1. Background to the Study 1
1.2. Purpose of the Study 8
1.3. Significance of the Study 8
1.4. Definition of Terms 10
2. REVIEW OF THE LITERATURE 11
2.1. Theories of Risk-taking 11
2.1.1. Problem Behavior Approach 11
2.1.2. Developmental Approach 13
2.1.3. Cognitive Approach 15
2.1.4. Personality-Trait Approach 16
2.2. Research on Risk-Taking and Demographic Variables 18
2.3. Risk-Taking and Sensation-Seeking 19
2.4. Risk-Taking and Self-Esteem 23
2.5. Risk-Taking and Locus of Control 26
2.6. Research on Risk-Taking in Turkey 28
3. METHOD 31

3.1. Overall Design of the Study 31
3.2. Research Question 32
3.3. Description of Variables 32
3.4. Population and Sample Selection 33
3.5. Data Collection Instruments 33
3.5.1. Modified Risk Involvement and Perception Scale (M-RIPS) 33
3.5.1.1. Adaptation Study of M-RIPS 34
3.5.1.2. Exploratory Factor Analysis of M-RIPS 35
3.5.1.3. Confirmatory Factor Analysis of M-RIPS 37
3.5.1.4. Internal Consistency of M-RIPS 40
3.5.2. Arnett Inventory of Sensation Seeking (AISS) 41
3.5.2.1. Factor Analysis of AISS 42
3.5.2.2. Internal Consistency of AISS 43
3.5.3. Rosenberg Self-Esteem Scale (RSES) 44
3.5.3.1. Factor Analysis of RSES 44
3.5.3.2. Internal Consistency of RSES 45
3.5.4. Internal-External Locus of Control Scale (IELOC) 45
3.5.4.1. Internal Consistency of IELOC 46
3.5.5. Demographic Data Form 46
3.6. Data Collection Procedure 46
3.7. Data Analysis Procedure 47
3.8. Limitations of the Study 47
4. RESULTS 48
4.1. Descriptive Statistics and Bivariate Correlations of Quantitative Predictor Variables and the Criterion Variable 48
4.2. Results of the Multiple Regression Analysis Executed to Total M-RIPS Scores 49
5. DISCUSSION 52
5.1. Conclusions 52

5.2. Implications and Recommendations for Practice and Research 56
REFERENCES 59
APPENDICES 69
A. KİŞİSEL BİLGİ FORMU 69
B. PARSONS RİSK İÇEREN DAVRANIŞLARI GÖSTERME SIKLIĞI ÖLÇEĞİ 71
C. ARNETT HEYECAN ARAMA ÖLÇEĞİ 74
D. ROSENBERG BENLİK SAYGISI ÖLÇEĞİ 77
E. ROTTER DENETİM ODAĞI ÖLÇEĞİ 79
F. LISREL ESTIMATES OF PARAMETERS IN THE MEASUREMENT MODEL FOR MODIFIED RISK INVOLVEMENT AND PERCEPTION SCALE (M-RIPS) WITH COEFFICIENTS TO STANDARDIZED VALUES AND *T*-VALUES 83

LIST OF TABLES

TABLES

Table 3.1. Factor Loadings and Communalities of the Items of M-RIPS via Principal Component Analysis with Varimax Rotation 36

Table 3.2. Rotation Sums of Square Loadings of M-RIPS 37

Table 3.3. Standardized Lambda-x Estimates, Standard Errors, *T*-Values, and Squared Multiple Correlations (R^2) of the Observed Variables of M-RIPS.39

Table 3.4. Factor Loadings of AISS..... 43

Table 3.5. Rotation Sums of Squared Loadings of Two Factors of AISS. 43

Table 3.6. Factor Loadings of RSES..... 45

Table 3.7. Rotation Sum of Squared Loading of RSES 45

Table 4.1. Means and :Standard Deviations of the Quantitative Predictor Variables . and the Criterion Variable 48

Table 4.2. The Pearson Product Correlation Coefficients among Quantitative..... Predictor Variables and the Criterion Variable 49

Table 4.3. Results of the Multiple Regression Analysis for Sensation-Seeking, Self-Esteem, Locus of Control, Gender, and Age 50

CHAPTER I

INTRODUCTION

1.1. Background to the Study

Adolescence is one of the most challenging developmental periods in a person's life. Individuals biologically and psychologically experience wide variety of changes in this period. Along with these changes, individuals begin to discover variety of new emotional or behavioral stimulants of adult life. Biological, psychological, and social-environmental changes that occurred in the adolescence process may cause vulnerability to engage in self-destructive or health-compromising behaviors. These self-destructive or health compromising behaviors that initially occur in the adolescence process have long-term effects in terms of health or other social and psychological consequences (Ingersoll & Orr, 1989; as cited in Gonzales & Field, 1994). For this reason, a considerable amount of risk-taking research underlines the negative consequences of risk-taking behaviors associated with health (Ögel, Çorapçıoğlu, Sır, Tamar, Tot, Doğan, Oğuz, Yenilmez, Bilici, Tamar & Liman, 2004; Hodgson, 2000). For example, reckless behavior (Arnett, 1996), criminal activities such as stealing; sexual behavior, smoking, heavy drinking, drug use and abuse, and reckless driving (Zuckerman & Kuhlman, 2000) regarded as potentially risky behaviors that might have negative long-term consequences. Similarly, Jessor, Donovan, and Costa (1991) found that problem behavior proneness in adolescence explained young adult problem behavior including problem drinking, alcohol use, marihuana use, cigarette smoking, and general deviant behavior. Considering these long-term negative consequences, risk-taking behavior has become one of the most important topics of adolescent studies.

In the literature, what constitutes risk-taking behavior is rather blurred. In other words, there is no consensus on the definition of this concept. Risk-taking has been conceptualized differently from the variety of theoretical perspectives. For example, from the decision-making perspective, Irwin (1990; Irwin & Millstein, 1991) defines risk-taking as a volitional behavior whose outcome is uncertain and probably the reason of negative consequences. Similarly, Moore and Gullone (1996, p.347) defined risk-taking behavior as "behavior which involves potential negative consequences but is balanced in some way by perceived positive consequences". Furthermore, Zuckerman (1994), who views the risk-taking as a dispositional trait, defines risk as partly objective and partly individual's subjective judgments of a certain situation.

As seen above, relatively different aspects of risk or risk-taking are emphasized by the risk-taking researchers. More specifically, what constitutes risk-taking behaviors seems to be an "agreed upon" issue in risk-taking literature (Gonzales & Field, 1994; Irwin & Millstein, 1992). A group of researchers are generally viewed the risk-taking as the behaviors that possibly cause long-term negative consequences about health (Ingersoll & Orr, 1989; as cited in Gonzales & Field, 1994) and deviate individuals from the norms of dominant culture (Jessor, Chase & Donovan, 1980; as cited in Siegel et al., 1994). These behaviors can be exemplified as smoking, alcohol and drug use, and early and unprotective sexual intercourse. Contrary to destructive behaviors, sports including risk-taking are considered as more socially acceptable. For example, Essau (2004) suggests that risk-taking includes not only maladaptive risk-taking behavior (e.g. drug use), but also socially acceptable risk behaviors (e.g. participating in a dangerous sport). Besides, involving in socially acceptable risk-taking behaviors includes less risk than compared with the maladaptive risk-taking behaviors in terms of their health or long-term effects. For instance, Siegel et al., (1994) discussed the risk-taking behaviors by dividing them into two groups as low and high risky. According to them, while, several of the activities represented the low risky behaviors (e.g. walking alone at night), several others were included in high risky behaviors (e.g. taking crack or cocaine).

Overviewing the risk-taking behaviors, one can observe that it includes some different groups of behaviors such as traffic-related (e.g. taking speed, driving without license, driving/riding without seatbelt, driving when drunk), sex-related (e.g. having sex, sex without condom, sex with someone unknown), substance use-related (e.g. taking crack/cocaine, heroin, sniffing gas or glue), and dangerous sports-related (e.g. diving, sky-diving, kayaking, parachuting, bungee-jumping) risk-taking behaviors. Except for these groups of behaviors, there are some other kinds of risk-taking behaviors as well, such as fighting, carrying gun or knife, aggression (Bayar, 1999), walking alone at night, truancy, cheating on an exam, incomplete homework etc. Most of these behaviors increase in terms of frequency and intensity as the individuals become older in the adolescence period (DiClement, Hansen, & Ponton, 1996). Moreover, individuals engaging in one risk behavior have an inclination to involve in other risky behaviors (Igra & Irwin, 1996).

In the last decades, studies have demonstrated that risk-taking behaviors are very common and "frequently involved" behaviors among adolescents (Essau, 2004). For example, according to the survey periodically conducted since 1975 on the prevalence of adolescent drug use among American adolescents, at least one time use of any of the drugs in lifetime among 10^{th} and 12^{th} grade students has occurred as 38.2% and 50.4% in 2005, respectively (Johnston, O'Malley, Bachman & Schulenberg, 2006). Similarly, in the same survey results, it was reported that one time use of alcohol in lifetime for 10^{th} and 12^{th} grade students has also appeared to be high, 63.2% and 75.1%, respectively, as it was in the rates of getting drunk (42.1% and 57.5% respectively). Cigarette use among 10^{th} and 12^{th} grade students appeared to be quite common as well. The rate of cigarette use has been 38.9% and 50.0% among 10^{th} and 12^{th} grade students in 2005, respectively (Johnston, O'Malley, Bachman & Schulenberg, 2006). Driving fast, involving in traffic accidents (Bingham & Shope, 2004) and having unprotective sex with different partners (Essau, 2004) can be the examples of the other kinds of risk-taking behaviors that commonly exist during adolescence.

Furthermore, statistics given by Turkish researchers are also salient. For instance, Tütün, Tütün Mamulleri ve Alkollü İçkiler Piyasası Düzenleme Kurumu (TAPDK) reported that the first cigarette use among Turkish people has been decreased to the age of 12. Besides, contrary to developed countries, the average range of cigarette smoking has been increasing in developing countries including Turkey (Kamu Yararı Reklam Yarışması Spotu Bilgi Notu, 2006).

Similarly, Özyurt and Dinç (2006) reported the prevalence of alcohol use at least once in lifetime was 11% among Turkish school-aged children. Furthermore, while usage of alcohol experience age was 12, 68% of experienced alcohol consumers expressed that they were still using alcohol. Besides, several significant factors were reported including being male and increasing age in alcohol use. It was also reported that there was significant positive relationship between cigarette smoking and alcohol consumption. That is, one type of risky behavior can be a trigger of any other type of risk-taking behavior.

Moreover, it was reported that accidents with vehicles like motorcycle and bicycle that adolescents and young adults involved were very common and have been increasing in recent years (Tombaklar, 2002; Bingham & Shope, 2004) According to statistics of World Health Organization, over 1/3 of fatal accidents have occurred in the world with these kind of vehicles in 1996 (Tombaklar, 2002). This report also suggested that 30%-50% of bicycle riders died in the traffic accidents were under the age of 20. Similarly, motorcycle drivers and riders mostly involved in fatal accidents were between the ages of 15 and 25.

Sümer, Lajunen and Özkan (2002) suggested that the most risky age group in traffic accidents was 18-24. They found that young people were more likely to involve in traffic accidents, take speed, and overtake other vehicles. They concluded that either

demographic or personality characteristics of individuals have significant contributions to explain traffic accidents.

A growing interest to understand adolescents' perceptions and interpretations of risk-taking behaviors has been manifested in the literature. According to Jessor and Jessor (1977; as cited in Gonzales & Field, 1994) adolescents purposely seek out risks as they want to take control of their lives; rebelling the authority figures into their lives; deal with anxiety, inadequacy and failure; feeling of safe into the peer groups that they belong to; and achieving in developmental transition into young adulthood. However, risk-taking behaviors have physical, psychological and social outcomes, and they can negatively affect normal developmental process of adolescents (Jessor, 1991).

Arnett (1995) emphasizes the role of cultural environment in examining adolescent risk-taking behavior. According to this view, the socialization environment is examined in the seven domains: family, peers, school, community, the legal system, the media, and the cultural belief system. This view suggested that certain types of developmental characteristics such as sensation-seeking affected the risk behavior especially in the adolescence, and that the extent and form of the expression of these characteristics as risk behavior depend on the restrictiveness of the socialization environment. The prevalence of the risky behavior and expression of sensation-seeking as risky behavior depend on the extent of freedom or limitations, and the social environment determines these boundaries. In other words, in cultures characterized by broad socialization, individualism and independence are encouraged and limitations are more flexible. In the socialization process, adolescents are allowed to express their personal characteristics such as risk-taking. On the other hand, in cultures characterized by narrow socialization, conforming cultural norms are warranted, cultural restrictions are rigid, and any deviation from the norms is punished in different ways. Risk-taking behavior is not common in these cultures (Rosenbloom, 2003).

Likewise, according to Levitt, Selman and Rischmond (1991), socio-cultural influences have an importance in the domain of risk-taking behavior since the decisions about whether or not to engage in such behaviors are affected by individuals' social context. However, the fact that some resilient children in high-risk environments resist risky behavior whereas some children in low-risk environments engage in risk-taking behavior indicates that environmental influences alone do not determine risk-taking behavior (Levitt, Selman & Richmond, 1991).

The degree to which adolescents involve in risk-taking behavior can also be mediated by other factors such as demographic characteristics of adolescents. Indeed, research consistently highlights that males are more likely to involve in risk-taking behaviors (Marquis, 1998; Small, Silverberg & Kerns, 1993; Jessor et al., 2003; Alexander, Somerfield, Ensminger, Kim & Johnson, 1995). Similarly, age is another crucial factor in explaining risk-taking, and has been commonly linked with adolescents' risk-taking behaviors. As mentioned before, adolescents begin to discover new experiences in the adolescence period. Logically, experiences of variety of risk-taking behaviors rise along with the increasing age in this period. Studies have confirmed this idea (Bell, Schoenrock & O'Neal, 2000; Turner & McClure, 2003). In other words, older adolescents tend to perceive risky behavior as less risky, and more frequently involved in these behaviors (Essau, 2004; Small, Silverberg & Kerns, 1993).

Reviewing risk-taking literature, one can find that some personality variables such as sensation-seeking, self-esteem, and locus of control have also been linked with risk-taking behaviors. For instance, sensation-seeking is a personality characteristic that found to be significantly related to risk-taking behaviors of adolescents (Zuckerman, 1994; 2000; Arnett, 1992; 1996). According to these studies, adolescents high in sensation-seeking are more frequently involved in different kinds of risk-taking behaviors than the adolescents low in sensation-seeking do. Similarly, Hansen and Breivik (2001) found that sensation-seeking was strongly related to negative (crime and

socially unacceptable activities like shoplifting, drug use etc.) and positive (activities like climbing, kayaking, rafting etc.) risk-taking behaviors. Furthermore, high sensation-seekers perceive risky behavior as less risky (Zuckerman, 2000). Therefore, high sensation-seekers are commonly involved in risk-taking activities including dangerous sports, sexual behavior, smoking, drinking, substance use, and reckless driving.

Despite inconclusive evidence in the literature, another personality variable which has thought to be related to risk-taking behavior is self-esteem. Generally, negative risk-taking behaviors like drinking, reckless driving, smoking, sexual intercourse, and drug use have been linked with low self-esteem (Jessor, Turbin, Costa, Dong, Zhang & Wang, 2003). Although several researchers argue that risk-taking behaviors are correlated with lower self-esteem (Abernathy, Massas & Romano-Dwyer, 1995; as cited in Modrcin-Talbott, Pullen, Zandstra, Ehrenberger & Muenchen, 1998), others state that low self-esteem is not correlated with risk behaviors (Wild, Flisher, Bhana & Lombard, 2004). On the other hand, developmental research, which argues experiencing risky behaviors to some extent in adolescence is adaptive, equate involving in such behaviors with higher self-esteem (Jackson, 1984; Moore & Rosenthal, 1993; as cited in Rolison, 2002). Therefore, although there is no consensus on the relationship between risk-taking behaviors and self-esteem, most of the studies suggest that lower self-esteem is significantly related to risk-taking behaviors.

Empirical evidence also emphasizes the role of locus of control in understanding risk-taking behaviors of adolescents. Previous research has indicated that decisions about whether engaging in risky behaviors or not were significantly influenced by external and internal locus of control (Crisp & Barber, 1995). In the same vein, studies that focused on preventive health behaviors demonstrated a positive relationship between having internal locus of control and preventive health behaviors (as cited in Üstündağ-Budak & Mocan-Aydın, 2005).

To conclude, adolescence is a critical period of an individual. This critical period includes a variety of risk-taking behaviors. Furthermore, a potentially risky behavior for an early adolescent might not be considered as developmentally harmful for a late adolescent. In other words, this period has also different developmental characteristics. Risk-taking behaviors can be normative and socially acceptable to some extent, depend upon the type, frequency, and degree of risky behavior. Moreover, empirical evidence points out that young people are more prone to involve in risky-behaviors that have fatal dangers and long-term effects, and Turkish adolescents are not the exception. Furthermore, results of previous studies on adolescent risk-taking have suggested that the role of personality and demographic characteristics of adolescents in different cultures should also be considered in understanding the risk-taking behaviors.

1.2. Purpose of the Study

The purpose of the present study is to examine the role of several demographic and personality characteristics of Turkish adolescent risk takers. More specifically, how well gender, age, sensation-seeking, self-esteem, and locus of control predict the risk involvement frequencies of Turkish adolescents was examined in this study.

1.3. Significance of the Study

Adolescent years are a time of potential period for risk-taking than compared with the other periods of life (Arnett, 1992; 1995). Moreover, risk-taking behaviors, particularly of which are characterized by maladaptive behaviors, might be the reason of long lasting, negative outcomes such as injuries, developing dependencies on cigarette, alcohol or other kinds of substances. In addition to these self-destructive behaviors, risk-taking behaviors also constitute a potential risk for others such as driving when intoxicated that might result in fatal accidents. To understand adolescent risk-taking behavior, one needs to examine personal and environmental basis of that behavior.

Depending upon the information gathered from empirical studies, prevention techniques and programs could be composed to protect adolescents from self-destructive behaviors.

Furthermore, research on adolescent risk-taking suggests that individuals getting involved in one kind of risk-taking behavior are inclined to involve in other kinds of risk-taking behaviors (Shrier, Emands, Woods & DuRant, 1997). This means getting involved in one type of risky behavior can have a potential risk for engaging in other risky behaviors. Without any intervention, frequency, commonness, and multiplicity of these behaviors can easily increase among adolescents. On the other hand, the presence of certain risk-taking behaviors in adolescence can predict other risky behaviors in young adulthood (Essau, 2004). That is, risk-taking behaviors are positively and strongly linked with each other, and might have long lasting effects in terms of their social and physical consequences.

The adolescent risk-taking research has focused more on one type of risky behavior; little research has been conducted to find out the characteristics of an adolescent risk taker involved in a multiple risky behaviors. A full understanding of adolescent risk-taking requires examining of its variety of characteristics among adolescent groups in depth. In addition, the majority of adolescent risk-taking research has been conducted in the Western countries. In other words, the majority of knowledge gathered for this topic has rather been in western-origin, therefore little is known about the Turkish adolescents. In the Turkish literature, adolescent risk-taking was studied with a few demographic and personality variables such as gender, age, academic achievement, sensation-seeking, impulsivity, peer pressure, family structure and similar kind of environmental variables. No study examined the role of self-esteem, and locus of control in explaining adolescent risk-taking behavior in Turkey.

1.4. Definition of Terms

Risk-Taking Behavior: Risk-taking behavior is conceptualized as engagement in the behaviors that deviate individuals significantly from the norms of the dominant culture (Jessor & Jessor, 1975; 1977; Jessor, Chase & Danovan, 1980 as cited in Siegel et al., 1994) and that have long-term effects in terms of health or other social and psychological consequences (Gonzales & Field, 1994).

Sensation-Seeking: Sensation-seeking is defined by Zuckerman (1994) as "the seeking of varied, novel, complex, and intense sensations and experiences and willingness to take physical, social, legal, and financial risks for the sake of such experiences" (p. 27).

Self-Esteem: "Self-esteem is the global evaluative dimension of the self. Self-esteem is also referred to as self-worth or self-image" (Santrock, 1999; p. 314).

Locus of Control: "Locus of control, a construct related to attribution, examines people's control beliefs-to what extent they perceive they are in control or not in control of what happens to them (Daum & Wiebe, 2003; p.8).

CHAPTER II

REVIEW OF THE LITERATURE

This chapter consists of six sections. The first section, which divided into four subsections, presents theoretical models of risk-taking behavior. Four different views to risk-taking, which include problem behavior approach, developmental approach, cognitive approach, and personality approach, are discussed in this section and its subsections. The second section overviews the empirical research on risk-taking. In this section, main demographic variables examined in relation to risk-taking are discussed. In the third section, sensation-seeking in relation to risk-taking is presented. In the fourth section, research on the self-esteem in relation to risk-taking is summarized. The research on locus of control in relation to risk-taking is given in the fifth section. Finally, research on risk-taking in Turkey is reviewed.

2.1. Theories of Risk-taking

In this section, major perspectives including problem behavior approach, developmental context, cognitive approach, and personality-trait approach that explain risk-taking are summarized.

2.1.1. Problem Behavior Approach

One of the salient theories in explaining risk-taking is Problem Behavior Theory (PBT) (Jessor & Jessor, 1977). PBT conceptualizes adolescent risk-taking as engagement in the behaviors that deviate significantly from the norms of the dominant culture. Adolescents

that involve in the behaviors (e.g. delinquency, drug use, sexual activity) have actually problem behavior proneness.

PBT emphasizes social-environmental and personal aspects of adolescent risk-taking and views it as a maladaptive personality trait (Shapiro, Siegel, Scovill & Hays, 1998). For this reason, several of the risk-taking researchers (e.g. Shapiro et al., 1998) have classified this theory in the personality approach. On the other hand, PBT's reformulation evaluates risk-taking rather as a developmental characteristic of an adolescent in recent studies. For example, Jessor (1991; as cited in e.g. Shapiro et al., 1998) argues that risk-taking in adolescence can be functional, purposive, instrumental, and goal directed, and an important part of adolescent development. Furthermore, Jessor (1991) argues that health compromising behaviors such as smoking, drug use, drinking, and other kind of similar behaviors that deviate individuals from social norms can be developed by adolescents' due to the environmental factors (e.g. peer pressure, socioeconomic status). Besides, Jessor's Problem Behavior Theory emphasizes the cognitive aspects of risk-taking. In other words, adolescents who have a tendency toward risk-taking behavior are characterized by a set of attitudes, perceptions, and values about themselves and their environment (Alexander, Kim, Ensminger, Johnson, Smith & Dolan, 1990) As a result; it seems that PBT views risk-taking as a normal part of adolescent development, along with considering it a maladaptive personality trait.

In Jessor and Jessor's view (1977), behavior, perceived environment and personality components also include many social-psychological variables. For example, personality components consist of variables such as self-esteem, internal-external locus of control, alienation; perceived environment component consists of variables such as parental control, peer control; and behavioral component consists of variables such as problem drinking, alcohol use, marihuana use, cigarette smoking, and general deviant behavior (Jessor, Danovan & Costa, 1991; as cited in Rolison & Scherman, 2003).

In Problem Behavior Theory (PBT) Jessor (1991) used the concept of "proneness" in three systems (personality, perceived environment, and behavior) to describe the inclination of adolescents' risk-taking behaviors that they engage. Proneness in personality system is characterized by low values on academic achievement, self-esteem, and religiosity, along with greater tolerance for deviance and high values on independence (Shapiro, Siegel, Scovill & Hays, 1998). Proneness in perceived environment system is characterized by low levels of parental support and greater peer influence on decision-making. The problem behavior system is divided into two subgroups; problem behaviors and conventional behaviors. Proneness in this system is characterized by low involvement in conventional behaviors and high involvement in problem behaviors. PBT suggests that the individuals who are highly involved in problem behaviors are those who have the higher levels of proneness in all three of the systems (Shapiro et al., 1998). In addition, PBT proposes that adolescents that engage in one type of risk-taking behavior are inclined to engage in other types of risk-taking behavior (Jessor, Donovan & Costa, 1991). In other words, adolescents whose proneness is high in all three systems are more predisposed to engage in more than one risk-taking behavior.

2.1.2. Developmental Approach

Individuals experience a variety of rules, roles, and relationships during the adolescence process. Developmental view suggests that risk-taking can not be defined apart from an individual's developmental context (Lerner & Tubman, 1991). A potentially risky behavior for an early adolescent might not be considered as developmentally harmful for a late adolescent. For example, although sexual intercourse is developmentally inappropriate for 13 year-old adolescent, it may be regarded as quite normative for a college student, despite the fact that such behavior is equally risky for both individuals. In other words, involving in risk-taking behaviors means different things for younger and older adolescents (Parsons, Siegel & Cousins, 1997).

From the developmental perspective, risk-taking is viewed as normative and adaptive for healthy psychological development (Baumrind, 1991) and conceptualized as a means of dealing with developmental tasks such as autonomy and exploration. Normal and developmentally appropriate behaviors are normative and exploratory. Conversely, pathological and problematic behaviors are viewed as negative habits. From normal/adaptive perspective, experiencing a risky behavior provide an adolescent with truly assessing the outcomes of that behavior. In other words, challenging life experiences associated with risk contributes to judgments of adolescents; therefore, they have the ability to make decisions about engaging or not engaging in such challenging risky situation. Otherwise, lack of experience may lead to mistakes in judgment when decisions about risk-taking are made. As a result, developmental view argues that adolescents experiencing some degree of risky behaviors can get a likelihood of some sort of cognitive advancement in the risk-taking domain at the same time. In other words, they may have an opportunity to learn and discriminate what behavior is likely to be risky.

As mentioned above, experiencing some degree of risk-taking during the adolescence is accepted as normative by the developmental research. For example, Baumrind (1987) suggested two different types of risk-taking behavior, which are named as pathological and adaptive. Adaptive risk-taking provides adolescents with increased self-esteem, stress tolerance, and initiative as secondary gains (Baumrind & Moselle, 1985; as cited in Siegel et al., 1994). Although many of the developmental theorists have identified "experimenters" as the most psychologically healthy adolescents, this does not mean that activities like drug use or unprotected sex could develop an adolescent's psychological health (Parsons, Siegel & Cousins, 1997). However, it was found by the developmental researchers that occasional experimentation of risk-taking behaviors (e.g. drug use) is neither deviant nor personally destructive (Baumrind, 1987; Shedler & Block, 1990). Therefore, risk-taking can be regarded as a method of developing optimal

social and psychological competence, autonomy, independence, and self-regulation (Baumrind, 1987).

2.1.3. Cognitive Approach

According to cognitive (decision-making) approach, a risky behavior can be defined as an action requiring some chance of a loss (Beyth-Marom, Austin, Fischoff, Palmgren & Jacobs-Quadrel, 1993). From a decision theory perspective, choosing a risky or nonrisky action is rational if the choice reflects the relevant values and beliefs of the decision maker. Individuals who have different values and beliefs make different decisions and actions under the same conditions. To compare or evaluate the rationality of their behavior, one needs to examine the components of their respective decision-making process (Raiffa, 1968; von Winterfeldt & Edwards, 1986; Yates, 1990, 1992; as cited in Beyth-Marom et al., 1993).

In contrast to personality theorists, cognitive theorists suggest that understanding the reasons of risk-taking is more significant than considering the consequences of these behaviors (Shapiro et al., 1998). This perspective focuses more on underlying decision-making process of engaging in risky behavior. In other words, rather than just analyzing consequences of the behavior, decision-making approach discusses why and how individuals get involved in such behaviors. On the other hand, decision-making perspective emphasizes the differences between the adults' and adolescents' evaluation process about engaging in risk-taking behaviors.

Cognitive theories of risk-taking such as Ajzen and Fishbein's (1980) theory of reasoned action and Janis and Mann's (1977) decisional balance theory suggested that under normal conditions individuals can decide whether they involve in the risky behavior or not (Siegel et al., 1994). Perception of risks identifies the value and the benefits of the risks. Cognitive theories assume that having knowledge associated with the costs and

benefits of risky behaviors protect the individuals from engaging in those potentially harmful behaviors. For this reason, this approach focuses more on examining the perception and benefits when making a decision about engaging or not engaging in a risky activity. A great majority of research on the contribution of risk perception and perceived benefit to risky behavior suggests that risk perception is significantly and negatively, and the perceived benefit is strongly and positively related to involving in risky behavior. In other words, involvement in risk-taking behaviors is inversely related to perceived risks and directly related to perceived benefits (Parsons, Siegel, & Cousins, 1997; Horvath & Zuckerman, 1992; Rolison & Scherman, 2003; Jacobs-Quadrel, Fischoff, & Davis, 1993; Ben-Zur & Reshef-Kfir, 2003; Essau, 2004).

As a result, cognitive theories have contributed to adolescent risk-taking research in terms of examining the decision-making style of adolescents and have tried to find the underlying factors of risk-taking behaviors. However, Siegel et al., (1994) argue that cognitive theories ignore the emotional motives that drive an individual to engage in risky behaviors. Therefore, a purely cognitive approach in explaining the adolescents' risk-taking may be inadequate.

2.1.4. Personality-Trait Approach

In this approach, risk-taking is a personality characteristic that differentiates an individual from the others. In other words, risk-taking is regarded as a trait peculiar to an individual like sensation-seeking and self-esteem. Research on risk-taking in terms of its relation to personality factor indicates that there exists a significant role of different characteristics of personality including sensation-seeking (Horwath & Zuckerman, 1992; Rolison & Scherman, 2003; Greene, Krcmar, Walters, Rubin & Hale, 2000), self-esteem (Gonzales & Field, 1994; Wild, Flisher, Bhana & Lombard, 2004), locus of control (Kohler, 1996; Rolison, 2002), impulsivity (Moore & Rosenthal, 1993; as cited in

Rolison, 2002), egocentrism (Greene et al., 2000), and five-factor of personality (Essau, 2004) in explaining risk-taking behavior.

As a personality-trait approach, Zuckerman (1994) stresses the sensation-seeking in relation to risk-taking. This idea was supported by Arnett (1992). Sensation-seeking is the most frequently evaluated individual characteristic in explaining risk-taking behaviors. According to Zuckerman (1994), sensation-seeking is a personality trait that provides individuals with satisfying their needs of risk-taking. Furthermore, one personality characteristic alone does not adequate for explanation of risk-taking behaviors. For this reason, while the effects of single personality variables on risk-taking behaviors were investigated, personality as a whole was also examined in terms of its effects on risk-taking behaviors. For example, Essau (2004) investigated the role of five-factor model of personality using the Goldberg's five-factor personality inventory. Similarly, Zuckerman and Kuhlman (2000) examined the effects of personality on risk-taking using the Zuckermnan-Kuhlman five-factor personality questionnaire.

As a result, personality-trait approach studies the relations between risk-taking behaviors and variety of personality characteristics, including the variables such as sensation-seeking, self-esteem, impulsivity, egocentrism, and locus of control. Except for the studies that examine the role of only one or several personality characteristics, there exist some other kinds of risk-taking studies that investigate the relationships between risk-taking and personality as a whole as well. These studies demonstrated that sensation-seeking has mainly significant role in explaining risk-taking behaviors of adolescents.

2.2. Research on Risk-Taking and Demographic Variables

Many studies have investigated the demographic variables in relation to risk-taking. These studies indicated that there is adequate evidence to suggest relationship between risk-taking and the background variables.

Two significant demographic variables in terms of its relation to adolescent risk-taking are age and gender. Particularly, gender differences have been frequently investigated and emphasized by the risk-taking researchers (Ben-Zur & Kfir, 2003; Essau, 2004; Bell, Schoenrock & O'Neal, 2000; Ginsburg & Miller, 1982; Jelalian, Spirito, Rasile, Vinnick, Rohrbeck & Arrigan, 1997; Greene, Krcmar, Walters, Rubin & Hale, 2000). Studies investigating age, gender and risk-taking generally indicated that risk involvement increase; perception of risk decrease; and risk preferences vary with the increasing age, especially for boys.

For example, in their study, Gullone, Moore, Moss and Boyd (2000) aimed to develop an adolescent risk-taking questionnaire. 925 adolescents between 11 and 18 years of age participated in their study. One of the findings of this study indicated that later adolescents and boys were more involved in risky behaviors.

Several other studies supported this finding. Small, Silverberg and Kerns, (1992) examined the costs and benefits that adolescents perceive for engaging or not engaging in alcohol use and early sexual intercourse. Participants of this study comprised of over 2400 students from 7^{th}-12^{th} grades. Results demonstrated that girls generally perceived more costs than did boys for engaging in sexual intercourse and using alcohol. Furthermore, perceptions of the costs of alcohol use decreased with increasing age. The study supported the idea that perceptions of the costs and benefits of various health-compromising behaviors are related to gender, age, and the behaviors themselves. In other words, with the increasing age, adolescents' perceptions of the risk decreased

especially for boys; therefore, they are more likely to engage in health-compromising risky behaviors.

In another study, Gullone and Moore (2000) investigated the predictors of risk-taking. According to findings based on 459 school-based adolescents aged 11 to 18, age and gender were two of the significant predictors of risk-taking behaviors.
On the other hand, Ginsburg and Miller (1982) examined the sex differences of children in risk-taking behavior in a descriptive, naturalistic study. 480 children aged 3 to 11 participated in this study. They found that older male individuals were more likely to engage in risky behavior than girls in prepared four risk-taking situations.

Likewise, Slovic (1966) designed a decision-making game to assess the participants' willingness to take risks. 1047 children between the ages of 6 and 16 participated in his study. Based on the findings of this study, he suggested that sex difference in risk-taking was a characteristic of the American culture and boys were more inclined to take risks.

In sum, according risk-taking research, age and gender are the significant variables that have a positive or negative relationship with adolescent risk-taking behavior. More specifically, risk involvement rises and risk perception decreases, as age increases. That is, later adolescents are more predisposed to engage in risk-taking behaviors. Adolescent males are inclined to perceive risky behavior as less risky compared with their contemporary females. For this reason, males are more likely to involve in such behaviors.

2.3. Risk-Taking and Sensation-Seeking

Sensation-seeking has been commonly discussed as a personality trait in the literature. Overviewing the sensation-seeking research, one can draw the attention of two different

perspectives that explain sensation-seeking. One significant perspective is Arnett's (1994) conceptualization of sensation-seeking. According to Arnett, sensation-seeking is a personality trait characterized by the extent of a person's desire for novelty and intensity of sensory stimulation. The other perspective is Zuckerman's conceptualization of sensation-seeking. Zuckerman views sensation-seeking as a biosocial dimension of personality and defines it as "the seeking of varied, novel, complex, and intense sensations and experiences and the willingness to take physical, social, legal, and financial risks for the sake of such experience" (Zuckerman, 1994, p. 27). Besides, Zuckerman and Kuhlman (2000) emphasize the biological dimension of sensation-seeking as distinct from Arnett's conceptualization.

Furthermore, as an individual-difference approach, sensation-seeking is one of the most important concepts that has been linked with risk-taking (Zuckerman & Kuhlman, 2000). Individuals high in sensation-seeking have a tendency to involve in variety of risky behaviors such as reckless driving, smoking, sex, alcohol use, and the use of illicit drugs (Zuckerman & Kuhlman, 2000). In other words, high sensation-seekers are less likely to label risky behaviors as risky, as and more likely to either try or repeat a variety of risky activities than their peers that are low in sensation-seeking (Hoyle, Stephenson, Palmgreen, Lorch & Donohew, 2002).

Studies have found that sensation-seeking is higher in adolescence than in adulthood (Arnett, 1994; 1996). Similarly, findings suggest that reckless behavior is far more common among adolescent and young adulthood than in any other developmental period (Jonah, 1986). This may explain part of the developmental basis of sensation-seeking and reckless/risky behavior. For example, Arnett (1996) examined the contribution of sensation-seeking to the developmental basis of reckless/risky behavior in adolescence. For this purpose, two different studies were carried out, one on 133 high school students whose ages ranged between 17 and 18, and the other on 346 college students ranged between the ages of 18 to 23. Arnett Inventory of Sensation Seeking (AISS) and a

questionnaire measuring the reckless/risky behavior developed by the researcher were used to gather data. As a result, it was found that every type of reckless/risky behavior including automobile driving, alcohol and drug use were correlated with sensation seeking. This finding has been supported by Jonah's study (1997). Jonah reviewed and synthesized the literature of 1970s, 1980s and early 1990s on sensation-seeking as a direct influencer of risky driving and its consequences and as a moderator of the influence of other factors such as alcohol impairment and perceived risk. Reviewing 40 related studies, he found that sensation-seeking was correlated with many types of risk-taking behavior such as risky driving and substance use.

As mentioned above, a great amount of research has been interested in the risk-taking and sensation-seeking. These studies show that sensation-seeking is a variable that strongly related to risk-taking both at the relationship and predictor level.

As a predictor of adolescent risk-taking, sensation-seeking is one of the most salient individual characteristic. For example, Rolison and Scherman (2003) examined risk-taking in terms of three different perspectives. In one of the perspectives, dispositional traits including sensation seeking was examined. Participants were 196 college students between the ages of 18 and 21. Participants were administered the RIPS and Zuckerman's Sensation-Seeking Scale. Results showed that sensation-seeking was one of the most significant predictors of the risk involvement.

In another study, Rolison (2002) examined the effects of sensation-seeking and some other kind of dispositional traits on risk-taking. Participants were 171 older adolescents between the ages of 18-21. Results showed that risk-taking was significantly affected by sensation-seeking.

In the same vein, Greene et al. (2000) investigated the contributions of sensation-seeking and some other personality characteristics to explain adolescent risk-taking behavior.

381 high school and 343 college students participated in this study. Results of the study suggested that risk-taking behavior was significantly predicted by sensation-seeking.

Moreover, Horvath and Zuckerman (1992) examined the relationships between sensation-seeking and impulsivity, appraisal of risk, and risky behavior. Subjects were 447 undergraduate students from University of Delaware. The results of the multiple regression analysis of the data showed that sensation-seeking was a strong predictor of risky behavior.

Except for the studies that examined sensation-seeking as the predictor of risk-taking, many studies also emphasized the risk-taking-sensation-seeking relationship. For instance, in Arnett and Belle-Jensen's study (1993) participation to risk behavior was analyzed in relation to sensation-seeking, city size and various family variables. 1053 Danish adolescents between the ages of 12 and 20 from nine schools in Denmark participated in the study. Sensation-seeking and various family variables were investigated in terms of whether they have an impact on the risk behavior or not. The results demonstrated that sensation-seeking was significantly correlated with every type of risk behavior.

Similarly, Rosenbloom (2003) examined the relationship between risk-taking and sensation-seeking. Participants were 75 university students from Bar-Ilan University and their age range was 20 to 27. The results demonstrated that there was a positive relationship between risk-taking and sensation-seeking.

In another study, Fischer and Smith (2004) investigated the relationship between risk-taking and sensation-seeking in 403 college students. For this purpose, risk-taking items were divided into two groups and the groups were named as negative and positive risk-taking. Results of the study demonstrated that sensation-seeking was significantly positively correlated with both types of risk-taking.

In the same way, Hansen and Breivik (2001) examined the relationship between sensation-seeking and risk-taking behavior among adolescents. Risk behavior was defined as positive risk behavior (activities like climbing, kayaking, rafting etc.) and negative risk behavior (crime and socially unacceptable activities like shoplifting, drug use etc.). Participants were 360 Norwegian adolescents between 12 and 16 years of age. The results indicated a strong relationship between sensation-seeking and both types of risk behavior.

As a result, adolescent risk-taking research indicates that sensation-seeking is one of the strong variables that contribute to risk-taking. Furthermore, research suggests that both risk-taking and sensation-seeking reach a peak in the adolescence period. That is, when studying on adolescent risk-taking, individual characteristics such as sensation-seeking and its developmental nature are important.

2.4. Risk-Taking and Self-Esteem

Self-esteem is a personality trait that is frequently examined in the adolescent risk-taking research. Research on relationship between self-esteem and risk behaviors indicates contradictory findings (Connor, Poyrazlı, Ferrer-Wreder & Grahame, 2004). While several studies suggest that low self-esteem is correlated with increase in risk involvement (Scheier, Botvin, Griffin & Diaz, 2000; as cited in Wild et al., 2004; Belgrave, Van Oss Marin & Chambergs, 2000), other studies argue that higher self-esteem is also positively correlated with risk behaviors (DeSimone, Murray & Lester, 1994; Connor et al., 2004). However, research indicating the higher self-esteem and risk involvement relationship includes rather developmental studies, which divide risk-taking as adaptive and pathological (Baumrind & Moselle, 1985; as cited in Siegel et al., 1994). According to these studies, one of the personality characteristics of an adaptive risk-taker is higher self-esteem. Therefore, research has demonstrated that risk involvement

is either related to higher or lower self-esteem, depends upon the risk type or theoretical background of the study.

Most of the research suggest that low self-esteem is closely correlated with, and often a precursor of adolescent risk behaviors and health problems (Abernathy, Massas & Romano-Dwyer, 1995; as cited in Modrcin-Talbott et al., 1998). Similarly, Garmezy (1983 as cited in Modrcin-Talbott et al., 1998) argues that high level of self-esteem is a protective factor against risk involvement. Supporting this argument, low self-esteem has been linked to various adolescent risk behaviors such as smoking, drug use, and sexual activity. In the same vein, in a study conducted with alcoholic children, one of the personality characteristics of them was found as low esteem (Modrcin-Talbott et al., 1998). In addition, adolescent girls with low self-esteem often suffer from sexually transmitted diseases and pregnancy (Kirshner, 1994; Modrcin-Talbott et al., 1998). Furthermore, low self-esteem has been significantly associated with substance abuse (Gordon & Caltabiano, 1996), alcohol use and problem drinking (Scheier, Botvin, Griffin & Diaz; as cited in Wild, Flisher, Bhana & Lombard, 2004), and smoking (Höfler, Perkonigg, Schuster, Sonntag, Wittchen, 1999; Wild et al., 2004). On the other hand, several theorists argue that individuals with low self-esteem involve in various risk behaviors since they fail to cope with different challenging life events and the feelings that they experience (Jessor, Van Den Bos, Vanderryn, Costa & Turbin, 1995; as cited in Wild et al.). These theorists also suggest that increasing self-esteem of the individuals may help to reduce involving in risk behaviors.

In a longitudinal study Jessor, Donovan, and Costa (1991) examined the role of some social-environmental and personality variables including self-esteem in explaining risk-taking from a problem behavior perspective. Participants of the study were 384 high school and 184 college students. They found that problem behavior proneness in adolescence was significantly related to young adult problem behavior. Personality

variables including self-esteem consistently predicted the problem behaviors such as drinking, drug use, and cigarette smoking in young adulthood.

In another study, Wild, Flisher, Bhana and Lombard (2004), investigated the relationship between six self-esteem domains (peers, school, family, sports, body image, and global self-worth) and risk behaviors. Participants were 939 high school students from South Africa and between the grades of 8 and 11. Results suggested that interventions that aim to protect adolescents from engaging in risk behaviors by increasing their self-esteem are likely to be most effective and cost-efficient if they are aimed at the family and school domains.

Similarly, McKaig (1989) investigated the relationship between self-esteem and health behavior in 303 middle aged adolescents. The results of the study demonstrated that there was a significant correlation between higher self-esteem and healthier behavior.

Distinct from the studies above, Gonzales and Field's study (1994) emphasized the developmental aspects of higher self-esteem, in relation to adolescent risk-taking. In Gonzales and Field's study (1994), adolescent's perceptions of risk-taking behaviors (sports and danger) and their relationships with other risk and protective factors including parents and peers, social support, family responsibilities, self-esteem, depression; and drug use were examined. In other words, 440 adolescents were assessed in terms of the differences between high and low sports risk-taking, danger risk-taking and other personality variables. Results of this study demonstrated that sports risk takers reported more danger-related risk-taking and more drug use but higher self-esteem than did non-risk takers.

2.5. Risk-Taking and Locus of Control

Research suggests that locus of control is an important personality characteristic in adolescent risk-taking. In other words, individual's risk-taking behavior can be affected by perceived control over the events of that individual. Nevertheless, research findings related to this topic is not consistent. For example, Ahmed (1985) examined the relationship among entrepreneurship, locus of control, risk-taking propensity, and need for achievement. 133 participants were divided into two groups as entrepreneurs and non-entrepreneurs. Results showed positive correlation between risk-taking propensity, an internal locus of control, and need for achievement among entrepreneurs. On the other hand, Montag and Comrey (1987) explored the relationship between involvement in fatal driving accidents and locus of control. 400 (200 applicants for drivers' licenses and 200 individuals who had been involved in a fatal motor accident) people from Israel participated in this study. To examine the participants' driving behavior more specifically, Rotter's Locus of Control Scale was oriented to driving behavior. They found driving-internality to be negatively related and driving externality to be positively related to involvement in fatal accidents. Therefore, people who attribute events externally may be more likely to involve in health compromising behaviors or risky driving.

From personality difference approach, a considerable number of studies in relation to adolescent risk-taking have examined the role of locus of control. For example, in a sample which composed of 384 high school and 184 college students, Jessor, Donovan, and Costa (1991) found that problem behavior proneness such as problem drinking, alcohol use, marihuana use, cigarette smoking, and general deviant behavior in adolescence were significantly related to young adult problem behavior. Personality variables including locus of control consistently predicted the problem behaviors such as drinking, drug use, and cigarette smoking in young adulthood.

Similarly, Crisp and Barber (1995) investigated the relationship between risk-taking and risk perception, sexual risk-taking and locus of control in a sample consisting of injecting drug users. Participants of the study were 37 adolescents between the ages of 14-21. The result of this study demonstrated that decisions that the adolescents made about taking risks were significantly affected by their internal/external locus of control. More specifically, locus of control was found the mediate the relationship between perception and behavior. Adolescents with an internal locus of control made moderately accurate assessments about their risk. However, having an internal locus of control did not result in safer behaviors.

In contrast to studies mentioned above, locus of control was not found to be a significant predictor of risk-taking in several studies. In an earlier study, Jobe, Holgate, and Scrapansky (1983) investigated risk-taking as motivation for volunteering for a hazardous experiment in the US Army setting. Eighty male enlisted personnel of the US Army were tested to assess the psychological correlates of volunteering for a hazardous combat simulation. Individuals who participated in the experiment of simulation were otherwise administered the IPAT Anxiety Scale, Rotter's Locus of Control Scale (IELOC) and Torrance and Ziller's life experience inventory. Results of this study indicated that individuals who were volunteers to participate in the experiment were greater risk takers than nonvolunteers. On the other hand, locus of control was not a significant predictor in discriminating the volunteer and nonvolunteer participants. In other words, volunteers were no more internally controlled than nonvolunteers.

Rolison (2002) examined the effects of several personality variables including locus of control on the risk-taking behavior. Participants were 171 older adolescents between the ages of 18-21. It was found that locus of control was not related to the risk-taking.

Likewise, Rolison and Scherman (2003) examined risk-taking in terms of three different perspectives. In one of the perspectives, dispositional traits including locus of control

were examined. Participants were 260 college students between the ages of 18 and 21. Participants were administered the RIPS, Rotter's Locus of Control Scale and Zuckerman's Sensation-Seeking Scale. Results showed that locus of control was not a significant predictor of risk involvement.

As a result, locus of control has also been examined in the risk-taking research. However, results of these studies indicate that the role of locus of control in explaining risk-taking is ambiguous.

2.6. Research on Risk-Taking in Turkey

Research on adolescent risk-taking is rather limited in Turkey. Few studies have investigated the adolescent risk-taking behaviors concomitantly. Instead, different types of risk-taking behaviors (e.g. alcohol and drug use, smoking, driving related behaviors) have been examined individually.

In one of the risk-taking studies, Bayar (1999) examined impulsivity, family structure, and demographic background of Turkish adolescents, in relation to risk-taking. Participants were 280 students between the ages of 13-20 from high schools and universities in Ankara. In the study, Bayar's Risk-Taking Behavior Scale, Barratt Impulsivity Scale, and Family Structure Assessment Form were administered to gather data. Results of the study demonstrated that age and gender were significant variables in risk-taking. Risk-taking scores of male participants were higher than their female counterparts. Results also indicated that gender, age, and impulsivity significantly contributed to explain risk-taking behavior, while family structure provided only limited contribution.

In another study, Yılmaz (2000) investigated the relationship between adolescents' risk-taking behaviors and their peer and family characteristics, along with school lives.

Participants of the study were 1206 high school students aged 12 to 18. Results demonstrated that there was a significant relationship between risk-taking behavior and socioeconomic status, educational status of parents, number of sibling, and working status of mother. Moreover, as risk-taking behaviors increased, the socioeconomic status and educational level of parents increased.

Yet in another study, Kıran (2002) examined the relationships among peer pressure, risk-taking, cigarette smoking, and academic achievement. 718 adolescents attending high school in İstanbul participated in the study. Results demonstrated that risk-taking behavior and peer pressure were significantly and positively correlated among Turkish high school students. It was also reported that risk-taking behavior of adolescents mediated the relationship between peer pressure and gender among these adolescents.

In a recent study, Kıran (2003) investigated the role of peer pressure, academic achievement, and age in predicting the risk-taking behavior of Turkish adolescents. Participants of the study were 684 high school students aged 15 to 18. Peer pressure and risk-taking were measured via Peer Pressure Scale and Kıran's Adolescent Risk-Taking Behavior Scale. Results of the study indicated that risk-taking behavior was positively predicted by peer pressure and age; while academic achievement predicted the risk-taking behavior negatively.

Review of Turkish literature has also indicated the risk-taking studies with young adult and adult samples. For instance, Işık and Yasak (1997; as cited in Yılmaz, 2000) examined the relationship between accident involvement and risk-taking propensity of Turkish drivers. They found that risk-taking propensity had a significant role in explaining accident involvement. They also found that young drivers were more inclined to take risks than older drivers did.

Sümer (2003) investigated the effects of various personality variables including sensation-seeking on the aberrant behaviors, dysfunctional drinking, and preferred speed among 295 Turkish professional drivers. Results of this study indicated that preferred speed of Turkish professional drivers was significantly predicted by sensation-seeking.

Except for the studies that examined the risk-taking behaviors concomitantly, there exist several studies discussing one or more type of risk-taking separately in Turkish literature. For example, Önder (1984; as cited in Yılmaz, 2000) reported that adolescent males were more likely to involve in smoking than their female counterparts. Besides, the researcher reported that smoking behavior increased with the increasing age.

Bilir and Mağden (1984; as cited in Yılmaz, 2000) have also reported similar findings. They found that the rate of cigarette smoking and alcohol use of males were higher than females among adolescents. They also found that the rate of cigarette smoking was higher among later adolescents. Likewise, Yüksel, Dereboy, and Çifter (1994; as cited in Yılmaz, 2000) examined the alcohol and drug use of university students. In this study, 70% of the participants reported that they used alcohol at least one time during their life. The majority of participants that used addictives at least one time also reported that the first time they used such substances was before the age of 15.

As a result, few studies investigated adolescent risk-taking in Turkey. However, findings associated with background variables such as age and gender were consistent with the risk-taking literature. In other words; males and older adolescents are more likely to involve in risk-taking behaviors than other groups of adolescents; as it is in the findings of studies conducted abroad.

CHAPTER III

METHOD

This chapter is composed of eight sections. In the first section, overall design of the study is examined. In the second section, research question is summarized. Descriptions of variables used in the study are given in the third section. In the fourth section, sample selection procedure, research participants, and their characteristics are specified. Fifth section deals with the data collection instruments used in the study. The data collection procedure that followed in the study is expressed in the sixth section. In the seventh section, data analyses that applied to clarify collected data are explained. Finally, limitations of the study are discussed.

3.1. Overall Design of the Study

The purpose of the present study is to examine the role of several demographic and personality characteristics of Turkish adolescent risk takers. More specifically, how well gender, age, sensation-seeking, self-esteem, and locus of control predict the risk involvement frequencies of Turkish adolescents was examined in this study. Involvement subscale of a modified form of Risk Involvement and Perception Scale (RIPS), Arnett Inventory of Sensation-Seeking (AISS), Rosenberg Self-Esteem Scale (RSES), Rotter Internal-External Locus of Control Scale (IELOC), and a demographic data form were administered to 867 high school students from three schools (2 Anatolian high schools and a general lycee) in Ankara. The student selection was not based on the random sampling; rather convenient groups of students were used. Descriptive statistics and multiple regression analysis were executed to analyze the collected data.

3.2. Research Question

The main research problem of the study can be summarized as follows: How well do sensation-seeking, self-esteem, locus of control, age, and gender predict overall risk involvement frequencies of Turkish high school students?

3.3. Description of Variables

Risk-Taking Behaviors: refers to the sum of scores as measured by involvement subscale of the Modified Risk Involvement and Perception Scale (M-RIPS).

Sensation-Seeking: refers to the sum of scores as measured by Arnett Inventory of Sensation-Seeking (AISS).

Self-Esteem: refers to the sum of scores as measured by Rosenberg Self-Esteem Scale (RSS).

Locus of Control: refers to the sum of scores as measured by Rotter Internal-External Locus of Control Scale (IELOC).

Age: is a continuous variable and refers to the age of the participants.

Gender: is a dichotomous variable with categories of (1) female and (2) male. For multiple regression analysis, this variable was dummy coded as 0 for females and as 1 for males.

3.4. Population and Sample Selection

The population of the study was Turkish high school students. The sample was selected from two Anatolian high schools and a general lycee in Ankara. The sample selection procedure was carried out based on the convenient sampling method.

Eight hundred and sixty-seven volunteered high school students whose ages ranged between fifteen and nineteen (M=16,67; SD=.83) from three different schools in Ankara (Etimesgut Anatolian High School, Milli Piyango Anatolian High School and Yıldırım Beyazıt High School), participated in the study. Three hundred and ninety-eight were female (45,9%), and four hundred and sixty-eight were male (54%). Because the set of scales that compose of four different scales and a demographic data form administered in the final exam dates of the high schools, classroom attendance was high, and therefore the participation rate was quite high.

3.5. Data Collection Instruments

A modified form of involvement subscale of the Risk Involvement and Perception Scale (RIPS) (See Appendix B), which was adapted to Turkish culture by the researcher, Turkish forms of Arnett Inventory of Sensation Seeking (Sümer, 2003) (See Appendix C), Rosenberg Self-Esteem Scale (Çuhadaroğlu, 1986) (See Appendix D), Rotter Locus of Control Scale (Dağ, 1991) (See Appendix E), and a demographic data form (See Appendix A) which was developed by the researcher were used as data collection instruments in the present study.

3.5.1. Modified Risk Involvement and Perception Scale (M-RIPS)

Risk Involvement and perception scale developed by Siegel et al., (1994) contains 18 items and four subscales. The four subscales are involvement, intentions, perceived

risks, and perceived benefits. In another study, Parsons et al. (1997) revised the scale and one of the items, "driving car" has been excluded from the RIPS.

Original RIPS is a 9-point Likert type scale and the same set of 17 items takes part in each of the subscales with appropriate instructions for that subscales. Each of the 17 items depicts a low, moderate or higher risky behavior that might be displayed by an adolescent as a self-destructive or destructive behavior such as "smoking", or "having sex". The possible maximum score obtained from the scale is 153 and minimum is 17. The higher scores show that risk is high, and individuals' involvement of risk-taking behaviors is frequent. Construct and content validity of involvement subscale of Risk Involvement and Perception Scale included six factors (Alcohol, illegal drugs, sexual behavior, stereotypic male behavior, socially acceptable behavior, and imprudent behaviors) (Parsons et al., 1997; Rolison & Scherman, 2003). These six factors accounted for 66% of the variance in reported involvement (Rolison & Scherman, 2003). For the involvement subscale, while the test-retest reliability coefficient was .86, alpha internal reliability coefficient found as .72 (Ben-Zur & Reshef-Kfir, 2003).

"Involvement" subscale of the Risk Involvement and Perception Scale was adapted to Turkish culture by the researcher in the present study. Involvement subscale intends to measure the frequency of involvement in the last three months with given 17 behaviors.

3.5.1.1. Adaptation Study of M-RIPS

Firstly, RIPS was translated into Turkish. For this purpose, RIPS was given to 3 judges working as academicians, in the Department of Educational Sciences, Middle East Technical University and Hacettepe University, who have an adequate knowledge in the area of counseling and psychology along with a good command in both English and Turkish. Afterwards, back translation was performed by 3 judges who have a good knowledge in the area of counseling and psychology along with a good command in

English and Turkish. At the end of the back translation study, any disparity and inconsistency were not observed in the meaning of items in both languages. Therefore, Turkish form of the RIPS was obtained for the application.

3.5.1.2. Exploratory Factor Analysis of M-RIPS

First, exploratory factor analysis was performed on the collected data using SPSS 13.0. Results of the principal component analysis for the RIPS revealed 6 factors explaining 59% of the total variance with eigenvalues of 3.131, 1.839, 1.262, 1.173, 1.120, and 1.014 respectively. However, one of the items did not load on any of the factors and several items were highly crossloaded on at least two components. Thereupon, principal component analysis with varimax rotation was executed using 0.35 cut-off points for item loadings, as it was in the original study of the RIPS. Besides, items clustered within each factor in terms of their content were examined. The results did not seem to be theoretically meaningful. In other words, no similar factor structure with the original RIPS was found.

Since the preliminary factor analysis with the original RIPS with 17 items did not reveal any theoretically meaningful factor structure, fifteen items from the previous versions of RIPS were added to examine the new factor structure of risk-involvement behaviors of Turkish adolescents. Eight items from the older version of the RIPS (Lavery, Siegel, Cousins & Rubovits, 1993), and seven items from the modified version of the RIPS (Ben-Zur & Reshef-Kfir, 2003) along with the 17 items of the original RIPS were listed and administered to the participants. Afterwards, these 32 items (17 items from the original RIPS and 15 items from the older and the modified forms of RIPS) were assessed in a series of factor analysis using SPSS 13.0. As it was in the original study, principal component analysis with varimax rotation was conducted again. After numerous analyses were conducted using 0.35 cut-off points, two-factor solution with 23 items was found. Nine items were dropped from the analysis, since they did not load on

any of the component or highly crossloaded on at least two components. Results of the principal component analysis with varimax rotation of the M-RIPS also revealed the eigenvalues of the two factors as 5.267 and 3.871 respectively. These two factors explained 39.73% of the variance. This solution also seemed to be theoretically meaningful. A list of two factors, their factor loadings, and the content of the items that were grouped under those factors of M-RIPS were presented in Table 3.1. Furthermore, eigenvalues, percentages and cumulative percentages of the explained variance of the factors of M-RIPS were given in Table 3.2.

Table 3.1.
Factor Loadings and Communalities of the Items of M-RIPS via Principal Component Analysis with Varimax Rotation

Item N.	Items of M-RIPS	Com	F1	F2
	Low-Risk Behaviors			
24	Truancy	.441	**.663**	-
2	Drinking alcohol	.405	**.622**	-
9	Walking alone at night	.400	**.618**	-
32	Driving without license	.409	**.613**	-
31	Gambling	.370	**.602**	-
5	Taking speed (car, bicycle, motorcycle)	.362	**.594**	-
7	Driving a car	.363	**.591**	-
27	Incomplete homework	.333	**.576**	-
23	Cheating	.330	**.574**	-
28	Carrying gun/knife etc.	.370	**.558**	-
29	Accepting ride with a stranger	.341	**.553**	-
3	Getting drunk	.326	**.551**	-
8	Smoking	.317	**.544**	-
30	Hitchhiking	296	**.490**	-
17	Driving/riding without a seatbelt	.208	**.455**	-
20	Racing on a bike	.164	**.379**	-
	High-Risk Behaviors			
16	Taking cocaine	.754	-	**.868**
13	Smoking marijuana	.721	-	**.845**
19	Smoke hash	.660	-	**.801**
15	Driving after drinking	.585	-	**.742**
26	Sniffing gas or glue	.497	-	**.695**
6	Shoplifting	.304	-	**.523**
18	Taking prescription drugs without doctor's approval or in excess	.181	-	**.369**

Table 3.2.
Rotation Sums of Squared Loadings of Factors of M-RIPS

Component	Eigenvalue	% of Variance	Cumulative %
1. Low Risk Behaviors	5.267	22.898	22.898
2. High Risk Behaviors	3.871	16.832	39.729

In addition, the concurrent validity assessment of M-RIPS was also demonstrated through a moderate but significant positive correlation with the thrill-seeking/risk-taking subscale of the Multidimensional Self-Destructiveness Scale developed by Persing and Schick (1999). Pearson Product Correlation coefficient between the scores of two measures was .36.

3.5.1.3. Confirmatory Factor Analysis of M-RIPS

In addition to the exploratory factor analysis, a confirmatory factor analysis with two factors was conducted to test the measurement model. In other words, based on the results of the exploratory factor analysis, a confirmatory factor analysis was conducted to examine how well the measurement model fitted the observed data.

A confirmatory factor analysis was estimated in LISREL 8.74 using correlation matrix. The measurement model estimated using a polychoric correlation matrix and maximum likelihood estimation method to generate parameter estimates. To estimate an optimal and preferred confirmatory factor analysis model, model fit was assessed depend upon the goodness-of-fit statistics in the present study. A non-significant χ^2 value shows that the measurement model fits the data adequately. However, the χ^2 is very sensitive to sample size. For example, as the sample size increases, the χ^2 is likely to indicate a significant probability level and vice versa (Güloğlu, 2006). Although any exact guideline do not exist, Bryne (1989; cited in Güloğlu, 2006) argued that a χ^2/df ratio of less than 2.00 as a conservative indicator of an acceptable fit. Different from Bryne, Kline (1998; cited in Güloğlu, 2006) noted that χ^2/df ratio of less than 3.00 is

considered acceptable. Moreover, the χ^2 value is sensitive to distortion away from multivariate normality (Haynes, Miles & Clements, 2000). To avoid these gaps, model fit was also assessed using the Non-Normed fit index (NNFI) (Bentler & Bonett, 1980; as cited in Haynes, Miles & Clements, 2000) and the Root Mean Square Error of Approximation (RMSEA) (Steiger, 1990; Steiger & Lind, 1980; as cited in Haynes, Miles & Clements, 2000). Haynes, Miles, and Clements (2000) suggested that value for NNFI of 0.90 or above up to the value of 0.95 indicated an adequate fit and a value of 0.95 or above showed an excellent fit. Similarly, Browne and Cudeck (1993; as cited in Haynes, Miles & Clements, 2000) argued that RMSEA below 0.08 showed an adequate fit and values below 0.05 indicated a good fit. Fit indices were assessed based on this information.

The standardized Lambda-x values, standard errors, t-values, and squared multiple correlations (R^2) obtained from the CFA were given in the Table 3.3. As can be seen from Table 3.3, all parameter estimates were statistically significant ($p < 0.05$). In addition, all Lambda-x values, which are loadings of each observed variable, ranged from 0.33 to 0.86.

Table 3.3.
Standardized Lambda-x Estimates, Standard Errors, t-values, and Squared Multiple Correlations (R^2) of the Observed Variables of M-RIPS

Item No	Latent and Observed Variables	λ_x	SE	t	R^2
	Low-Risk Behaviors				
2	Drinking alcohol	0.58	0.05	17.32	0.34
3	Getting drunk	0.50	0.05	14.48	0.25
5	Taking speed	0.52	0.05	15.22	0.27
7	Driving car	0.49	0.05	14.10	0.24
8	Smoking	0.54	0.05	15.94	0.29
9	Walking alone at night	0.60	0.05	18.14	0.36
17	Driving/riding without seatbelt	0.40	0.05	11.43	0.16
20	Racing on a bike	0.33	0.05	9.21	0.11
23	Cheating	0.54	0.05	15.96	0.29
24	Truancy	0.63	0.05	19.32	0.40
27	Incomplete homework	0.56	0.05	16.48	0.31
28	Carrying gun/knife	0.58	0.05	17.22	0.33
29	Accepting ride with a stranger	0.51	0.05	14.90	0.26
30	Hitchhiking	0.46	0.05	13.12	0.21
31	Gambling	0.58	0.05	17.36	0.34
32	Driving without license	0.54	0.05	15.83	0.29
	High-Risk Behaviors				
16	Taking cocaine	0.45	0.05	13.19	0.20
13	Smoking marijuana	0.86	0.05	30.23	0.73
19	Smoking hash	0.75	0.05	25.74	0.56
15	Driving after drinking	0.82	0.05	28.42	0.68
26	Sniffing gas or glue	0.34	0.05	9.81	0.12
6	Shoplifting	0.75	0.05	25.06	0.57
18	Taking prescription drugs without doctor's approval or in excess	0.61	0.05	18.79	0.37

After the first run of the model, it was seen that modification indices suggested four significant correlations between the unique variances of items 31 and 7; 30 and 29; 3 and 2; 20 and 5, and these parameters were added to the model. The results of the confirmatory factor analysis (CFA) of M-RIPS with two latent variables yielded the following goodness-of-fit indices: χ^2 (225) = 1289.45 p = 0.00, χ^2 /df = 5.73, RMSEA = 0.077; NNFI = 0.93; CFI = 0.93; GFI = 0.88; SRMR = 0.067. The results demonstrated that although χ^2 value was significant, the other fit indices indicated an acceptable fit to the data. Lisrel estimates of parameters in the measurement model for M-RIPS with coefficients to standardized values and t-values are presented in Appendix "F", respectively.

The first latent variable represented observed variables associated with low-risk behaviors. These sixteen observed variables were significantly and positively loaded on the latent variable. Observed variables including "drinking alcohol" (λ_x = 58, p < 0.05); "getting drunk" (λ_x = 50, p < 0.05); "taking speed" (λ_x = 52, p < 0.05); driving a car" (λ_x = 49, p < 0.05); "smoking" (λ_x = 54, p < 0.05); "walking alone at night" (λ_x = 60, p < 0.05); "driving/riding without seatbelt" (λ_x = 40, p < 0.05); "racing on a bike" (λ_x = 33, p < 0.05); "cheating" (λ_x = 54, p < 0.05); "truancy" (λ_x = 63, p < 0.05); "incomplete homework" (λ_x = 56, p < 0.05); "carrying gun/knife" (λ_x = 58, p < 0.05); "accepting ride with a stranger" (λ_x = 51, p < 0.05); "hitchhiking" (λ_x = 46, p < 0.05); "gambling" (λ_x = 58, p < 0.05); "driving without license" (λ_x = 54, p < 0.05) were significantly and positively loaded on first latent variable named low-risk behaviors. "Truancy" accounted for the greatest variance of this latent variable (R^2 = 0.40). Observed variables including "taking cocaine" (λ_x = 45, p < 0.05); "smoking marijuana" (λ_x = 86, p < 0.05); "smoking hash" (λ_x = 75, p < 0.05); "driving after drinking" (λ_x = 82, p < 0.05); "sniffing gas or glue" (λ_x = 34, p < 0.05); "shoplifting" (λ_x = 75, p < 0.05); "taking prescription drugs without doctor's approval or in excess" (λ_x = 61, p < 0.05); were significantly and positively loaded on the second latent variable named high risk behaviors. "Smoking marijuana" accounted for the greatest variance of this latent variable (R^2 = 0.73).

3.5.1.4. Internal Consistency of M-RIPS

Internal consistency of M-RIPS evaluated through the Cronbach Alpha reliability estimation (n = 867). The evaluation of reliability demonstrated that Cronbach alpha coefficient .86 for overall M-RIPS, .86 for low risk behaviors, .79 for high risk

behaviors. These results revealed that M-RIPS has satisfactory internal consistency for overall scale and for its two subscales.

3.5.2. Arnett Inventory of Sensation Seeking (AISS)

Arnett Inventory of Sensation Seeking (Arnett, 1994) is an instrument that measures the individuals' level of sensation seeking. AISS is a 4-point Likert-type inventory that consists of 20 items (e.g. "I can see how it would be interesting to marry someone from a foreign country") and has five reverse items (e.g. "If I have to wait in a long line, I'm usually patient about it"). The maximum score that can be obtained from the inventory is 80, and minimum is 20. The items are grouped in the two subscales that named as novelty and intensity. Whereas item 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 take part in the novelty subscale, item 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 include in the intensity component of the AISS. In his study with adolescents, Arnett (1994) has found that internal reliability (α) of the total scale was .70, .64 for the intensity, and .50 for the novelty subscale.

AISS has been used in several studies in Turkish sample (Sümer, 2000; Sümer, 2002; Ayvaşık, Sümer & Er, 2005; Sümer & Özkan, 2002). These studies have been conducted on adult samples (drivers). For example, in Sümer's (2003) study, AISS factor structure with Multidimensional Self-Destructiveness Scale (MSS) developed by Persing and Schick (1999) was examined in adult male drivers and it was found that 19 items of AISS together with the five items of MSS yielded three interpretable components, representing the two subscales of the AISS and MSS, explaining 34% of the variance. For the five items representing the novelty subscale, 19% of the variance was explained, and for the eight items of the intensity subscale explained 8% of the variance. Some items did not load any of the factors or highly cross-loaded on at least two components, thus they were excluded from the factor analysis. Besides, one of the items that takes part in the original form of the AISS, "I don't like extremely hot and spicy foods"

initially excluded from the inventory because of common use of spices in the Turkish foods. In that study internal consistency coefficients (α) were acceptable; for novelty .62, and for intensity .68. In another example, Ayvaşık, Er, and Sümer (2005) examined the factor structure of the AISS together with the five items of the MSS again. Results of the study indicated that a single factor solution with 19 items represented a better fit to the data. Besides, alpha correlation coefficient was found as .85.

3.5.2.1. Factor Analysis of AISS

Exploratory factor analysis was carried out for the AISS in the present study. Primarily, principal component analysis was conducted on the data. Results of the principal component analysis for the AISS revealed 6 factors explaining 47.299% of the total variance with eigenvalues of 2.732, 1.502, 1.476, 1.130, 1.118, and 1.028 respectively. However, several of the items did not load on any of the factors and several items were highly crossloaded on at least two components. Thereupon, series of principal component analyses with varimax rotation were conducted to find out a similar factor structure with the original AISS. Using the 0.30 cut-off points, results of the principal component analysis yielded two-factor solution with eigenvalues of 2.245, explaining 12.470% of the variance and 1.815, explaining 10.084% of the variance, respectively. This two-factor included 18 items of the AISS. Remaining item (item 17) dropped from the analysis, since it was highly crossloaded on the two components of the AISS. Besides, using .30 cut-off points, four items did not load on any of the components. They were not dropped from the analysis, since more alteration on the components brought about a more complicated structure to make a theoretically meaningful interpretation. Furthermore, item 2 and item 19 loaded on the novelty component, although they loaded on the intensity component in the original AISS. Table 3.4 shows factor loadings of two-factor solution for the AISS. In addition, eigenvalues and percentages of the explained variance of the two components were given in Table 3.5.

Table 3.4.
Factor Loadings of AISS

Item No	Items of AISS	Com	F1	F2
18	I can see how it must be exciting to be in a battle during a war.	.470	**.663**	
11	I like a movie where there are a lot of explosions and car chases.	.467	**.649**	
16	I like the feeling of standing next to the edge on a high place and looking down.	.413	**.603**	
14	It would be interesting to see a car accident happen.	.325	**.550**	
7	If I were to go to an amusement park, I would prefer to ride the rollercoaster or other fast rides.	.269	**.455**	
5	I stay away from movies that are said to be frightening or suspenseful.	.209	**.412**	
12	In general, I work better when I'm under pressure.	.056	-	-
6	I think it's fun and exciting to perform or speak before a group.	.047	-	-
10	I would have enjoyed being one of the first explorers of an unknown land.	.030	-	-
19	When I listen to music, I like it to be loud.	.409		**.639**
13	I often like to have the radio or TV on while I'm doing something else, such as reading or cleaning up.	.185		**.428**
3	If I have to wait in a long line, I'm usually patient about it.	.185		**.428**
15	I think it's best to order something familiar when eating in a restaurant.	.172		**.414**
2	When the water is very cold, I prefer not to swim even if it is a hot day.	.166		**.401**
1	I can see how it would be to marry someone from a foreign country.	.154		**.351**
4	When taking a trip, I think it's best to make as few plans as possible and just take it as it comes.	.183		**.342**
8	I would like to travel to places that are strange and far away.	.194		**.340**
9	I would never like to gamble with money, even if I could afford it.	.127	-	-

F1: Intensity subscale
F2: Novelty subscale

Table 3.5.
Rotation Sums of Squared Loadings of Two Factors of AISS

Component	Eigenvalue	% of Variance	Cumulative %
F1	2.245	12.470	12.470
F2	1.815	10.084	22.554

3.5.2.2. Internal Consistency of AISS

Internal consistency of AISS was calculated through Cronbach Alpha Coefficient (n = 867). Cronbach's Alpha Correlation Coefficient of two-factor solution was found as .64 for overall inventory, .61 for intensity, and .45 for novelty. These results suggest that

AISS has an acceptable support in terms of internal consistency of the overall inventory.

3.5.3. Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965)

Rosenberg Self-Esteem Scale (RSES) (Appendix D) is a 10-item Guttman Scale which was developed by Rosenberg (1965). The aim of the RSES is to measure the adolescents' global self-esteem. RSES has 63 items with 12 subscales. In this study, one of the subscales of the scale, Self-Esteem was used to measure the participants' self-esteem levels. RSES is scored with the use of Likert-type format. The scale has five positive (e.g. "On the hole I am satisfied with myself") and five negative (e.g. "At times, I think I am no good at all") items. Rating one of the options that contains "strongly disagree", "disagree", "agree", and "strongly agree", respondents get the points between 0-30. The higher the points a respondent gets, the higher the self-esteem level becomes.

The adaptation study of Rosenberg Self-Esteem Scale to Turkish adolescents was conducted by Çuhadaroğlu (1986). In the adaptation study, psychiatric interviews that conducted with the high school students were used as criterion for the RSES. Examining correlation coefficient between the scores of interviews and self-esteem scale revealed a good criterion coefficient, .71. On the other hand, in a recent study conducted by Çelik (2004), RSES was also found as a quite reliable scale in university sample. In Çelik's study, Cronbach Alpha coefficient for RSES was found as .87 (n = 733).

3.5.3.1. Factor Analysis of RSES

Factor analysis with principal component analysis was conducted using SPSS 13.0. Results of the principal component analysis for the RSES revealed acceptable factor loadings, with the eigenvalue of 3.792; explaining 37.92% of the variance. Item loadings of the RSES were given in Table 3.6. Moreover, eigenvalue and percentage of the explained variance of RSES were presented in Table 3.7.

Table 3.6.
Factor Loadings of RSES

Item No	Items of RSES	Com	F1
6	I take positive attitudes toward myself.	.494	**.703**
9	I certainly feel useless at times.	.481	**.693**
7	On the whole, I am satisfied with myself.	.478	**.692**
10	At times, I think I am no good at all.	.459	**.678**
5	I feel I do not have much to be proud of.	.413	**.643**
3	All in all, I am inclined to feel that I am a failure.	.377	**.614**
1	I feel that I'm a person of worth, at least on an equal plane with others.	.310	**.557**
4	I am able to do things as well as most other people.	.299	**.546**
2	I feel that I have number of good qualities	.298	**.546**
8	I wish I could have more respect for myself.	.183	**.428**

Table 3.7.
Rotation Sum of Squared Loading of RSES

Component	Eigenvalue	% of Variance	Cumulative %
F1	3.792	37.923	37.923

3.5.3.2. Internal Consistency of RSES

Internal consistency of RSES was calculated through Cronbach Alpha Coefficient (n = 837). Cronbach Alpha Coefficient of RSES was found as .81 in the present study.

3.5.4. Internal-External Locus of Control Scale (IELOC)

The original form of the Internal-External Locus of Control Scale (IELOC) was developed by Rotter (1966). IELOC is a self-report scale contains 29 forced-choice items. Scoring range of the IELOC is between 0-23, the higher scores express the external locus of control and vice versa. Since they are buffer (e.g. "A. Children get into trouble because their parents punish them too much" and B. The trouble with most children nowadays is that their parents are too easy with them."), 6 items are excluded from the scoring process. The psychometric properties of Turkish version of the IELOC were examined by Dağ (1991), and it was found that IOLEC has sufficient reliability and factorial and criterion-related validity. Whereas the Cronbach Alpha correlation

coefficient was .71, test-retest reliability coefficient was calculated as .83 (Çoban, 2005). Moreover, in his recent study, Dağ (1997) has demonstrated that the scale has five interpretable factors. In that study, Dağ employed principal component analysis with varimax rotation, and it was found that IELOC explained 52.1% of the total variance. The five factors' names and their portions in variance were as follows: Unjust World (13.9%), Personal Control (7.0%), Control in Achievement Situations (6.9%), Chance and Fate (5.5%), and Interpersonal Control (5.3%).

3.5.4.1. Internal Consistency of IELOC

Internal consistency of IELOC was calculated through Cronbach's Alpha Coefficient (α) using SPSS 13.0. Cronbach's Alpha Coefficient was found as .64 for total score of IELOC in the present study (n = 867).

3.5.5. Demographic Data Form

Demographic Data Form, which was developed by the researcher, includes questions about age, gender, perceived socioeconomic status, intensity of religious belief, parent educational and occupational level (See Appendix A).

3.6. Data Collection Procedure

A set of four scales which consist of M-RIPS, AISS, RSES, IELOC and a demographic form were arranged to collect data. Before collecting data, permission was granted from the Ministry of Education. After gathering necessary permissions, the schools that specified for application (Etimesgut Anatolian High School, Milli Piyango Anatolian High School, and Yıldırım Beyazıt High School) were visited at the last week of 2005 and the first week of 2006, and the implementation was occurred on these days. Before

administering the set of scales, participants were informed about the purpose of the study and the necessary directions were given comprehensively for filling out the instruments. After explanations, participants were allowed to decide whether they attend to fill out the instruments or not. Filling out the entire instruments took approximately 25 minutes.

3.7. Data Analysis Procedure

In this study, in order to assess how well sensation-seeking, self-esteem, locus of control, age, and gender predict risk involvement frequencies of Turkish high school students, a standard multiple regression analysis was conducted. SPSS 13.0 (Statistical Package for Social Sciences) for Windows was utilized to perform all the analyses. The .05 alpha level was accepted as a criterion of statistical significance for all statistical procedures.

3.8. Limitations of the Study

This study has several limitations. First, sample selection was based on the convenient sampling. Therefore, generalizability of the findings to all Turkish adolescents is limited.

Second, data collection instruments were based on the participants' self-reports. Hence, it should be noted that results might not actually reflect the participants' characteristics.

CHAPTER IV

RESULTS

In this chapter, results of the statistical analyses associated with the predictors of risk-taking behaviors among Turkish adolescents are examined. This chapter includes two main sections. In the first section, means and standard deviations of the quantitative predictor variables and the scores of M-RIPS are given. The intercorrelations among quantitative predictor variables and the dependent variable are also given in this section. In the second section, the results of the standard multiple regression analysis are presented.

4.1. Descriptive Statistics and Bivariate Correlations of Quantitative Predictor Variables and the Criterion Variable

Means and standard deviations of the quantitative predictor variables and the scores of M-RIPS are presented in Table 4.1.

Table 4.1.
Means and Standard Deviations of the Quantitative Predictor Variables and the Criterion Variable

Descriptive Statistics	M	SD	n
1. M-RIPS Scores	50.495	18.285	844
2. Sensation-Seeking	52.648	7.431	844
3. Self-Esteem	21.355	4.744	844
4. Locus of Control	11.562	3.691	844
5. Age	16.669	.832	844

The Pearson Product Correlation Coefficients among quantitative predictor variables and criterion variable are presented in Table 4.2.

Table 4.2.
The Pearson Product Correlation Coefficients among quantitative predictor variables and the criterion variable

Variables	**1**	**2**	**3**	**4**	**5**
1. Total M-RIPS Scores	-				
2. Sensation-Seeking	.440**	-			
3. Self-Esteem	.042	-.019	-		
4. Locus of Control	.178**	.185**	.181**	-	
5. Age	.262**	.130**	.025	.086	-

**Correlation is significant at the .01 alpha level.

The intercorrelations among variables ranged from -.019 to .440. These results indicated low to moderate correlations among criterion and predictor variables. As seen in Table 4.2, M-RIPS scores were significantly and positively correlated with sensation-seeking, locus of control, and age. Similarly, sensation-seeking was significantly and positively correlated with locus of control and age, while locus of control was significantly and negatively correlated with self-esteem. As a result, any extreme correlation among predictor variables and the criterion variable was not detected.

4.2. Results of the Multiple Regression Analysis Executed to Total M-RIPS Scores

As the results of factor analyses revealed two dimensions of M-RIPS (low and high risk behaviors) it was planned to conduct three separate multiple regression analysis on the scores of Low M-RIPS, High M-RIPS and the total M-RIPS. Prior to conducting multiple regression analyses, normality, linearity, homoscedasticity, and multicollinearity assumptions were tested. Univariate and multivariate outlier testing were performed to detect extreme values on the data. Three univariate outliers among RSES scores, seven univariate outliers among the total scores of M-RIPS, two univariate outliers among the scores of low risk behaviors, and five univariate outliers among the scores of high risk behaviors were detected and excluded from the analysis ($-3.29 < Z_{.001} < 3.29$). Then, after the first run of the equation, five more outliers were detected and excluded from the analysis depend upon residual statistics. On the other hand, no multivariate outlier was observed on the data ($\chi^2_5 = 20.52$). However, it was observed

that scores of high risk behaviors (High M-RIPS) were not normally distributed. Although some alternatives like logarithmic transformation had been tried to make the scores of high risk behaviors normally distributed, successful solution was not reached and normality assumption was not met. As a result, it was decided to conduct a standard multiple regression analysis only on the total scores of M-RIPS.

A standard multiple regression analysis was performed to examine how well sensation-seeking, self-esteem, locus of control, age, and gender predicted the total M-RIPS scores of Turkish adolescents.

Results indicated that multiple regression coefficients (R) were significant for the equation model ($R = .634$, $R^2 = .402$, $F_{5, 838} = 112.517$, $p = .00$). In other words, criterion variable was significantly explained by the linear combination of the independent variables. The contributions of sensation-seeking, self-esteem, locus of control, gender, and age in explaining the total scores of M-RIPS were presented in Table 4.3.

Table 4.3.
Results of the Multiple Regression Analysis for Sensation-Seeking, Self-Esteem, Locus of Control, Gender, and Age

Predictor Variables	**B**	**SE**	β	**t**	**p**	**Partial Corr.**
Constant	-76.267	10.276	-	-7.422	.000	-
Sensation-Seeking	.877	.068	.357	12.956	.000	.346
Self-Esteem	.138	.105	.036	1.315	.189	.035
Locus of Control	.732	.138	.148	5.297	.000	.142
Gender	14.650	.996	.400	14.704	.000	.393
Age	3.680	.595	.168	6.182	.000	.165

Results of the multiple regression showed that combination of five variables explained 40% of the total variance ($R^2 = .402$). As seen in Table 4.3, being male caused 14.650 points increase in the total scores of M-RIPS ($t = 14.704$; $p = .00$). Similarly, increase in the age raised 3.680 points of the total scores of M-RIPS ($t = 6.182$; $p = .00$). Furthermore, change in the scores of self-esteem did not significantly contribute to the

total scores of M-RIPS (t_{SE} = 1.315; p = .189), while every one point increase in the scores of sensation-seeking and locus of control raised .357 and .148 points of the total scores of M-RIPS respectively (t_{SS} = 12.956; t_{LoC} = 5.297; p = .00). When the results have been evaluated in terms of standardized regression coefficients, gender, sensation-seeking, locus of control, and age were found to be the most predictive variables of the total scores of M-RIPS. Besides, it was observed that sensation-seeking predicted the total scores of M-RIPS approximately two and a half times more than locus of control, and approximately two times more than age. Similarly, gender predicted the total scores of M-RIPS approximately three times more than locus of control. On the other hand, the contribution of self-esteem to the variance explained by the regression model was low and not significant $(.036)^2$ = .0129.

CHAPTER V

DISCUSSION

In this chapter, conclusions of the study, implications, and recommendations for future studies are discussed comprehensively.

5.1. Conclusions

The main aim of the study was to investigate the contributions of sensation-seeking, self-esteem, locus of control, gender and age, in explaining risk-taking behaviors (RTBs) of Turkish adolescents. In other words, how well these variables predict risk-taking behaviors of Turkish adolescents were examined.

Results of the total scores of M-RIPS demonstrated that gender, sensation-seeking, age, and locus of control were the most predictive variables of risk-taking behaviors among Turkish adolescents. All these variables as a whole accounted for the 40% of the variance of risk-taking behaviors. Gender alone accounted for 16% of the total variance; therefore, gender appeared to be one of the most significant predictors of risk-taking behaviors among Turkish adolescents. On the other hand, self-esteem did not significantly contribute to Turkish adolescents' risk-taking behaviors. Unlike self-esteem, sensation-seeking and locus of control were quite significant variables in explaining risk-taking behaviors among Turkish adolescents. In other words, results demonstrated that older male sensation-seekers who had an external locus of control were more likely to involve in risk-taking behaviors.

These findings were consistent with the adolescent risk-taking research. For example, gender was found to be one of the important predictors of most of the adolescent risk-taking research (Bronson & Howard, 2002; Marquis, 1998; Spence, 1997; Huth-Bocks, 1996; Arnett, 1990). More specifically, in line with the existing literature, present study indicated that males were more likely to engage in risk-taking behaviors. In other words, being male is one of the main characteristics of an adolescent risk-taker. As Arnett (1992) argues in his theory of Broad and Narrow Socialization, cultural norms and limitations play an important role in individuals' expression of their personality characteristics such as sensation-seeking or risk-taking. Based on this view, cultural characteristics seem to play an important role in explaining the difference between males and females, as well as the differences in terms of personality characteristics and biological differences. Moreover, according to Kağıtçıbaşı (2000), due to economical and social structure of interdependent societies (e.g. Turkey), having a male child is more preferred and valuable than having a female child. This may be interpreted as being male is an indicator of having a broad chance in achieving autonomy and independency and therefore males' expression of personality characteristics such as sensation-seeking and risk-taking is culturally less limited.

As mentioned previously, in the present study, sensation-seeking was found to be another important predictor of adolescent risk-taking behaviors. Sensation-seeking alone accounted for approximately 13% of the variance of risk-taking behaviors among Turkish adolescents. In other words, high sensation-seekers were also high in risk-taking frequencies. This finding is supported by a variety of adolescent risk-taking research (Marquis, 1998; Todesco, 2004; Arnett, 1990; Rosenbloom, 2003; Jonah, 1997). For example, Marquis (1998), and Todesco (2004) found strong relationships between sensation-seeking and risk-taking behaviors among adolescents.

"Novelty" which is one of the main components of sensation-seeking (Arnett, 1992; Zuckerman, 1994) could be the possible explanation of this finding. It can be said that

adolescent sensation-seekers are in search of new experiences including risk-taking behaviors that might result in long-lasting consequences (Arnett, 1992). Similarly, as Arnett (1992) and Zuckerman (1994) argue, risk-taking behaviors partly include behaviors that cannot be culturally normative and physically healthy; therefore, adolescents high in sensation-seeking may also be more likely to involve in risk-taking behaviors.

Age was also found to be a significant predictor of adolescent risk-taking behaviors. Age alone accounted for approximately 3% of the variance of risk-taking behaviors among Turkish adolescents. In other words, as the age increases, risk-taking behaviors of adolescents also increase. Thus, the older adolescents were more likely to engage in risk-taking behaviors. Although the accounted variance in this study is relatively low, this finding is consisted with the results of most of the research. For example, DiClement, Hansen and Ponton (1996) suggested that most of the risk-taking behaviors increase in terms of frequency and intensity as the age of individuals in the adolescence period increases. Essau (2004) also found that age is one of the most significant predictors of adolescent risk-taking behaviors. Similarly, Greene et al. (2000) and Bell, Schoenrock and O'Neal (2000) regarded age as significantly related to adolescent risk-taking. The low accounted variance of age found in the present study might be related to the limited age range (15-19) of the sample. In other words, if the age range have been broadened, the differences between adolescent age groups in risk taking behaviors would have been more obvious.

Likewise, another low accounted but significant predictor of risk-taking behaviors given in this study was locus of control. Locus of control alone accounted for approximately 2% of the variance of risk-taking behaviors among Turkish adolescents in the present study. In other words, adolescents who had an external locus of control may be more likely to engage in risk-taking behaviors. Given that findings about locus of control in adolescent risk-taking research are contradictory, this finding presented in this study can

be discussed in several ways. It appears in the literature that the role of locus of control in adolescent risk-taking is not conclusive (Rolison & Scherman, 2003; Rolison, 2002). In their study, Rolison and Scherman (2003) and Rolison (2002) found that locus of control was not related to adolescent risk-taking behavior while Werner (1986) suggested that protective factors against risk-taking include an orientation to internal locus of control. Moreover, according to Jessor and Jessor's (1977) Problem Behavior Theory, one of the personality components against the risk-taking is internal locus of control. In other words, internal locus of control is a protective factor against the adolescent risk-taking behavior. The findings of the present study supported the Werner's (1986) and Jessor and Jessor's (1977) arguments. However, there is no previous study examining the role of locus of control among Turkish adolescents' risk-taking behavior. For this reason, the findings of the present study could only be discussed considering cultural characteristics of Turkish people. Turkish literature suggests that majority of Turkish people tend to have an external locus of control (Aydın, 1994; Dağ, 1991; Korkut, 1991; Lester, Castromayer, & İçli, 1991; Yeşilyaprak, 1988; as cited in Mocan-Aydın, 2000). This characteristic is taken to suggest that having an external locus of control might be one of the triggers off engaging in risk-taking behaviors in the sample of the present study. In other words, external attributions might easily lead one to involve in irresponsible behaviors including health-compromising/reckless behaviors, since people who tend to make external attributions about events are also tend to rely more on luck and other kind of superstitions, instead of the feeling of self-responsibility. However, due to the low accounted variance, this interpretation should be made with caution.

Finally, self-esteem was not found to be a significant predictor of adolescent risk-taking in the present study. In other words, it was found that self-esteem was not significantly related to adolescent risk-taking among Turkish adolescents. According to literature, the role of self-esteem in explaining adolescent risk-taking is contradictory (Connor et al., 2004). While several researchers suggested that low self-esteem was linked to various

adolescent risk behaviors such as smoking, drug use, and sexual activity (Modrcin-Talbott et al.,1998; Kaplan, 1975; Jang & Thornberry, 1998; as cited in Wild, Flisher, Bhana & Lombard, 2004; Wild, Flisher, Bhana and Lombard, 2004; Gordon & Caltabiano, 1996), several researchers have argued that after controlling some background variables (e.g. gender, family background), low self-esteem is not correlated with risk behaviors (Wild et al., 2004; DeSimone, Murray & Lester, 1994; Connor et al., 2004). One possible explanation of not finding a significant contribution of self-esteem to risk-taking behaviors of Turkish adolescents might be related to one of the limitations of the present study. In the present study, despite an effort to collect information about background characteristics of the sample, large number of missing data prevented the researcher to examine the variables that could mediate with self-esteem.

5.2. Implications and Recommendations for Practice and Research

Several practical implications can be made based on the findings of the present study. First, results of the study indicated that except self-esteem, other personality (sensation-seeking, locus of control) and demographic (age, and gender) variables contributed to explain risk-taking behaviors of Turkish adolescents. This result suggests that older adolescent male sensation-seekers who have external locus of control are more inclined to involve in risk-taking behaviors. In other words, individuals who have the demographic and personality characteristics mentioned above are the most at-risk group in terms of engaging in risk-taking behaviors. These findings are taken to suggest that counselors may be more cautious about the more "at-risk" group when working with adolescents. School counselors do have a critical role in assisting students who have "risk-taking prone" characteristics to reduce their risk involvement behaviors. Therefore, having knowledge about risk takers' characteristics provides new approaches for counselors when working with risk-takers.

Second, several researchers argue that risk-taking behaviors of adolescents can be discussed in two groups; one is negative the other one is positive risk-taking behaviors (Hansen & Breivik, 1998; Fischer & Smith, 2004). According to this view, while some of the risk-taking behaviors are developmentally appropriate, some other kind of risk-taking behaviors probably have negative consequences in adolescents' developmental process. For example, behaviors such as initiating a friendship, playing a sport that one is not good at, playing a dangerous sport like kayaking, skiing, and climbing can be regarded as positive kinds of risk-taking behaviors, while behaviors like smoking, driving when drunk, and hitchhiking are more likely to be considered negative risk-taking behaviors. It was found by these researchers that both types of risk-taking behaviors are positively correlated with sensation-seeking. Therefore, when working with "at-risk" adolescents, counselors may guide these adolescents to involve in positive kinds of risk-taking behaviors. Counselors can help adolescents satisfy their needs for getting attention by showing some "positive alternatives".

Third, the role of age, gender, and sensation-seeking in explaining adolescent risk-taking has been the topic of much risk-taking research both in Turkey and abroad (Bayar, 1999; Yılmaz, 2000; Kıran, 2003; Beyaz, 2004; Hansen & Breivik, 1998; Fischer & Smith, 2004; Turner & McClure, 2003). These studies highlight the role of age, gender, and sensation-seeking in risk-taking. The present study supported the findings of the previous research. However, there is no systematic and comprehensive prevention program implemented to reduce risk-taking behaviors of Turkish adolescents. The findings of the present study may contribute to design of such prevention programs.

Several recommendations for future research can also be drawn based on the findings of the present study. First of all, present study focused on only certain age group (15-19) of adolescents. For this reason, future research should be directed at addressing the methodological limitations of this study. There is a need for an extension and replication

study with late adolescents to determine how risk-taking behaviors may vary depending on the developmental age of the adolescents.

Secondly, relatively little research examined the risk-taking behaviors of Turkish adolescents. For this reason, more comprehensive studies are needed to make conclusive discussions in relation to the different individual and background characteristics of Turkish risk-takers. For example, the role of risk perception in explaining risk-taking behaviors of adolescents can be a crucial future research topic. In the same vein, benefit perception and the role of benefit perception in understanding risk taking behaviors of adolescents can be examined.

Thirdly, the role of personality as a whole can be examined in relation to adolescent risk-taking. In other words, a more comprehensive perspective may be taken with regard to the personality characteristics of Turkish adolescent risk-takers, instead of examining several basic constructs of personality. Based on the findings of the present study, since the examined variables accounted for less than half (40%) of the total variance in explaining risk-taking behaviors, it can be said that some other personality characteristics may also contribute to explain adolescent risk-taking, Therefore, contributions of some other personality variables can be examined in future studies. In addition, Jessor's Problem Behavior Theory (1977) suggests that environmental factors have a crucial role in risk-taking. Therefore, along with age and gender, wide variety of variables such as family structure, social network and peer relations, religious belief/participation, socioeconomic status may be examined in relation to Turkish adolescent risk-taking.

Lastly, validation study of risk-taking measure used in the present research can be replicated with older adolescent samples. Similarly, new scales that measure risk perception and benefit perceptions of risk can be developed.

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APPENDICES

APPENDIX A

KİŞİSEL BİLGİ FORMU

1. **Yaşınız: ……**

2. **Cinsiyetiniz:**

   ( ) Kız ( ) Erkek

3. **Sınıfınız:**

   ( ) Lise 1
   ( ) Lise 2
   ( ) Lise 3

4. **En Son Dönem Not Ortalamanız: ……..**

5. **Anne ve babanız:**

   ( ) Sağ
   ( ) Yalnızca anne sağ
   ( ) Yalnızca baba sağ
   ( ) İkisi de sağ değil

6. **Anne ve babanızın medeni hali:**

   ( ) Evli ve birlikte yaşıyor
   ( ) Evli ama birlikte yaşamıyor
   ( ) Boşanmış

7. Annenizin eğitim durumu nedir?

( ) Okur-yazar değil
( ) Okur-yazar
( ) İlkokul mezunu
( ) Ortaokul mezunu
( ) Lise mezunu
( ) Üniversite mezunu
( ) Lisansüstü eğitim mezunu

8. Babanızın eğitim durumu nedir?

( ) Okur-yazar değil
( ) Okur-yazar
( ) İlkokul mezunu
( ) Ortaokul mezunu
( ) Lise mezunu
( ) Üniversite mezunu
( ) Lisansüstü eğitim mezunu

9. Annenizin çalışma durumu nedir?

( ) Çalışıyor ( ) Çalışmıyor ( ) Emekli

10. Babanızın çalışma durumu nedir?

( ) Çalışıyor ( ) Çalışmıyor ( ) Emekli

11. Kendinizi hangi sosyoekonomik düzeyde değerlendirebilirsiniz?

( ) Alt ( ) Orta ( ) Üst

12. Sizce din ne derecede önemlidir?

( ) Az ( ) Orta ( ) Çok

APPENDIX B

PARSONS RİSK İÇEREN DAVRANIŞLARI GÖSTERME SIKLIĞI ÖLÇEĞİ

Bu ölçek, risk alma davranışı içerisinde ne kadar sıklıkta bulunduğunuzu ölçmek amacıyla hazırlanmıştır. Aşağıda sıralanan her bir davranışı **"son üç ay boyunca ne sıklıkta gösterdiğinizi"** ilgili numarayı daire içine alarak belirtiniz.

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		Hiçbir zaman (0)		**Nadiren (Yılda 2-3 kez)**		**Bazen (Ayda 2-3 kez)**		**Sık sık (Haftada 2-3 kez)**		**Her zaman (Her gün)**
1	Cinsel ilişkiye girme	0	1	2	3	4	5	6	7	8
2	**İçki içme**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
3	Sarhoş olma	0	1	2	3	4	5	6	7	8
4	**Aşırı yeme içme/kusma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
5	Hız yapma (otomobil, bisiklet, motosiklet)	0	1	2	3	4	5	6	7	8
6	**Dükkanlardan eşya çalma/aşırma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
7	Araba kullanma	0	1	2	3	4	5	6	7	8
8	**Sigara içme**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
9	Gece ıssız yerlerde yürüme/dolaşma	0	1	2	3	4	5	6	7	8
10	**Alkollü sürücüyle yolculuk etme**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
11	Reçete ile satılan ilaçları reçeteli olarak kullanma	0	1	2	3	4	5	6	7	8
12	**Motosiklet kullanma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
13	Marihuana içme	0	1	2	3	4	5	6	7	8
14	**Prezervatifsiz cinsel ilişkide bulunma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
15	Alkollü araba kullanma	0	1	2	3	4	5	6	7	8
16	**Kokain kullanma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**

		Hiçbir zaman (0)		Nadiren (Yılda 2-3 kez)		Bazen (Ayda 2-3 kez)		Sık sık (Haftada 2-3 kez)		Her zaman (Her gün)
17	Emniyet kemeri takmadan araba kullanma veya yolculuk etme	0	1	2	3	4	5	6	7	8
18	**Reçete ile satılan ilaçları doktor onayı olmaksızın veya aşırı dozda kullanma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
19	Esrar içme	0	1	2	3	4	5	6	7	8
20	**Bisikletle yarış yapma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
21	Kısa sürede kilo verdiren diyet yapma	0	1	2	3	4	5	6	7	8
22	**Evden kaçma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
23	Sınavda kopya çekme	0	1	2	3	4	5	6	7	8
24	**Okulu asma/devamsızlık yapma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
25	Araba yarışı yapma	0	1	2	3	4	5	6	7	8
26	**Uhu/bali gibi maddeler koklama**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
27	Okul ödevlerini yapmama	0	1	2	3	4	5	6	7	8
28	**Kesici, delici alet ve silah taşıma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
29	Tanımadığı birinin arabasına binme	0	1	2	3	4	5	6	7	8
30	**Otostop yapma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
31	Kumar ve şans oyunları oynama	0	1	2	3	4	5	6	7	8
32	**Ehliyetsiz araba kullanma**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**

APPENDIX C

ARNETT HEYECAN ARAMA ÖLÇEĞİ

Bu ölçek, bireylerin kişilik özelliklerinden bir tanesi olan "heyecan arama" yı ölçmeyi amaçlamaktadır. Sizden istenen, aşağıdaki ifadelerin her birinin sizin için ne kadar doğru ya da ne kadar yanlış olduğunu ilgili seçeneklerden birini işaretleyerek belirtmenizdir.

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		Doğru	Biraz Doğru	Biraz Yanlış	Yanlış
1.	Yabancı ülkeden biriyle evlenmek ilgimi çekerdi.	( )	( )	( )	( )
2.	Su çok soğuk olduğunda, hava sıcak olsa bile, yüzmeyi tercih etmem.	( )	( )	( )	( )
3.	Uzun bir kuyrukta beklemek zorunda olduğumda, genellikle sabırlıyımdır.	( )	( )	( )	( )
4.	Tatile çıkmadan önce plan yapmak yerine, gidilen yerde aklıma eseni yapmanın en doğrusu olduğunu düşünüyorum.	( )	( )	( )	( )
5.	Korku ve gerilim filmlerinden uzak dururum.	( )	( )	( )	( )
6.	Bir grup önünde konuşmanın ya da gösteri yapmanın çok heyecan verici ve eğlenceli olduğunu düşünüyorum.	( )	( )	( )	( )
7.	Lunaparka gidecek olsam dönme dolap ya da aşırı hızlı araçlara mutlaka binerdim.	( )	( )	( )	( )
8.	Uzak ve bilinmeyen yerlere seyahat etmeyi isterdim.	( )	( )	( )	( )
9.	Çok param olsa bile kumar oynamayı istemezdim.	( )	( )	( )	( )
10.	Bilinmeyen bir yeri keşfeden ilk kişi olmayı çok isterdim.	( )	( )	( )	( )
11.	İçinde çok sayıda patlama ve araba kovalama sahneleri olan filmlerden hoşlanırım.	( )	( )	( )	( )

		Doğru	Biraz Doğru	Biraz Yanlış	Yanlış
12.	Genellikle zaman baskısı altında daha iyi çalışırım.	( )	( )	( )	( )
13.	Çoğu zaman, okurken ya da bir iş yaparken radyo veya televizyonun açık olmasını isterim.	( )	( )	( )	( )
14.	Bir trafik kazasının oluşunu görmek isterdim.	( )	( )	( )	( )
15.	Lokantaya gittiğimde bilmediğim bir şeyi denemek yerine bilinen yemekleri tercih ederim.	( )	( )	( )	( )
16.	Yüksek bir uçurumun kenarından aşağıya bakma duygusu hoşuma gider.	( )	( )	( )	( )
17.	Eğer bir gezegene ya da aya bedava gitmek mümkün olsaydı, başvuru sırasındaki ilk kişi ben olurdum.	( )	( )	( )	( )
18.	Bir savaşta muharebeye (çatışmaya) katılmanın ne kadar heyecan verici bir şey olabileceğini tahmin edebiliyorum.	( )	( )	( )	( )
19.	Yüksek sesle müzik dinlemekten hoşlanırım.	( )	( )	( )	( )

APPENDIX D

ROSENBERG BENLİK SAYGISI ÖLÇEĞİ

Aşağıdaki maddeler, kendiniz hakkında ne düşünüp genel olarak nasıl hissettiğinize ilişkin olarak hazırlanmıştır. Lütfen her bir maddeyi dikkatlice okuyun ve kendiniz hakkında nasıl hissettiğinizi maddelerin karşısındaki a, b, c ve d'den uygun olan birini işaretleyerek belirtin.

Onur ÖZMEN
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		Hiç Katılmıyorum	Katılmıyorum	Katılıyorum	Tamamen Katılıyorum
1.	Kendimi en az diğer insanlar kadar değerli buluyorum.	(a)	(b)	(c)	(d)
2.	Bazı olumlu özelliklerim olduğunu düşünüyorum.	(a)	(b)	(c)	(d)
3.	Genelde kendimi başarısız bir kişi olarak görme eğilimindeyim.	(a)	(b)	(c)	(d)
4.	Ben de diğer insanların birçoğunun yapabildiği kadar birşeyler yapabilirim.	(a)	(b)	(c)	(d)
5.	Kendimde gurur duyacak fazla birşey bulamıyorum.	(a)	(b)	(c)	(d)
6.	Kendime karşı olumlu bir tutum içindeyim.	(a)	(b)	(c)	(d)
7.	Genel olarak kendimden memnunum.	(a)	(b)	(c)	(d)
8.	Kendime karşı daha fazla saygı duyabilmeyi isterdim.	(a)	(b)	(c)	(d)
9.	Bazen kesinlikle bir işe yaramadığımı düşünüyorum.	(a)	(b)	(c)	(d)
10.	Bazen kendimin hiç de yeterli bir insan olmadığını düşünüyorum.	(a)	(b)	(c)	(d)

APPENDIX E

ROTTER DENETİM ODAĞI ÖLÇEĞİ

Bu ölçek, bazı durumlara ilişkin kişisel inançları ölçmeyi amaçlamaktadır. İki seçenekten oluşan her bir madde için yalnızca sizin daha doğru olduğuna inandığınız seçeneği işaretleyiniz.

Onur ÖZMEN
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1. a) Ana-babaları çok fazla cezalandırdıkları için çocuklar çok problemli oluyor.
   b) Günümüz çocuklarının çoğunun problemi, ana-babaları tarafından aşırı serbest bırakılmalarıdır.

2. a) İnsanların yaşamındaki mutsuzlukların çoğu biraz da şanssızlıklarına bağlıdır.
   b) İnsanların talihsizlikleri yaptıkları hataların sonucudur.

3. a) Savaşların başlıca nedenlerinden biri, halkın siyasetle yeterince ilgilenmemesidir.
   b) İnsanlar savaşı önlemek için ne kadar çaba harcarsa harcasın her zaman savaş olacaktır.

4. a) İnsanlar bu dünyada hak ettikleri saygıyı er geç görürler.
   b) İnsan ne kadar çabalarsa çabalasın ne yazık ki değeri genellikle anlaşılmaz.

5. a) Öğretmenlerin öğrencilere haksızlık yaptığı fikri saçmadır.
   b) Öğrencilerin çoğu, notların tesadüfi olaylardan etkilendiğini fark etmez.

6. a) Koşullar uygun değilse insan başarılı bir lider olamaz.
   b) Lider olamayan yetenekli insanlar, fırsatları değerlendirememiş kişilerdir.

7. a) Ne kadar uğraşsanız da bazı insanlar sizden hoşlanmazlar.
   b) Kendilerini başkalarına sevdiremeyen kişiler, başkalarıyla nasıl geçinileceğini bilmeyenlerdir.

8. a) İnsanın kişiliğinin belirlenmesinde en önemli rolü kalıtım oynar.
   b) İnsanın nasıl biri olacağını kendi hayat tecrübeleri belirler.

9. a) Bir şey olacaksa eninde sonunda olduğuna sık sık tanık olmuşumdur.
   b) Ne yapacağıma kesin karar vermek kadere güvenmekten daima daha iyidir.

10. a) İyi hazırlanmış bir öğrenci için, adil olmayan bir sınav hemen hemen söz konusu değildir.
    b) Sınav soruları derste işlenenle çoğu kez o kadar ilişkisiz oluyor ki çalışmanın bir anlamı kalmıyor.

11. a) Başarılı olmak çok çalışmaya bağlıdır; şansın bunda ya hiç payı yoktur ya da çok küçük payı vardır.
    b) İyi bir iş bulmak temelde doğru zamanda doğru yerde bulunmaya bağlıdır.

12. a) Hükümetin kararlarında sade vatandaş da etkili olabilir.

    b) Bu dünya güç sahibi birkaç kişi tarafından yönetilmektedir ve sade vatandaşın bu konuda yapabileceği fazla bir şey yoktur.

13. a) Yaptığım planları yürütebileceğimden hemen hemen eminimdir.

    b) Çok uzun vadeli planlar yapmak her zaman akıllıca olmayabilir, çünkü birçok şey zaten iyi ya da kötü şansa bağlıdır.

14. a) Hiçbir yönü iyi olmayan insanlar vardır.

    b) Herkesin iyi bir tarafı vardır.

15. a) Benim açımdan istediğimi elde etmenin talihle bir ilgisi yoktur.

    b) Çoğu durumda, yazı-tura atarak da isabetli kararlar verebiliriz.

16. a) Kimin patron olacağı genellikle, doğru yerde ilk önce bulunma şansına kimin sahip olduğuna bağlıdır.
    b) İnsanlara doğru şeyi yaptırmak bir yetenek işidir; şansın bunda payı ya hiç yoktur ya da çok az payı vardır.

17. a) Dünya meseleleri söz konusu olduğunda çoğumuz, anlayamadığımız ve kontrol edemediğimiz güçlerin kurbanıyım.
    b) İnsanlar, siyasal ve sosyal konularda aktif rol alarak dünya olaylarını kontrol edebilirler.

18. a) Birçok insan rastlantıların yaşamlarını ne derece etkilediğinin farkında değildir.
    b) Aslında "şans" diye bir şey yoktur.

19. a) İnsan, hatalarını kabul edebilmelidir.

    b) Genelde en iyisi insanın hatalarını örtbas etmesidir.

20. a) Bir insanın sizden gerçekten hoşlanıp hoşlanmadığını bilmek zordur.

    b) Kaç arkadaşınızın olduğu, ne kadar iyi olduğunuza bağlıdır.

21. a) Uzun vadede yaşamımızdaki kötü şeyler, iyi şeylerle dengelenir.

    b) Çoğu talihsizlikler yetenek eksikliğinin, ihmalin, tembelliğin ya da her üçünün birden sonucudur.

22. a) Yeterli çabayla siyasal yolsuzlukları ortada kaldırabiliriz.

    b) Siyasetçilerin kapalı kapılar ardında yaptıkları üzerinde halkın fazla bir kontrolü yoktur.

23. a) Öğretmenlerin verdikleri notları nasıl belirlediklerini bazen anlamıyorum.

    b) Aldığım notlarla çalışma derecem arasında doğrudan bir bağlantı vardır.

24. a) İyi bir lider, ne yapacaklarına halkın bizzat karar vermezini bekler.

    b) İyi bir lider herkesin görevinin ne olduğunu bizzat belirler.

25. a) Çoğu kez başıma gelenler üzerinde çok az etkiye sahip olduğumu hissederim.

    b) Şans ya da talihin yaşamımda önemli bir rol oynadığına inanmam.

26. a) İnsanlar arkadaşça olmaya çalışmadıkları için yalnızdırlar.

    b) İnsanları memnun etmek için çok fazla çabalamanın yararı yoktur; sizden hoşlanırsa hoşlanırlar.

27. a) Okullarda atletizme gereğinden fazla önem veriliyor.

    b) Takım sporları kişiliğin oluşumu için mükemmel bir yoldur.

28. a) Başıma ne gelmişse kendi yaptıklarımdandır.

    b) Yaşamımın alacağı yön üzerinde bazen yeterince kontrolümün olmadığını hissediyorum.

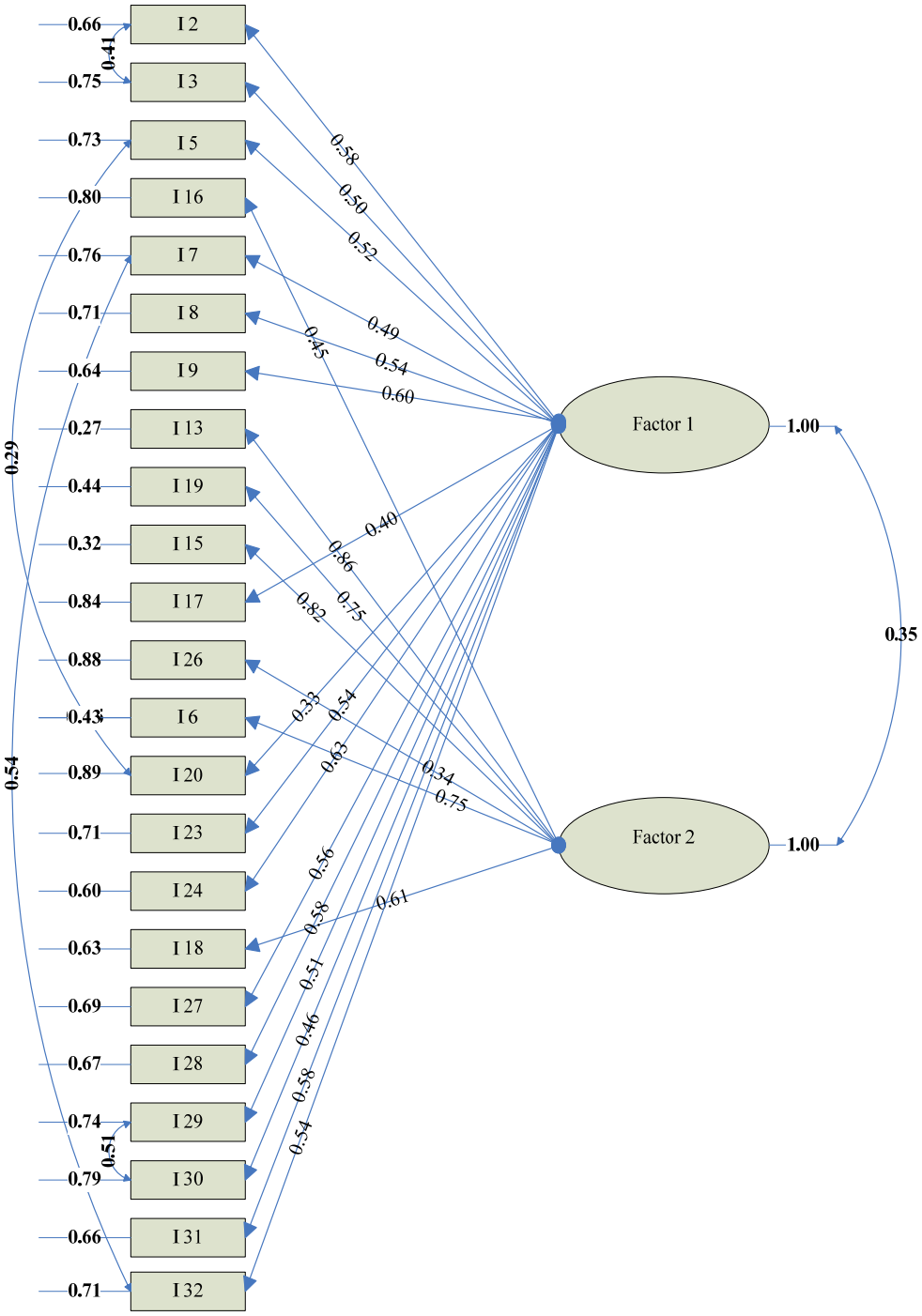
29. a) Siyasetçilerin neden öyle davrandıklarını çoğu kez anlamıyorum.

    b) Yerel ve ulusal düzeydeki kötü iradeden uzun vadede halk sorumludur.

APPENDIX F

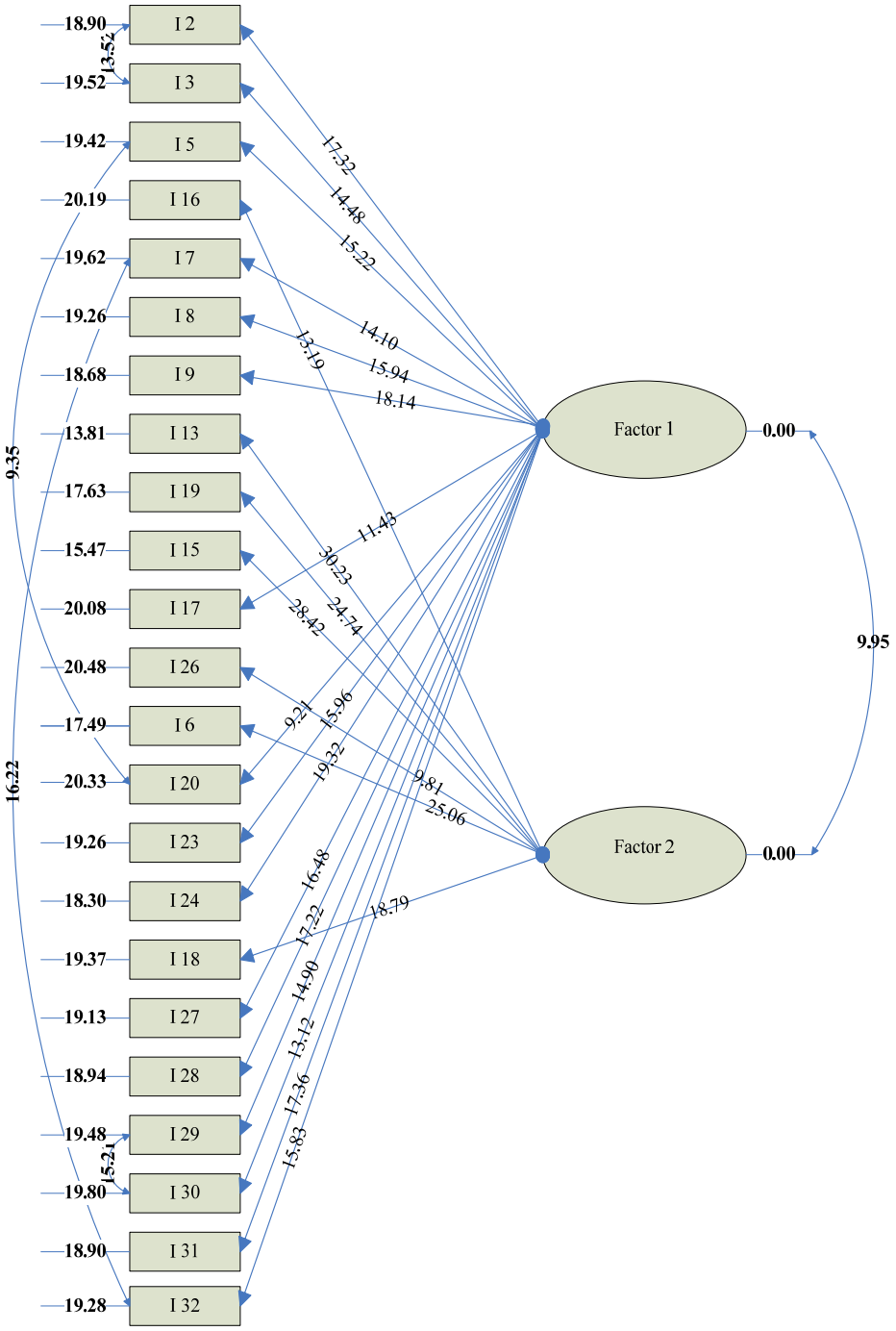
LISREL ESTIMATES OF PARAMETERS IN THE MEASUREMENT MODEL FOR MODIFIED RISK INVOLVEMENT AND PERCEPTION SCALE (M-RIPS) WITH COEFFICIENTS TO STANDARDIZED VALUES AND *T*-VALUES

F.1. Lisrel Estimates of Parameters in the Measurement Model for M-RIPS with Coefficients to Standardized Values



Chi-Square=1384.40, df=225, P-value=0.00000, RMSEA=0.077

F.2. Lisrel Estimates of Parameters in the Measurement Model for M-RIPS with Coefficients to *T* –Values



Chi-Square=1384.40, df=225, P-value=0.00000, RMSEA=0.077