RISK PERCEPTION AND DRIVING PERFORMANCE COMPARISONS BETWEEN YOUNG MALE NON-PROFESSIONAL DRIVERS AND TAXI DRIVERS

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

UĞUR UYGAR ERKUŞ

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
OCCUPATIONAL HEALTH AND SAFETY GRADUATE PROGRAM

FEBRUARY 2017

Approval of the thesis:

RISK PERCEPTION AND DRIVING PERFORMANCE COMPARISONS BETWEEN YOUNG MALE NON-PROFESSIONAL DRIVERS AND TAXI DRIVERS

submitted by **UĞUR UYGAR ERKUŞ** in partial fulfillment of the requirements for the degree of **Master of Science in Occupation Health and Safety Graduate Program, Middle East Technical University** by,

Prof. Dr. Gülbin Dural Ünver ________________
Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. Mahmut Parlaktuna ________________
Head of Department, **Occupational Health and Safety**

Assoc. Prof. Dr. Türker Özkan ________________
Supervisor, **Department of Psychology, METU**

Examining Committee Members:

Prof. Dr. İrem Dikmen Toker ________________
Department of Civil Engineering, METU

Assoc. Prof. Dr. Türker Özkan ________________
Department of Psychology, METU

Assoc. Prof. Dr. Timo Lajunen ________________
Department of Psychology, METU

Assist. Prof. Dr. Bahar Öz. ________________
Department of Psychology, METU

Assist. Prof. Dr. Bilge Yalçındağ ________________
Department of Psychology, Nuh Naci Yazgan University

Date: ________________

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: Uğur Uygar Erkuş

Signature :

ABSTRACT

RISK PERCEPTION AND DRIVING PERFORMANCE COMPARISONS BETWEEN YOUNG MALE NON-PROFESSIONAL DRIVERS AND TAXI DRIVERS

Erkuş, Uğur Uygar
M.S., Occupational Health and Safety Graduate Program
Supervisor: Assoc. Prof. Dr. Türker Özkan

February 2017, 140 pages

The aim of the current study is represented in three main aspects. Firstly, it is aimed to check the fit of "the risk perception model" developed by Deery (1999) among young male non-professional and taxi driver samples. Secondly, it is aimed to analyze the effect of driving as a profession on risk perception and risk-taking behaviors of drivers. Thirdly, it is aimed to facilitate driving simulation in order to measure driver behaviors by comparing the results with self-reported driver behaviors. 40 young male taxi drivers and 40 young male non-professional drivers, aged between 18-25 years old, participated in the study. In this purpose, Vision Test regarding Traffic (TIGT); Turkish versions of Risk Perception Inventory (Rosenbloom, Shahar, Elharar, & Danino, 2008), Arnett's Inventory of Sensation Seeking (Arnett, 1994), Driver Skill Inventory (Lajunen & Summala, 1995) and Driver Behavior Questionnaire with positive driver behaviors (Özkan, & Lajunen, 2005) were used to measure participants' hazard perceptions, risk perceptions, self-assessed driving skills, risk acceptance levels and self-reported driving behaviors, respectively. Additionally, the driving simulator was included in the study to measure participants' simulated driving behaviors. Results revealed that young male taxi drivers and non-professional drivers significantly differed in novel sensations and average speeds in the driving simulator. Moreover, hierarchical regression analyses revealed that both self-reported and simulated driving behaviors were predicted by participants' risk perceptions, self-assessed driving skills and sensation seeking attitudes. Finally, self-reported driving behaviors were found to predict both speeding behaviors and driver mistakes of both driver groups.

Keywords: young male drivers, taxi drivers, risk perception, driving simulator, driver behaviors

ÖZ

GENÇ ERKEK ŞAHSİ ARAÇ SÜRÜCÜLERİ İLE TAKSİ SÜRÜCÜLERİ ARASINDA RİSK ALGISI VE SÜRÜCÜLÜK PERFORMANSI KARŞILAŞTIRMALARI

Erkuş, Uğur Uygar
Yüksek Lisans, İş Sağlığı ve Güvenliği Yüksek Lisans Programı
Tez Yöneticisi: Doç Dr. Türker Özkan

Şubat 2017, 140 sayfa

Bu çalışmanın amacı üç ana başlık altında sunulmaktadır. İlk olarak, Deery (1999) tarafından geliştirilen "risk algısı modeli"nin genç erkek şahsi araç sürücüleri ile taxi sürücüleri örneklemlerinde uygunluğunun kontrol edilmesi amaçlanmıştır. İkinci olarak, sürücülüğü meslek olarak yapmanın sürücülerin risk algısı ve risk alma davranışları üzerindeki etkisinin incelenmesi amaçlanmıştır. Üçüncü olarak, beyana dayalı sürücü davranışları sonuçlarıyla karşılaştırma yaparak, sürücülük davranışlarının ölçümünde sürüş simülasyonunun kullanılması amaçlanmıştır. 18-25 yaşları arasında, 40 genç erkek taksi sürcüsü ve 40 genç erkek şahsi araç sürücüsü çalışmaya katılmıştır. Bu amaçla, Trafiğe İlişkin Görüş Testi (TIGT); Risk Algısı Envanteri'nin (Rosenbloom, Shahar, Elharar, & Danino, 2008), Arnett'in Heyecan Arama Envanteri'nin (Arnett, 1994), Sürücü Beceri Envanteri'nin (Lajunen & Summala, 1995), ve Sürücü Davranışları Anketi'nin olumlu sürücü davranışlarını içeren halinin (Özkan, & Lajunen, 2005) Türkçe versiyonları, sırasıyla, katılımcıların tehlike algılarını, risk algılarını, risk kabullenme seviyelerini, kendilerine ait sürücülük becerisi değerlendirmelerini ve beyana dayalı sürücülük davranışlarını ölçmek için kullanılmıştır. Ayrıca, katılımcıların simüle edilen sürücülük davranışlarını ölçmek için sürüş simülasyonu dahil edilmiştir. Sonuçlar, genç erkek taksi sürücüleri ile şahsi araç sürücülerinin özgün heyecanlar ve sürüş simülasyonundaki ortalama hızlarda anlamlı farklar gösterdiğini ortaya koymuştur. Buna ek olarak, hiyerarşik regresyon analizleri hem beyana dayalı hem de simüle edilmiş sürücülük davranışlarının katılımcıların risk algıları, kendilerine ait sürücülük becerisi değerlendirmeleri ve heyecan arama tutumları tarafından yordandığını ortaya koymuştur. Son olarak, beyana dayalı sürücülük davranışlarının her iki sürücü grubunun hem hız yapma davranışlarını hem de sürücü davranışlarını yordadığı bulunmuştur.

Anahtar kelimeler: genç erkek sürücüler, taksi sürücüleri, risk algısı, sürüş simülasyonu, sürücü davranışları

To my family,

ACKNOWLEDGMENTS

I would like to express my deepest gratitude to everyone who had taken part in my life and helped me find my way and go through it.

I am so grateful for having such a wise and gracious thesis advisor. I would like to express my sincere appreciation to Assoc. Prof. Dr. Türker Özkan. It is an honor to work with him and to learn from him. He did not only continuously feed me with knowledge but also inspired and encouraged me since the beginning.

Besides my advisor, I would like to thank Prof. Dr. İrem Dikmen Toker, Assoc. Prof. Dr. Timo Lajunen, Assist. Prof. Dr. Bahar Öz and Assist. Prof. Dr. Bilge Yalçındağ for being in my thesis committee and their invaluable feedbacks and encouraging comments in this duration.

Furthermore, I am so lucky to have many supportive and inspirational friends around me. I would like to thank my teammates, Pınar Bıçaksız, Yeşim Üzümcüoğlu Zihni, İbrahim Öztürk, Burcu Tekeş, Özgün Özkan, Derya Azık and Özlem Ersan, individually, for their continuous support and guidance in every manner since we know each other.

Also, I would like to thank my fellow travelers in this world. Members of my band, DoğuBatı; members of my beloved theater groups, ODTÜ Oyuncuları and Boş Sahne; members of my Tai Chi class and particularly our master, Harun M. Soydan; my old and new precious friends along this way, Bircan, Sezen, Ali, Cevat, Sonat, Serkan, Cemil, Özgür, Enis and Meryem, you are the ones who have always stood by me and eased my soul whenever I needed.

Finally, I would like to express my deepest gratitude to my family. Nimet and Alim Erkuş are the best parents and the best teachers that I would possibly have. Without them, I would have no chance to know all those great people. I love you all.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

CHAPTER I

INTRODUCTION

1.1 Traffic Safety in the World

The World Health Organization (WHO) reported that road traffic injuries are the leading cause of death in the world as more than 1.2 million people lose their lives each year on the roads (WHO, 2015a). About 60% of all road traffic deaths occur among young people aged between 15-44 years old while 77% of global road traffic deaths are among men (WHO, 2013).

The earlier (WHO, 2009a) and the current results (WHO, 2015a) reveal that fatality rates in low-income and middle-income countries are significantly higher than in high-income countries. The study conducted by WHO (2009b) presents the similar findings for fatality rates in European region that the fatality rate in low-income and middle-income countries (18.7 per 100 000 population) is twice as high as high-income countries (7.9 per 100 000 population). Furthermore, the largest number of road traffic deaths occurs in the eastern part of the region with a higher risk of dying among men (WHO, 2015b). Hence, special attention has to be paid for decreasing road traffic accidents and improving road traffic safety elements in countries like Turkey.

1.2 Traffic Safety in Turkey

In 2014, 3524 people lost their lives due to road traffic accidents and around 285000 people had road traffic injuries in Turkey (OECD, 2016). In 2015, 7530 people died on roads in Turkey while drivers and passengers constitute around 41% and 35% of these fatalities, respectively. The analysis also revealed that male drivers were involved in 76.4% of the road traffic deaths and 69.8% of the road traffic injuries in 2015.

In 2016, more than 15000 Turkish drivers were detected to give causes for traffic accidents (with fatalities and injuries) since their speeding levels did not comply with the requirements of the road, weather and traffic conditions (Trafik İstatistik Bülteni, 2016).

Hence, abovementioned statistics reveals that both young male drivers and speeding behavior of drivers constitute two critical problems in Turkish roads to be investigated together.

1.3 Emphasis on Young Male Drivers

In various studies, comparisons between the group of male drivers and female drivers have been conducted, as well as comparisons between young male drivers and older male drivers.

Harrington and Bride (1970) showed that male drivers have higher rates of speeding than female drivers. Groeger and Brown (1989) revealed that male drivers exhibit more risky driving behavior than female drivers. Moreover, Rhodes and Pivik (2011) reported that male drivers have lower risk perception levels than female drivers.

According to Matthews and Moran (1986), there is a significant dissociation between perceived and actual abilities of young male drivers when compared to older male drivers. Jonah (1986) stated that young male drivers are likely to perform higher traffic offenses since they consider themselves immune from serious consequences. Furthermore, Borowsky, Shinar, and Oron-Gilad (2010) found that young-inexperienced drivers are less sensitive to potential hazards in traffic than young experienced and older drivers.

As it is understood from abovementioned studies, young male drivers constitute a high-risk group not only due to their “risky” driving styles and “misevaluated” driving skills but also due to their lack in hazard anticipation and low-risk perception levels.

1.4 Occupational Health and Safety on Turkish Roads

The extent of occupational health and safety can be considered in the boundaries of building sites and factories that are generally limited to engineering applications. Moreover, road safety measures can be considered as lying outside the scope of occupational health and safety. Nevertheless, when these two inter-related subjects are investigated together, four main factors can be identified causing accidents on roads: human factors; road and traffic factors; vehicle-equipment factors and geographical and climatic factors (Başayar, 2014).

In road transport, five distinguishable risks can be listed in regard to occupational health and safety: physical risks, psychosocial risks, ergonomics, organizational factors and health (Başayar, 2014). To clarify, while physical risks contain factors such as vibration, noise, and exposure to heat; ergonomics contains factors such as sitting constantly and heavy load carrying. However, when these risks are investigated closely, one can realize that these risks are considered to be related to external factors rather than human-related factors. Although automation grows faster and the need for human power diminishes in many workplaces, the human factor in traffic remains significant compared to other occupations. As Şişman, Sesli and Karaca (2010) argued, in spite of the fact that 90% of road traffic accidents are caused by the human factor; there had been no studies performed on this issue.

Therefore, in order to obtain better perspectives and results about driving as occupation, occupational health and safety measures and road safety measure should be taken into account together. Use of traffic psychology and behavioral sciences as part of occupational health and safety, researches and regulations come into existence as a strong need to prevent road traffic accidents in Turkey.

1.5 Taxi Drivers and Non-Professional Male Drivers

According to Öz, Özkan and Lajunen (2010), professional drivers, including taxi drivers, form an important risk group in traffic in the world, as well as in Turkey. Furthermore, Johnson, Sorlie, and Backlund (1999) theorized that professional drivers possess the particular risk of motor vehicle crashes and crash-related injuries since they are highly exposed to hazards in traffic. Moreover, Dalziel and Job (1997) argued that taxi drivers have a special role as part of public transportation due to their high level of exposure and experience on roads. As abovementioned studies reveal, driving behavior of professional drivers may either save lives of many people or cause a serious amount of injuries and deaths.

Although the size and mechanical properties of taxis and normal private cars are not different, taxi drivers represent quite different behavioral characteristics from non-professional drivers (Hu, Liu, Wang, Jiang & Chen, 2014; Wu, Yan & Radwan, 2016). The study conducted by Borowsky, Oron-Gilad and Parmet (2010) showed that taxi drivers, due to their high levels of experience in traffic, are more aware of potential hazards than those young-inexperienced drivers. However, the findings also reveal that taxi drivers represent high levels of risk-taking behavior in traffic (Peltzer & Renner, 2003) and those with high-risk personalities are likely to drive in excessive speeds and change lanes carelessly (Burns & Wilde, 1995). In addition, Rosebloom and Shahar (2007) found that male taxi drivers in Israel are prone to perform violations in traffic than non-professional drivers since they do not consider traffic regulations as just as non-professional drivers do. Hence, taxi drivers may consciously perform violations and risk-taking behaviors due to either the pressure of law or the long exposure time in traffic or both.

It is a known fact that taxi drivers have a tendency to rush picking up waiting passengers and to take them to their destinations. Lam (2004) stated that taxi drivers increase the risk of crashes due to speeding and risky driving in such circumstances. On the other hand, as the study conducted by Shams, Shojaeizadeh, Majdzadeh, Rashidian and Montazeri (2011) in Tehran revealed, although the majority of taxi drivers consider their own driving much better than the others, they denied that they have risky driving behaviors in traffic.

In order to compare groups of young male taxi drivers and non-professional male drivers, a model, not only being applicable to different driver groups with different driving motivations but also including possible components underlying driving behaviors in response to potential hazards in traffic, is needed. As understood from abovementioned studies, various explanations can be offered by investigating different aspects of driving behaviors and road traffic accidents. Hence, one can summarize that the very beginning of all different aspects of traffic safety studies is actually the eye of the driver.

1.6 Risk Perception Model

According to the model proposed by Deery (1999), there are several elements that may affect drivers' behaviors in response to potential hazards in traffic. In this purpose, young novice drivers were the focus of the research, since they are overrepresented in road accidents and constitute a particular group in traffic. Deery (1999) did not aim to offer a complete account of processes, but he considered hazard and risk perception as basic skills that young drivers need to improve and included concepts, such as self-assessed driving skill and risk acceptance, to investigate cognitive and perceptual processes before young drivers step into action in traffic.

As shown in Figure 1, there are five main components explaining the processes under the name of "Risk Perception Model". One shall realize that although Deery (1999) included "Driving Skill" separately in the model, in the present study it is going to be combined with "Self-assessed of Skill" component because it is closely related with driving style and there may be an interaction between them (Deery, 1999).

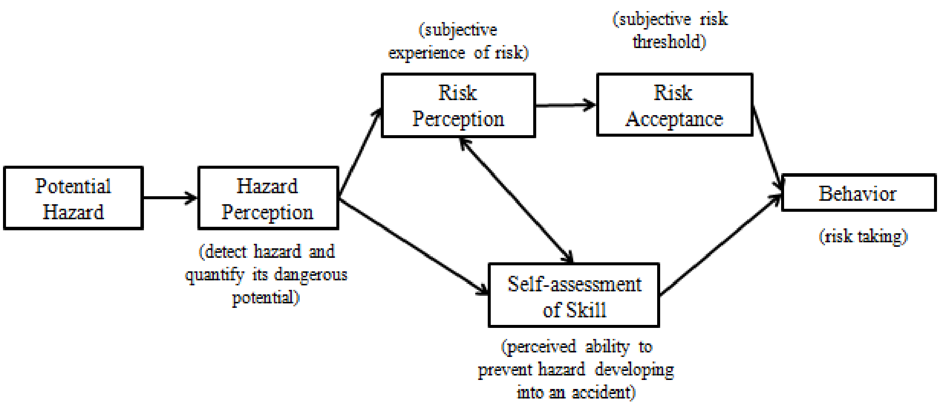

Figure 1. Risk Perception Model, a revised model of processes underlying driving behavior in response to potential hazards (Deery, 1999).

1.6.1 Hazard Perception

As it was noted by Deery (1999), it is important to define objective risk, and also hazard, before examining hazard and risk perception of drivers. According to Armsby, Boyle and Wright (1989), “a hazard is any aspect of the road environment or any combination of circumstances on the road that an individual perceives to be dangerous”. Moreover, Brown and Groeger (1988) defined objective risk based upon the common dictionary meaning as “the ratio between some measure of adverse consequences of events and some measure of exposure to conditions under which those consequences are possible”.

In various studies, hazard perception level of drivers is investigated through the driving experience. Proposing that hazard perception is a cognitively demanding skill, McKenna and Farrand (1999) put forward that driving experience improves hazard perception level. Also, McKenna and Crick (1994) reported that more experienced drivers are better at identifying hazards than inexperienced drivers. Furthermore, experienced drivers were found to be better at adapting their visual scanning patterns to various roads when compared to novice drivers (Chapman & Underwood, 1998).

Nevertheless, it should be noted that, in the abovementioned study of McKenna and Farrand (1999), the level of experience was not measured by the mileage driven but by years of driving experience. Pradhan, Hammel, DeRamus, Pollatsek, Noyce and Fisher (2005) also showed that the difference in hazard perception levels between novice and experienced younger drivers is not as large as the one between younger and older experienced drivers. Therefore, it may be concluded that although experience is an important factor in hazard perception, years of driving experience is a more important factor while drivers from same age groups may not differ in hazard perception levels.

1.6.2 Risk Perception

In the risk literature, "an abstract determination of perceived level of risk" and "the extent to which risk is deemed to be acceptable" are the two concepts which are not generally and clearly distinguishable (HaSPA, 2012). One definition of risk from occupation health and safety perspective can be made by a simple equation as *"the level of risk" = "likelihood" x "consequences"* (Whyte, 1983; Sandman, 1993). On the other hand, Armsby et. al. (1989), in parallel with the approach in the model, made a definition as "risk is the level of danger associated with a hazard, as perceived by the individual". Deery (1999) pointed out the significant role of subjective risk in numerous risk-based theories regarding traffic. To illustrate, experience-related factors and age-related factors or both can be reflected in specific foresight of young drivers with lower levels of risk perception (Mayhew & Simpson, 1995). Machado, de Oña, de Oña, Eboli and Mazzulla (2014) indicated that the distinction between the terms risk and danger may help developing intervention programs in traffic based concept of risk.

Jonah (1986) defined risk perception as "the perceived likelihood of an event occurring (e.g. an accident while driving) or the likelihood that the event will result in negative consequences (i.e. injury or death)". Various researchers have indicated that young drivers' risk perception levels are inversely related to risky behavior (Machin & Sankey, 2008; Harre, 2000; Brown & Groeger, 1988). To clarify, it has been noted that young drivers who perceive lower risks in traffic are prone to exhibit risky driving behavior in traffic. However, the study conducted by Jovanović, Stanojević and Jakšić (2014) revealed that although the drivers with lower risk perception may perform ordinary violations in traffic, traffic accidents were not found to be solely influenced by risk perception. In the case of professional and non-professional drivers of the same age group, Sivak, Soler, Tränkle and Spagnhol (1989) reported that the risk ratings of these two groups were not significantly different from each other. Similarly, Rosenbloom, Shahar, Elharar and Danino (2008) argued that the effects of age and driving experience on perceived risk were not differentiated in their study, suggesting that "that the difference in perceived risk that was found between the age groups is related more to the age-difference than to the difference in driving experience".

1.6.3 Risk Acceptance and Sensation Seeking

According to Jonah (1986), the term "risk-taking" does not have to be used to imply one's volition. He clarified the difference between risk perception and risk acceptance by discussing the awareness of what one is doing. To illustrate, if a driver is not aware of the possible results of his action (e.g. overtaking) in traffic and continues to take the action, it can be considered as risk perception; whereas, if a driver is aware of the possible results of his action in traffic and continues to take the action/risk intentionally, it can be considered as risk acceptance. At this point, although not included in the model, one should note that two cognitive mechanisms can also be considered to understand drivers' risk acceptance levels. Optimism bias (Weinstein, 1980; Weinstein, 1987), means that people tend to believe that negative events are less likely and positive events are more likely to be experienced; and illusion of control (Langer, 1975) can be defined as "an expectancy of a personal success probability inappropriately higher than the objective probability would warrant."

According to the research performed by Deery (1999), sensation seeking and impulsiveness were considered as the two personality traits that were related to risk-taking behavior. Likewise, Rohrmann (2005) stated that although personality traits such as sensation-seeking and impulsivity affect people's risk attitudes, risk attitudes are not totally constructed by these factors.

Burns and Wilde (1995) defined risk-taking as "any behavior that has a significant degree of uncertainty about the losses associated with its outcome (e.g. speeding)". Hence, when the perceived benefits of risk-taking behavior exceed possible undesirable consequences, risky actions are performed.

In particular case of drivers, young male drivers do not only accept risks in traffic but they may also seek risks while driving. In traffic safety literature, there are various studies revealing that young drivers perform riskier behaviors by driving faster than older drivers (Jonah, 1986). Moreover, he argued that people representing one risky driving behavior may also represent other risky behaviors which can be considered in relation to accident involvement. Nevertheless, Arnett (1991) revealed that young adults (mid-20s) performed risky driving behaviors in traffic prevalently; however, they did not widely perform such behaviors, as drug use and shoplifting. Similarly, Rohrmann (2005) discussed that although risky behavior may be increased by the level of sensation-seeking; "experience-enhancing" situations do not have to be about risk taking; novel sensations may or may not be led by actions that are induced by the high level of risk propensity.

Therefore, one may conclude that the level of risk acceptance, or specifically sensation-seeking in the present study, does not have to result in risk-taking behavior in any environment; but it has a strong impact on drivers' behavior in traffic.

1.6.4 Self-assessed Driving Skill

Various studies have revealed that drivers are likely to assess their own driving skills better than other drivers (Svenson, 1981; Delhomme, 1991; Groeger & Brown, 1989; Delhomme & Meyer, 2000; Tronsmoen, 2008). Delhomme and Meyer (2000) argued that the tendency to overestimate one's driving skills is valid for both experienced and novice drivers. Having compared these groups, Lajunen and Summala (1995) reported that experienced drivers evaluated their skills higher than inexperienced drivers while inexperienced ones evaluated their safety-motives higher than experienced drivers. Furthermore, even if a driver can be considered as an expert with years of driving experience and intensive training, it was found that they are "just as susceptible to illusions of superiority as" ordinary drivers (Waylen, Horswill, Alexander & McKenna, 2004).

Dalziel and Job (1997a) argued that high driving experience of taxi drivers may provide better skills to avoid crashes since they spend much more time in traffic than non-professional drivers. On the other hand, Jovanovic, Stanojevic and Jaksic (2014) noted that overestimated self-evaluations of young drivers may have a negative impact on their driving style. To clarify, the risky driving behavior of young drivers is considered to be associated with their self-assessed driving skills. Dalziel and Job

(1997b) also argued that young drivers may be negatively affected by their optimism bias because of their age and maturation factors.

Therefore, it may be concluded that although drivers assess their own driving skills better than others in general, when it is the case of young drivers, special attention should be given to the reflections of self-assessment of driving skills since misevaluation of one's own driving skills may result in risk driving behaviors (e.g. speeding) and hence accident involvements.

1.6.5 Driver Behavior

According to the model proposed by Deery (1999), factors and processes in abovementioned sections result in various driving behaviors of young drivers. Deery (1999) distinguished driving behavior from driving skill based on the difference between "decision-making aspects of driving" and "limitations of performance on aspects of the driving task". To illustrate, in the model, time to react to a traffic hazard was considered as part of driving skill; whereas, driving speed and decision regarding the distance to the car in front was considered as part of driving behavior.

As noted by Begg and Langley (2001), young male drivers are prone to exhibit risky driving behavior more than both older male drivers and female drivers. Also, when it is combined with relatively low driving experience, the risk of crashes on the roads is increased.

One may argue that all the factors and measures investigating driver characteristics are designed in order to predict and/or estimate possible driving behaviors. Although there are self-reported driving behavior measures, such that Driver Behavior Questionnaire by Reason, Manstead, Stradling, Baxter, Campbell (1990), proven to be free of social desirability and impression management (Lajunen & Summala, 2003), benefits of technological enhancements have been also used to analyze driving behaviors on simulated traffic environment (Spek, Wieringa & Janssen, 2006; Meuleners & Fraser, 2015; Palat & Delhomme, 2016; Bella & Silvestri, 2016) in recent years.

Therefore, there is an increasing need for associating self-reported driving behavior and simulated driving behavior literature in one study. For this purpose, following two sections based on self-reports and simulated drives for measuring driver behaviors are going to be presented, respectively.

1.6.5.1 Self-reported Driver Behavior

Self-report techniques are widely used in traffic safety literature in order to measure driver behaviors for different age and gender groups. As one of the most famous instruments (Lajunen, Parker, & Summala, 2004; Özkan, Lajunen, Chliaoutakis, Parker, & Summala, 2006), Driver Behavior Questionnaire (Reason, Manstead, Stradling, Baxter, & Campbell, 1990; Sümer & Özkan, 2002; Lajunen & Özkan, 2004; Özkan & Lajunen, 2005) for measuring driver behaviors suggests, aberrant driver behaviors in traffic can be investigated through five distinct indicators: errors, lapses, ordinary violations, aggressive violations and positive driver behaviors. In the first study performed by Reason et. al. (1990), three empirically different classes of behavior were found as errors, violations and slips, and lapses. Errors were defined as "the failure of planned actions to achieve their intended consequences' and lapses were identified as "the unwitting deviation of action from intention". Also, violations were defined as "deliberate deviations from those practices believed necessary to maintain the safe operation of a potentially hazardous system". Finally, Özkan and Lajunen (2005) included some driver behaviors that do not have to be considered as negative since drivers are also polite and helpful to other road-users.

The concept of risky driving behavior has also been measured through various self-report studies (Dalziel & Job, 1997; Ulleberg & Rundmo, 2003; Fergusson, Swain-Campbell, & Horwood, 2003) in different countries. In the study conducted by Fergusson, Swain-Campbell and Horwood (2003), it was found that younger drivers were more prone to exhibit risky driving behaviors than older drivers. According to Clarke, Ward and Truman (2005), the most frequent risky driving behaviors shown by young drivers were speeding, drinking and driving, recklessness and risky overtakes.

Lajunen, Parker, and Summala (2004) stated that majority of traffic crashes stem from "driver malfunctioning" rather than from vehicles. Parker, Reason, Manstead and Stradling (1995) reported that younger male drivers are more likely to be involved in accidents on roads than both females and older ones due to their proneness to commit violations in traffic.

In a study performed among four types of professional drivers in Xining, China (Wang, Li, Feng, & Peng, 2014), taxi drivers were found to have significantly higher scores in lapses, errors, and violations of DBQ items than other types of professional drivers. Also, according to a study conducted by Haghi, Ketabi, Ghanbari and Rajabi (2014) among taxi drivers in Iran, self-reported accidents were predicted better by violations and lapses in driver behaviors when compared to other variables. Moreover, it was revealed that aberrant behaviors among taxi drivers were performed more frequently in younger ages than in older ages since sufficient skills and experiences have not been reached and also due to sensation-seeking. Furthermore, Ma, Yan, Huang and Abdel-Aty (2010) pointed out that self-reported aggressive and ordinary violations influenced at-fault crashes significantly among taxi and bus drivers in Wuhan, China.

Thus, self-reported driving behaviors of male taxi drivers and male non-professional drivers clearly demonstrate that special attention should be paid to these groups since they pose higher risks in traffic when compared to other comparable driver groups.

1.6.5.2 Driver Behavior on Driving Simulator

An appropriate and safe method to assess driver behaviors can be achieved through driving simulation (Shechtman, Classen, Awadzi, & Mann, 2009). To clarify, driving simulation provides safe conditions to assess risky driver behaviors and various driving situations without causing any damage to life or property. The driving simulation also provides low-cost and reliable driving assessment method for researchers (De Winter, Groot, Mulder, Wieringa, & Dankelman, 2009). In theory, driving simulators are accepted to provide sufficient driving environment to assess individuals' driving behavior under comparable conditions (Lemieux, Stinchcombe, Gagnon, & Bédard, 2014). As Palat and Delhomme (2016) stated in their study, the behavior of participants on a driving simulator and their actual driving behavior were considered very similar meaning that driving simulators provide reliable results when driver behaviors are examined.

In various studies, driving simulators are used in order to detect certain driver characteristics. Speeding behavior as a result of hazard anticipation (Parmet, Borowsky, Yona, & Oron-Gilad, 2015), assessment of drivers' risk perception (Kokubun, Konishi, Higuchi, Kurahashi, & Umemura, 2005; Charlton & Starkey, 2016), driving errors (Meuleners & Fraser, 2014), driver behaviors at traffic lights (Palat & Delhomme, 2016; Wu, Yan, & Radwan, 2016), drivers' behaviors approaching pedestrian crossings (Bella & Silvestri, 2016) can be offered as the subjects that can be investigated through driving simulators.

One struggle about the use of driving simulator can be seen as the data collected. Since various data can be gathered through driving simulation systems, one should be aware of which data to use and which data to omit in a study. Data such as speeding (Wu et. al., 2016; Kobukun et. al. 2005; Bella & Silvestri, 2016; Spek, Wieringa, & Janssen, 2006), braking (Wu et. al., 2016; Palat & Delhomme, 2016), vehicle positioning, number of violations and accidents (Meuleners & Fraser, 2014; Chai & Zhao, 2016) in driving simulator can be represented as main dependent variables collected through driving simulator studies.

Therefore, the driving simulator can be used in order to both assess driver behaviors and to compare self-reported driver behaviors in a specially designed and well-determined traffic conditions.

1.7 Aim of the Study

The aim of the present study can be represented in three main aspects.

The first aim of the present study is to investigate the fit of the model, concerning the processes which may influence the driver behaviors in response to hazards in traffic, proposed by Deery (1999) via including both young male taxi drivers and young male non-professional drivers. In this purpose, a video-based hazard perception measure; a paper-based risk perception measure, a self-assessed driving skill measure, a sensation-seeking measure to evaluate risk acceptance and a self-reported driver behavior measure; and a driving simulation to evaluate driver behavior in a controlled environment have been used.

The second aim of the present study is to compare driver behaviors of young male taxi drivers and young male non-professional drivers while considering the effects of main elements included in the model on driver behaviors. Moreover, by comparing the abovementioned groups, it is aimed to investigate the impact of occupational driving on risky and aberrant driving behaviors in young ages.

The last but not the least, it is aimed to investigate the similarities and differences in findings of self-report driver behaviors and simulation-based driver behaviors by including young male taxi drivers and young male non-professional drivers.

1.8 Significance of the Study

The main body of the present study has been constructed upon the model proposed by Deery (1999). The main contributions of the present study to the traffic safety literature can be listed as follows:

- As far as it can be reached in published traffic safety literature, the present study is the first study in testing relationship among the parts of the model proposed by Deery (1999) to investigate the processes which may influence the driver behaviors in response to hazards in traffic.
- As far as it can be reached in published traffic safety literature, the present study is the first study in investigating two different driver groups, namely young male taxi drivers and young male non-professional drivers, in accordance with the model of Deery (1999).
- As far as it can be reached in published traffic safety literature, the present study is the first study in measuring and comparing driver behaviors proposed by Deery (1999) by using both driving simulation and self-report techniques.

CHAPTER II

METHOD

2.1 Participants

Participants consisted of 40 taxi drivers and 40 non-professional male drivers, where taxi drivers were aged between 18 and 25 years old (*M* = 22.50, *SD* = 1.88 for taxi drivers; *M* = 22.20, *SD* = 1.572 non-professional drivers). All of the participants held a current Turkish driving license, knew driving a manual transmission and have driven more than 3000 kilometers in the last year.

Taxi drivers held driving license for an average of 3.93 years (*SD* = 1.79), their self-reported annual distance driven using their own cars and using their taxis in the last year was between 0 and 500000 km (*M* = 28535.00, *SD* = 86138.45) and was between 800 and 500000 km (*M* = 112212.5, *SD* = 109484.63), respectively. Taxi drivers' self-reported total distance driven with their own cars and with their taxis in their life- time was between 0 and 700000 km (*M* = 102075, *SD* = 171718.67) and was between 800 and 1000000 km (*M* = 299941.50, *SD* = 255514.17), respectively.
Non-professional drivers held driving license for an average of 3.6 years (*SD* = 1.53), their self-reported annual distance driven in the last year was between 3000 and 50000 km (*M* = 12105.00 km, *SD* = 8916.28 km); and their self-reported total distance driven in their life- time was between 5000 and 200000 km (*M* = 41552.63 km, *SD* = 40407.68 km).

The sample of non-professional drivers was recruited via both social networking websites and snowball sampling (Goodman, 1961). On the other hand, the sample of taxi drivers was recruited either by visiting taxi stands that are mostly located in the vicinity of Middle East Technical University campus and also snowball sampling.

The participants took the related tests and questionnaires at Human Factor Laboratory of Psychology Department in METU. The experiment was carried out by the participants, individually. Two hours were allocated for each participant with an incentive of 60 TL as compensation paid for their time, which was funded by TÜBA-GEBİP. Data collection period lasted six weeks, as from the mid of May 2016 till the end of June 2016.

2.2 Instruments

The materials used in the present study is listed and explained in the presented order of the model of processes underlying driving behavior in response to potential hazards (Deery, 1999). It is important to note that “Driving Skill” component of the abovementioned model has been considered together with the “Driver Behavior” component since it is complicated to differentiate the actual driving skill of a driver from either his/her self-assessment of driving skill or actual driving behavior. Hence, hazard perception, risk perception, self-assessment of driving skill; risk acceptance and driving behavior have been considered as the main measurement components of the present research.

2.2.1 Demographic Information

Two separate types of driver information form were prepared for the sample of taxi drivers and non-professional drivers. To clarify, since the taxi drivers may also drive their own cars during their leisure time, they were asked to provide information for both their private cars and their taxis. The mutual questions that were answered by both groups of participants are their age, education level, years of having a driving license.

In addition, both groups of participants were asked to indicate the average speed that they prefer to drive on inter-urban roads and urban roads when weather and road conditions are appropriate; their preference of driving speed when speed limit on the road is 50 km/h, 82 km/h, 90 km/h and 100 km/h; and number of passive accidents they had in the last three years.

On the other hand, the sample of taxi drivers provided information for their private cars and their taxis in the following questions while non-professional drivers provided information only for their private cars: the transmission type used (manual transmission, half automatic transmission and automatic transmission); previous year`s mileage; total mileage; number of accidents regardless of their magnitude and their reason in the last three years; number of active accidents in the last three years; number of parking tickets, number of tickets for improper passing, exceeding the speed limits, red light running and other reasons.

The last but not the least, non-professional drivers were asked to indicate whether they drive professionally or not in order to be sure that none of these participants cause misappropriation of sampling.

2.2.2 Vision Test regarding Traffic (TIGT)

Vision Test regarding Traffic (Trafiğe İlişkin Görüş Testi [TIGT]) is a psychomotor test that is one of the tests included in a psycho-technical test battery, namely TRAFIKENT, developed as part of a project funded by TÜBİTAK-ODTÜ-BİLTEN to establish computer-based psycho-technical evaluation systems for drivers. As far as it can be reached in the related literature, validity studies regarding TIGT have not been performed.

In TIGT, the necessary instructions for the related task are presented on the computer before each run. When the participant completes the training phase and fully understands the instructions of TIGT, s/he continues with the main test by touching “continue” button on the screen. The test takes approximately 12 minutes per individual.

2.2.2.1 Purpose of the Test

The aim of TIGT is to measure drivers’ susceptibilities to hazardous elements in traffic by using different videos recorded in actual traffic conditions. As it has been hypothesized before and investigated in introduction section drivers with higher hazard perception levels are expected to detect hazards better than those with lower hazard perception levels. TIGT was used to measure drivers’ hazard perception levels, their susceptibility levels to errors and violations, and their on-time reaction levels in real traffic conditions.

2.2.2.2 Definition of the Test

Eight traffic scenes recorded in different roadways of Ankara were represented to participants as separate videos where each of them lasts 30 seconds. One of the videos had no mistake or violation while each of the remaining videos had one mistake or violation. The duration of mistakes and violations ranged from 2 seconds to 11 seconds. Participants were instructed that mistakes and violations due to pedestrians and cyclists would not be taken into consideration. Participants were asked to hit the related button on the steering wheel as so long as they detected any mistake and/or violation stemming from cars and drivers in the traffic.

2.2.2.3 Evaluation of the Test

The total scores for the initial and the final reaction points of participants and the duration of reactions were recorded for each video. The rate of overlaps regarding the duration of errors and violations and the reaction of participants were calculated. In the recent study, the following parameter was used for each participant among the test data:

Total press time duration index: (Total press time during mistake/total duration) x 100

2.2.3 Risk Perception Inventory

Risk Perception Inventory (Rosenbloom et al., 2008) was used in the present study to evaluate participants' subjective experiences of risk in the traffic environment. The questionnaire was translated into Turkish using the back-translation method. To clarify, it was firstly translated into Turkish and then translated back into English to guarantee that there is no loss and/or change in the meaning of scale items. The scale included 34 items representing 34 driving situations (e.g., driving at a speed of 100 km/h in an inter-urban road; handling a radio or a cellular phone during driving; losing control over the vehicle while driving on a wet and slippery road).

It is important to note that the main focus of Risk Perception Inventory is skidding (Rosenbloom et al., 2008) and hence items with relation to different degrees of skidding situations are included in the presented questionnaire (e.g., the degree of risk which can be attributed to your driving on a wet road based on your level of knowledge and expertise; driving at a sharp turn on a dry road). The respondents were asked to indicate the degree of risk involved in that driving condition on a 5-point Likert scale (1 = not risky at all; 5 = very risky). Internal consistency reliability coefficient of Risk Perception Inventory was calculated as Cronbach's Alpha = .898 for taxi drivers and as Cronbach's Alpha = .912 for non-professional drivers.

2.2.4 Driver Skill Inventory

The 20-item Driver Skill Inventory (DSI), which was developed by Lajunen and Summala (1995) and adapted into Turkish by Lajunen and Özkan (2004), was used in the present study to evaluate self-assessment of driving skills of the participants. DSI consists of two subscales as perceptual-motor skills (10 items) and safe driving skills (10 items). The respondents were required to rate the degree of their skills relative to a hypothetical "average Turkish driver" in each condition on a 5-point Likert scale (1 = very weak; 5 = very strong). Internal consistency reliability coefficients of perceptual-motor skills score were calculated as Cronbach's Alpha = .908 for taxi drivers and as Cronbach's Alpha = .73 for non-professional drivers; Internal consistency reliability coefficients of safe driving skills score were calculated as Cronbach's Alpha = .85 for taxi drivers and as Cronbach's Alpha = .68 for non-professional drivers.

2.2.5 Arnett's Inventory of Sensation Seeking

20-item Arnett's Inventory of Sensation Seeking (AISS), developed by Arnett (1994), was adapted into Turkish by Özkan (2002). 5 risk-taking items of the Multidimensional Self-Destructive Scale (MSS) (Persing & Schick, 1999) was added to AISS by Özkan (2002) in order to obtain more accurate results about the risk-taking tendencies of the participants. Finally, Özkan, Sümer, Ayvaşık and Er (2002) dropped "I don't like extremely hot and spicy foods" item of AISS since hot and spicy foods are commonly used in Turkish foods.

Hence, 24-item AISS - which consists of three subscales as novelty (9 items), intensity (10 items) and risk-taking (5 items) - was used in the present study to measure sensation seeking and risk-taking motivation of the participants. The respondents were required to rate the degree of convenience of the specific condition for themselves on a 5-point Likert scale (1 = Correct; 5 = False). Internal consistency reliability coefficients of novelty score were calculated as Cronbach's Alpha = .67 for taxi drivers and as Cronbach's Alpha = .52 for non-professional drivers; internal consistency reliability coefficients of intensity score were calculated as Cronbach's Alpha = .55 for taxi drivers and as Cronbach's Alpha = .54 for non-professional drivers; internal consistency reliability coefficients of risk-taking score were calculated as Cronbach's Alpha = .76 for taxi drivers and as Cronbach's Alpha = .81 for non-professional drivers;

2.2.6 Driver Behavior Questionnaire (DBQ)

28-item Driver Behavior Questionnaire (DBQ) developed by Reason et. al (1990) was adapted into Turkish by Sümer, Lajunen and Özkan (2002). Not only Sümer and Özkan (2002) but also Lajunen and Özkan (2004) validated the Turkish translation of DBQ among both professional and non-professional drivers, respectively. 14-item Positive Driver Behavior Questionnaire developed by Özkan and Lajunen (2005) was also added to the main body of DBQ in order to investigate the effect of driving experience in traffic that leads to "good manner of driving".

Hence, 42 items representing five subscales of DBQ as errors, lapses, ordinary violations, aggressive violations and positive driver behaviors were included in the present study to measure the driving behavior of participants and, more importantly, to compare the self-reported driving behavior of participants with the results of the driving simulation test. Internal consistency reliability coefficients of ordinary violations score were calculated as Cronbach's Alpha = .79 for taxi drivers and as Cronbach's Alpha = .72 for non-professional drivers; internal consistency reliability coefficients of aggressive violation score were calculated as Cronbach's Alpha = .73 for taxi drivers and as Cronbach's Alpha = .65 for non-professional drivers; internal consistency reliability coefficients of lapses score were calculated as Cronbach's Alpha = .68 for taxi drivers and as Cronbach's Alpha = .63 for non-professional drivers; internal consistency reliability coefficients of errors score were calculated as

Cronbach’s Alpha = .36 for taxi drivers and as Cronbach’s Alpha = .47 for non-professional drivers; and internal consistency reliability coefficients of positive driver behaviors score were calculated as Cronbach’s Alpha = .83 for taxi drivers and as Cronbach’s Alpha = .62 for non-professional drivers.

2.2.7 Driving Simulator

STISIM Drive® Model 100 Wide Field-of-View Complete System with the software of STISIM DRIVE-M100W-ASPT was used as a driving simulator in the present study. The simulation program was installed on DELL Optiplex 980 and three 22’’ LCD monitors were used to display the driving scenario (see Figure 2). Participants used gas, brake and clutch pedals as well as manual transmission to control the speed of the simulated car. Moreover, Logitech G27 Racing Wheel was used to control the position of the simulated car. In the configuration, the frame rate (headway distance and velocity) was calibrated to 60 Hz and screen resolution was selected as 1280 by 1024.

Figure 2. Experimental setting of the driving simulator

2.2.7.1 Training Scenario

Participants were provided 3 km test drive on the simulator to assure that they get used to the mechanical characteristics of the simulated car and to assure that they know using a manual transmission and do not have motion sickness, disturbing the participant during driving simulation. The scenario of the training drive consisted of

4 (2 + 2) lane road with ongoing low-density traffic, 5 horizontal curves, and 5 traffic lights.

One of the most important concerns regarding driving simulation can be regarded as the lack of feeling of momentum while driving. To clarify, as the participant does not sense the speed of the simulated car like real drive, they may go faster and may not accurately evaluate braking distance. In this purpose, there were three events of traffic light change placed in this scenario: one of the traffic lights turned from green to red when the participant had 200 meters to reach the traffic lights, one of them turned from green to red when the participant had 100 meters to reach the traffic lights and one of them turned from green to red when the participant had 50 meters to reach the traffic lights. In order to avoid any bias on participants about traffic light changes, two of the traffic lights stayed on the green when the driver passed by.

2.2.7.2 Driving Simulator Scenario

In the actual simulation drive, participants were provided 9 km driving simulation with the same mechanically characterized simulated car (see Figure 3). Participants were asked to drive as similar as possible to their daily driving behaviors. The roadways used in the complete scenario were designed as three roadways: urban road (4500 meters) with horizontal curves (~25% of the urban roadway), inter-urban highway (1500 meters) with no horizontal curves and countryside (3000 meters) with horizontal curves (50% of the countryside roadway).

Figure 3. Snapshot of the driving simulator scenario

The urban road consisted of 4 (2 + 2) lanes with ongoing traffic, parked cars, and pedestrians on both sides of the road. The inter-urban road consisted of 6 (3 + 3) lanes with ongoing traffic on both sides. Finally, the countryside road consisted of 2 (1 + 1) lanes with ongoing traffic on both sides.

In the urban road, a total of 14 events in this entire scenario took place. To clarify, there were three main types of events in the driving simulator as follows: events regarding pedestrians in traffic, events regarding traffic light changes in the city center and finally events regarding other vehicles' actions in traffic. The occurrence order of abovementioned events is mixed; hence, explanations of the events in the driving scenario are going to be presented in the occurrence order of events:

The first event occurs when the participant covers a distance of 100 meters
When the participant is 50 meters behind, a parked car on the right pavement enters the road and drives on the right lane with a speed of 54 km/s.

The second event occurs when the participant covers a distance of 400 meters
When the participant has 50 meters to reach to the first traffic light at the four-way intersection, it turns from green to red (waiting 1 sec. on yellow). Cars pass from both sides.

The third event occurs when the participant covers a distance of 680 meters
When the participant is 50 meters behind, a parked car on the right pavement enters the road and drives on the left lane with a speed of 55 km/s.

The fourth event occurs when the participant covers a distance of 900 meters
When the participant has 50 meters to reach to the second traffic light at the four-way intersection, it turns from green to red (waiting 1 sec. on yellow). Cars pass from both sides and pedestrians use the crossing.

The fifth event occurs when the participant covers a distance of 1300 meters
When the participant is 75 meters behind, the first pedestrian on the right pavement starts crossing over.

The sixth event occurs when the participant covers a distance of 1310 meters
When the participant is 175 meters behind, the second pedestrian on the left pavement starts crossing over.

The seventh event occurs when the participant covers a distance of 1400 meters
When the participant is 50 meters behind, the third pedestrian on the right pavement starts crossing over.

The eighth event occurs when the participant covers a distance of 1500 meters
When the participant has 50 meters to reach to the third traffic light at the four-way intersection, it turns from green to red (waiting 1 sec. on yellow). Pedestrians use the crossing; but, there are no cars passing in this event.

The ninth event occurs when the participant covers a distance of 1600 meters
When the participant is 50 meters behind, the fourth pedestrian on the right pavement starts crossing over.

The tenth event occurs when the participant covers a distance of 2000 meters
When the participant is *160, 170 and 100 meters* behind, respectively; three pedestrians, *two on the left and one on the right pavement,* start crossing over at a horizontal curve.

The eleventh event occurs when the participant covers a distance of 2070 meters
When the participant is 50 meters behind, a parked car on the right pavement enters the road and drives on the right lane with a speed of 32 km/s.

The twelfth event occurs when the participant covers a distance of 3500 meters
When the participant has 100 meters to reach to the fourth traffic light at the four-way intersection, it turns from green to red (waiting 1 sec. on yellow). Cars pass from both sides.

The thirteenth event occurs when the participant covers a distance of 3950 meters
When the participant is 50 meters behind, a parked car on the right pavement enters the road and drives on the right lane with a speed of 55 km/s.

The fourteenth event occurs when the participant covers a distance of 4250 meters
When the participant has 100 meters to reach to the fourth traffic light at the four-way intersection, it turns from green to red (waiting 1 sec. on yellow). There are no cars passing and no pedestrians crossing in this section.

2.3 Procedure

The data of the present study was collected as a part of larger project. In this section, only the necessary tests and questionnaires included in the present study are going to be represented.

On arrival at the laboratory, the age of participants was rechecked to avoid any misappropriation of age limits. At the beginning of each experiment session, the participants were asked to read and sign the consent form, explaining the purpose and the content of the experiment. Any questions the participant had were answered before the tests started.

The content and the procedure of the current study are as follows:

1. Participants took 3 km test drive (2-3 minutes) on the driving simulator in order to get used to the main characteristics of the simulated car and to check whether he had motion sickness on simulated driving environment. Moreover, the participant was re-informed that the car on simulation environment had a manual transmission. The road and the traffic features of the training simulation environment are explained in the related section.

   After completing the test drive, the participant was asked whether he had any problem and if he could take the actual driving test. None of the participants rejected to continue with the actual driving test on STISIM. Hence, all participants took 9 km main driving test (approximately 10 minutes) on simulation with the same mechanically characterized car. The road and the traffic features of the training simulation environment are again explained in the related section.
2. Participants were asked to complete a demographics form and took a series of questionnaires. Risk Perception Inventory (Rosenbloom, Shahar, Elharar, & Danino, 2008), Driver Skill Inventory (Lajunen & Summala, 1995), Driver Behavior Questionnaire (Reason, Manstead, Stradling, Baxter & Campbell, 1990; Özkan & Lajunen, 2005), Sensation Seeking Inventory (Arnett, 1994; Özkan, 2002) are the four scales that have been included in the present study. The completion of this questionnaire set took approximately 30 minutes. Necessary information about these scales is provided in the related sections.

3. The participant took the psychomotor test (approximately 10 minutes). The results of TIGT were included in the present study to evaluate the hazard perception level of the participant.

CHAPTER III

RESULTS

3.1 Data Cleaning and Outlier Detection

Before the main analyses are conducted, data cleaning and screening procedures were performed in order to improve the quality of the data. First of all, the data obtained from the driving simulator and the psychomotor test were included in the file containing self-reports of participants. Secondly, univariate outliers of taxi driver sample and non-professional male driver samples were investigated, separately. At this point, a cell regarding total mileage driven from non-professional driver data was found to be a univariate outlier as Z-score = 5.56 (>3.29). Not only the mentioned outlier but also a participant from non-professional driver sample did not state the information of total mileage driven; hence further analyses were conducted with 40 taxi drivers and 38 non-professional male drivers, accordingly.

3.2 Data Not Included in the Analyses

Preliminary statistical analyses have revealed that a number of data collected via driving simulator had either no or arguable significances on correlation analyses, comparisons between the two groups and regression analyses. Firstly, although standard deviations (SD) of speeds for the whole scenario and three different segments in driving simulator have been measured, only the SD of speed in the third segment has been included in the following analyses. The reason behind this decision is that due to the presence of traffic lights and pedestrians in the first segment of the scenario, SD of speed in the first segment and the whole would be strongly affected by simulation factors. Moreover, since the second segment was a straight highway and was designed for observing participants' speeding behavior, very limited standard deviations in speeds have been predicted and hence SD of speed in the second segment was not included in the analyses, either. Secondly, eight data regarding driver mistakes on driving simulator have also been omitted from the following analyses as number of car collisions, pedestrian hits on road, car collisions and pedestrian hits on traffic lights in the first segment; number of accidents and car collisions in the second segment; and, number of car collisions and road edge accidents in the third segment.

By the help of this simplification, more inclusive and comprehensive study variables were represented in the following analyses. To illustrate, a number of accidents in the first segment was considered adequate for measuring driver mistakes in the first segment of the scenario. Similarly, a number of accidents in the third segment was considered adequate for measuring driver mistakes in the third segment rather than including a number of car collisions and road edge accidents, where both events happened so rarely. Hence, total average velocity in the whole scenario; average velocities in the first, second and third segment; SD of average velocity in the third segment; number of accidents in the whole scenario, number of accidents and number of traffic light tickets in the first segment; number of accidents and number of overtakes in the third segment are the driving simulator data included in the recent study. Finally, no driver mistake data was collected in the second segment of the scenario because there was so little probability that participants had either accident or car collision in the second segment.

3.3 Correlation Analyses

Correlations among age, total mileage in drivers' lifetime, hazard perception, risk perception, self-assessed driving skill, risk acceptance, self-reported driving behavior and driving speed and driving mistakes on driving simulator have been investigated and they are represented in this section. Related correlation analyses were conducted in accordance with the main variables of risk perception model used in the study. In order to provide a comprehensive interpretation regarding correlations among variables and participants, correlations are going to be represented separately for both the study variables and the groups of participants.

3.3.1 Correlation Analysis Based on Study Variables of Taxi Drivers

In this section correlation analysis based on study variables of taxi drivers are going to be represented.

Table 1.1. Correlations between the factors of the instruments used in the present study, Taxi Drivers

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
1. Age	1												
2. Total Mileage	.12	1											
3. Hazard Perception	.19	.03	1										
4. Risk Perception	.35*	.07	.02	1									
5. Novelty (AISS)	.08	.10	-.21	-.29	1								
6. Intensity (AISS)	-.06	.26	-.01	-.19	.56**	1							
7. Risk Taking (AISS)	-.02	.25	-.27	-.18	.64**	.65**	1						
8. Safe Driving Skills (DSI)	.02	.13	-.16	.42**	-.17	-.18	-.12	1					
9. Perceptual Skills (DSI)	-.14	.22	-.23	.07	.10	.17	.15	.75**	1				
10. Errors (DBQ)	-.13	-.15	-.01	-.48**	.31	.11	.14	-.29	-.07	1			
11. Lapses (DBQ)	-.01	-.28	-.10	-.19	.34*	-.01	.01	-.56**	-.40*	.42**	1		
12. Ordinary Violations (DBQ)	-.10	-.19	.04	-.67**	.42**	.30	.27	.43**	-.01	.60**	.39*	1	
13. Aggressive Violations (DBQ)	-.14	.01	.18	-.59**	.41**	.36*	.23	-.26	.17	.35*	.13	.69**	1

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).*

Table 1.1. Continued

	1	2	3	4	5	6	7	8	9	10	11	12	13
14. Positive Behaviors (DBQ)	-.17	-.05	.11	-.09	.12	.08	.05	.34*	.31	.08	-.18	.05	.11
15. Total Average Speed	-.14	.02	-.17	-.26	.35*	.35*	.37*	-.30	.11	.23	.36*	.50**	.36*
16. Seg.1 Average Speed	-.16	.00	-.19	-.29	.28	.34*	.37*	-.25	.12	.22	.26	.47**	.32
17. Seg.2 Average Speed	-.09	.01	-.16	-.17	.34*	.24	.28	-.31	.09	.23	.40*	.44**	.27
18. Seg.3 Average Speed	-.06	.07	-.09	-.18	.43**	.35*	.32*	-.30	.10	.18	.45**	.45**	.40*
19. Seg.3 SD of Average Speed	-.01	.17	-.05	-.32*	.41**	.25	.18	-.34*	-.05	.23	.32*	.29	.45**
20. Total Accidents	.10	-.06	.04	-.18	.25	.06	.19	-.34*	-.18	.40*	.52**	.26	.12
21. Seg.1 Accidents	.05	-.11	.02	-.15	.22	.03	.11	-.11	.02	.36*	.51**	.25	.11
22. Seg.1 Traffic Tickets	-.17	.05	-.19	-.30	.26	.19	.32*	-.13	.16	.24	.16	.38*	.34*
23. Seg.3 Accidents	.05	-.01	-.12	-.31	.25	.02	.14	-.61**	-.49**	.35*	.52**	.32*	.09
24. Seg.3 Overtakes	-.23	.09	-.02	-.37*	.26	.17	.02	-.36*	.06	.39*	.42**	.37*	.41**

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).*

Table 1.1. Continued

	14	15	16	17	18	19	20	21	22	23	24
14. Positive Behaviors (DBQ)	1										
15. Total Average Speed	-.26	1									
16. Seg.1 Average Speed	-.24	.96**	1								
17. Seg.2 Average Speed	-.20	.87**	.76**	1							
18. Seg.3 Average Speed	-.23	.86**	.71**	.76**	1						
19. Seg.3 SD of Average Speed	-.06	.34*	.19	.31	.62**	1					
20. Total Accidents	-.05	.18	.07	.29	.30	.29	1				
21. Seg.1 Accidents	-.06	.24	.17	.34*	.27	.05	.83**	1			
22. Seg.1 Traffic Tickets	-.21	.79**	.87**	.55**	.52**	.13	.04	.13	1		
23. Seg.3 Accidents	-.15	.19	.09	.24	.30	.54**	.69**	.29	.04	1	
24. Seg.3 Overtakes	-.14	.64**	.53**	.56**	.74**	.70**	.32*	.26	.41**	.38*	1

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).*

As presented in Table 1.1, one significant correlation was detected among age and other study variables. Age was positively related with risk perception level (r = .35*, p < .05). However, no significant correlations were detected among total mileage and other study variables.

According to the results regarding risk perception levels of taxi drivers, they were negatively related to the data obtained from driving simulator as follows: standard deviation of driving speed (r = -.32*, p < .05) and number of overtakes (r = -.37*, p < .05) in the third segment.

According to the results regarding taxi drivers' risk acceptance levels, novelty level of AISS was positively related with the data obtained from driving simulator as follows: means of driving speeds in the whole scenario (r = .35*, p < .05), in the second segment (r = .34*, p < .05) and in the third segment (r = .43**, p < .01); standard deviation of driving speed in the third segment (r = .41**, p < .01). Secondly, intensity level of AISS was positively related with the data obtained from driving simulator as follows: means of driving speeds in the whole scenario (r = .35*, p < .05), in the first segment (r = .34*, p < .05) and in the third segment (r = .35*, p < .05). Finally, risk-taking level of AISS was positively related with the data obtained from driving simulator as follows: means of driving speeds in the whole scenario (r = .37*, p < .05), in the first segment (r = .37*, p < .05) and in the third segment (r = .32*, p < .05); and number of traffic light tickets in the first segment (r = .31*, p < .05).

According to the results regarding self-assessed driving skills, safe driving skills were positively related to risk perception level (r = .42**, p < .01). On the other hand, they were negatively related with the data obtained from driving simulator as follows: standard deviation of driving speed in the third segment (r = -.34*, p < .05); total number of accidents (r = -.34*, p < .05); number of accidents (r = -.61**, p < .01) and number of overtakes (r = -.36*, p < .05) in the third segment. Secondly, perceptual motor skills were found to be negatively related to the data obtained from driving simulator as follows: a number of accidents in the third segment (r = -.49**, p < .01).

According to the results regarding driver behaviors, lapses were negatively related with both safe driving skills (r = -.56**, $p < .01$) and perceptual motor skills (r = -.40*, $p < .05$). On the other hand, lapses were positively related with novelty level of AISS (r = .34*, $p < .05$). Moreover, lapses were positively related with the data obtained from driving simulator as follows: average driving speed in the complete scenario (r = .36*, $p < .05$), means of driving speeds in the second segment (r = .40*, $p < .05$) and in the third segment (r = .45**, $p < .01$); standard deviation of driving speed in the third segment (r = .32*, $p < .05$); total number of accidents (r = .52**, $p < .01$), number of accidents in the first segment (r = .51**, $p < .01$), number of accidents (r = .52**, $p < .01$) and number of overtakes (r = .42**, $p < .01$) in the third segment. Secondly, errors were found to be negatively related with risk perception level (r = -.48**, $p < .01$). Furthermore, errors were positively related with the data obtained from driving simulator as follows: total number of accidents (r = .40*, $p < .05$), number of accidents in the first segment (r = .38*, $p < .05$); number of accidents (r = .35*, $p < .05$) and number of overtakes (r = .39*, $p < .05$) in the third segment. Thirdly, aggressive violations were found to be negatively related with risk perception level (r = -.59**, $p < .01$); whereas they were positively related with novelty level (r = .41**, $p < .01$) and intensity level (r = .36*, $p < .05$) of AISS. Also, aggressive violations were positively related with the data obtained from driving simulator as follows: average driving speed in the whole scenario (r = .36*, $p < .05$), in the first segment (r= .32*, $p < .05$) and in the third segment (r = .40*, $p < .05$); standard deviation of driving speed in the third segment (r = .45**, $p < .01$); number of traffic light tickets in the first segment (r = .34*, $p < .05$) and number of overtakes in the third segment (r = .41**, $p < .01$). In addition, ordinary violations were found to be negative related with safe driving (r = -.43**, $p < .01$) and risk perception level (r = -.67**, $p < .01$) while they were positively related with novelty level of AISS (r = .42**, $p < .01$). Also, ordinary violations were positively related with the data obtained from driving simulator as follows: average driving speed in the whole scenario (r = .50**, $p < .01$), in the first segment (r = .47**, $p < .01$), in the second segment (r = .44**, $p < .01$) and in the third segment (r = .45**, $p < .01$); number of traffic light tickets in the first segment (r = .38*, $p < .05$); number of accidents (r = .32*, $p < .05$) and number of overtakes (r = .37*, $p < .05$) in the third segment. Finally, positive driving behaviors were found to be positively related with safe driving skills ($r = .34^*$, $p < .05$).

3.3.2 Correlation Analysis Based on Study Variables of Non-Professional Drivers

In this section correlation analysis based on study variables of non-professional drivers are going to be represented.

Table 1.2. Correlations between the factors of the instruments used in the present study, Non-Professional Drivers

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	1												
2. Total Mileage	.44**	1											
3. Hazard Perception	-.13	.02	1										
4. Risk Perception	-.02	.03	-.17	1									
5. Novelty (AISS)	.04	.15	-.15	-.16	1								
6. Intensity (AISS)	.18	.31	-.22	-.26	.38*	1							
7. Risk Taking (AISS)	.01	.06	-.17	-.40**	.66**	.50**	1						
8. Safe Driving Skills (DSI)	-.08	-.15	-.01	.44**	-.27	-.24	-.23	1					
9. Perceptual Skills (DSI)	.12	.31	-.21	-.02	-.01	.09	-.05	.23	1				
10. Errors (DBQ)	.13	-.11	-.04	.08	-.11	.38*	.04	-.24	-.34	1			
11. Lapses (DBQ)	.05	-.19	.14	-.15	-.02	.05	.07	-.05	-.29	.29	1		
12. Ordinary Violations (DBQ)	.13	.28	.11	-.47**	.22	.32*	.25	-.39*	.26	.07	.29	1	
13. Aggressive Violations (DBQ)	.13	.34*	.04	-.07	-.08	.25	.07	-.02	.31*	.20	.27	.36*	1

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).*

Table 1.2. Continued

	1	2	3	4	5	6	7	8	9	10	11	12	13
14. Positive Behaviors (DBQ)	-.09	.10	-.11	-.03	-.07	-.12	-.24	.34*	.33*	-.31*	-.10	-.00	.04
15. Total Average Speed	.09	-.03	-.15	-.32*	.21	.11	.23	-.15	.28	.02	.35*	.55**	.36*
16. Seg.1 Average Speed	.10	-.03	-.10	-.29	.20	.07	.18	-.10	.31	-.04	.32*	.46**	.37*
17. Seg.2 Average Speed	.12	-.06	-.28	-.29	.30	.19	.32*	-.21	.24	.06	.15	.50**	.22
18. Seg.3 Average Speed	.03	-.02	-.11	-.28	.10	.07	.17	-.15	.18	.07	.41**	.56**	.32*
19. Seg.3 SD of Average Speed	.01	.22	.10	.14	.17	.08	.21	.20	.36*	-.07	-.05	.30	.26
20. Total Accidents	-.04	.12	.05	-.50**	.16	.28	.41**	-.14	.03	-.01	-.10	.24	.19
21. Seg.1 Accidents	-.08	.08	.06	-.52**	.13	.21	.38*	-.17	.02	-.04	-.06	.25	.20
22. Seg.1 Traffic Tickets	.20	-.02	-.08	-.39*	-.03	-.02	.17	-.10	.21	-.23	.25	.32*	.22
23. Seg.3 Accidents	b	b	b	b	b	b	b	b	b	b	b	b	b
24. Seg.3 Overtakes	.18	.17	-.17	-.27	.36*	.16	.41**	-.21	.15	.03	.11	.49**	.13

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).*

b. Cannot be computed because at least one of the variables is constant.

Table 1.2. Continued

	14	15	16	17	18	19	20	21	22	23	24
14. Positive Behaviors (DBQ)	1										
15. Total Average Speed	.12	1									
16. Seg.1 Average Speed	.17	.95**	1								
17. Seg.2 Average Speed	-.05	.83**	.71**	1							
18. Seg.3 Average Speed	-.11	.90**	.75**	.70**	1						
19. Seg.3 SD of Average Speed	.03	.30	.27	.21	.34*	1					
20. Total Accidents	.10	.36*	.33*	.40**	.29	.00	1				
21. Seg.1 Accidents	.11	.40*	.36*	.42**	.34*	-.01	.98**	1			
22. Seg.1 Traffic Tickets	.01	.69**	.74**	.45**	.57**	.18	.25	.28	1		
23. Seg.3 Accidents	b	b	b	b	b	b	b	b	b	1	
24. Seg.3 Overtakes	-.05	.64**	.56**	.60**	.62**	.50**	.30	.32*	.41**	b	1

***. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).*

b. Cannot be computed because at least one of the variables is constant.

As presented in Table 1.2, one significant correlation was detected among age and other study variables. Age was positively related with total mileage driven in non-professional drivers' lifetime (r = .44**, $p < .01$). Moreover, total mileage was found to be positively related with aggressive violations (r = .34*, $p < .05$).

According to the results regarding risk perception levels of non-professional drivers, risk perception was negatively related with risk-taking level of AISS (r = -.40**, $p < .01$). Furthermore, risk perception was negatively related with the data obtained from driving simulator as follows: mean of driving speed in the whole scenario (r = -.32*, $p < .05$); total number of accidents (r = -.50**, $p < .05$); number of accidents (r = -.52**, $p < .01$), number of traffic light tickets (r = -.39*, $p < .05$) in the first segment. According to the results regarding non-professional drivers' risk acceptance levels, novelty level of AISS was found to be positively related with the number of overtakes performed in the third segment of driving simulator scenario (r = .36*, $p < .05$). Secondly, no significant correlation has been detected among intensity level of AISS and other study variables. Finally, risk-taking level of AISS was found to be positively related with the data obtained from the driving simulator as follows: mean of driving speed in the second segment (r = .32*, $p < .05$); total number of accidents (r = .41**, $p < .01$); number of accidents in the first segment (r = .38*, $p < .05$); and number of overtakes in the third segment (r = .41**, $p < .05$).

According to the results regarding self-assessed driving skills, safe driving skills were found to be positively related with the level of risk perception (r = .44**, $p < .01$). Secondly, perceptual motor skills were found to be positively related to the standard deviation of driving speed in the third segment of driving simulator scenario (r = .36*, $p < .05$).

According to the results regarding driver behaviors, lapses were positively related with the data obtained from driving simulator as follow: means of driving speeds in the whole scenario (r = .35*, $p < .05$), in the first segment (r = .32*, $p < .05$) and in the third segment (r = .41**, $p < .01$). Secondly, errors were found to be negatively related with perceptual motor skills (r = -.34*, $p < .05$), while they were positively related with intensity level of AISS (r = .38*, $p < .05$). Thirdly, aggressive violations were positively related with perceptual motor skills (r = .31*, $p < .05$) and the data obtained from driving simulator as follows: means of driving speeds in the whole scenario ($r = .36^*$, $p < .05$), in the first segment ($r = .37^*$, $p < .05$) and in the third segment ($r = .32^*$, $p < .05$). In addition, ordinary violations were negatively related with safe driving skills ($r = -.39^*$, $p < .05$) and risk perception level ($r = -.47^{**}$, $p < .01$) while they were positively related with intensity level of AISS ($r = .32^*$, $p < .05$). Moreover, ordinary violations were positively related with the data obtained from driving simulator as follows: means of driving speeds in the whole scenario ($r = .55^{**}$, $p < .01$), in the first segment ($r = .47^{**}$, $p < .01$), in the second segment ($r = .50^{**}$, $p < .01$) and in the third segment ($r = .56^{**}$, $p < .01$); number of traffic light tickets ($r = .32^*$, $p < .05$) in the first segment and number of overtakes in the third segment ($r = .49^{**}$, $p < .01$). Finally, positive driver behaviors were found to be positively related with both safe driving skills ($r = .34^*$, $p < .05$) and perceptual motor skills ($r = .33^*$, $p < .05$).

3.4 Comparison of Taxi Drivers and Non-Professional Drivers on Main Study Variables

A one-way analysis of covariance (ANCOVA) was performed to determine the differences between taxi drivers and non-professional drivers on study variables of the model, controlling for total mileage driven in drivers' lifetime. In this purpose, hazard perception, risk perception, self-assessed driving skills, self-reported and simulated driver behaviors have been analyzed. According to the results, there were no significant differences between two groups regarding hazard perception levels, risk perception levels, self-assessed driving skills and self-reported driver behaviors. Study variables determined to be significantly different between the groups are represented in the following sections. The comparison of the taxi and non-professional drivers on main study variables are presented in Table 2.

Table 2. Analysis of Covariance Summary- Comparison of Taxi and Non-Professional Drivers on Main Study Variables

	Taxi Drivers Mean	*Non-Professional Drivers Mean*	*F*	*Partial Eta Squared*
Hazard Index	67.1	71.2	3.20	.041
Risk Perception	3.51	3.58	.49	.007
Novelty (SS)	2.29	2.60	5.03*	.063
Intensity (SS)	2.14	2.24	2.48	.032
Risk Taking (SS)	2.62	2.75	2.16	.028
Safety Skills	4.11	3.94	.58	.008
Perceptual Motor Skills	4.44	4.06	3.71	.047
Lapses (DBQ)	.53	.79	1.32	.017
Errors (DBQ)	1.02	.87	2.42	.031
Aggressive Violations (DBQ)	1.30	1.61	1.81	.024
Ordinary Violations (DBQ)	1.06	1.30	.33	.004
Positive Behaviors (DBQ)	3.28	3.65	2.60	.034
Total Average Speed (kmph)	77.38	66.17	13.36**	.151
Average Speed in the First Segment (kmph)	72.97	58.33	16.44**	.180
Average Speed in the Second Segment (kmph)	99.07	86.38	9.18*	.109
Average Speed in the Third Segment (kmph)	75.64	69.48	4.05*	.051
SD of Average Speed in the Third Segment (kmph)	12.29	11.28	.02	.000

*Note. * p<.05; ** p<.01. Adjusted mean scores are used.*

3.4.1 Comparison of Taxi Drivers and Non-Professional Drivers on Risk Acceptance Levels

A one-way analysis of covariance (ANCOVA) was performed to determine a statistically significant difference between taxi drivers and non-professional drivers on risk acceptance levels controlling for total mileage driven in drivers' lifetime. In this purpose, three subscales of AISS were analyzed separately. Firstly, after adjustment of total mileage driven, novelty level of SS was significantly different between taxi drivers and non-professional drivers $(F\ (1, 75) = 5.03, p = < .05, \eta^2 = .06)$.

3.4.2 Comparison of Taxi Drivers and Non-Professional Drivers on Simulated Driver Behaviors

A one-way analysis of covariance (ANCOVA) was performed to determine a statistically significant difference between taxi drivers and non-professional drivers on simulated driving speeds for total mileage driven in drivers' lifetime. According to the results, taxi drivers had significantly higher speeds across the whole scenario $(F\ (1, 75) = 13.36, p < .001, \eta^2 = .15)$, in the first segment of the scenario $(F\ (1, 75) = 16.44, p < .001, \eta 2 = .18)$, in the second segment of the scenario $(F\ (1, 75) = 9.18, p < .05, \eta 2 = .11)$, and in the third segment of the scenario $(F\ (1, 75) = 4.05, p < .05, \eta 2 = .05)$, on driving simulator than non-professional drivers.

Furthermore, non-parametric Mann-Whitney U Test was performed to determine a statistically significant difference between taxi drivers and non-professional drivers on simulated driver behaviors and mistakes. According to the results, taxi drivers $(M = 45.81)$ had significantly higher amount of accidents across the whole scenario than non-professional drivers $(M = 35.19)$, $U= 587.50$, $p = .029$. Taxi drivers $(M = 47.46)$ had significantly higher amount of traffic light tickets in the first segment of the scenario than non-professional drivers $(M = 33.54)$, $U= 521.50$, $p = .006$. Moreover, taxi drivers $(M = 43.50)$ had significantly higher amount of accidents in the third segment of the scenario than non-professional drivers $(M = 37.50)$, $U= 680.00$, $p = .011$. Also, taxi drivers $(M = 46.88)$ had significantly higher amount of overtakes in the third segment of the scenario than non-professional drivers $(M = 34.12)$, $U= 545.00$, $p = .013$.

3.5 Regression Analyses

Due to the limited sample size, hierarchical regression analyses regarding the study variables of the model have been performed for taxi drivers and non-professional drivers together (*N* = 98).

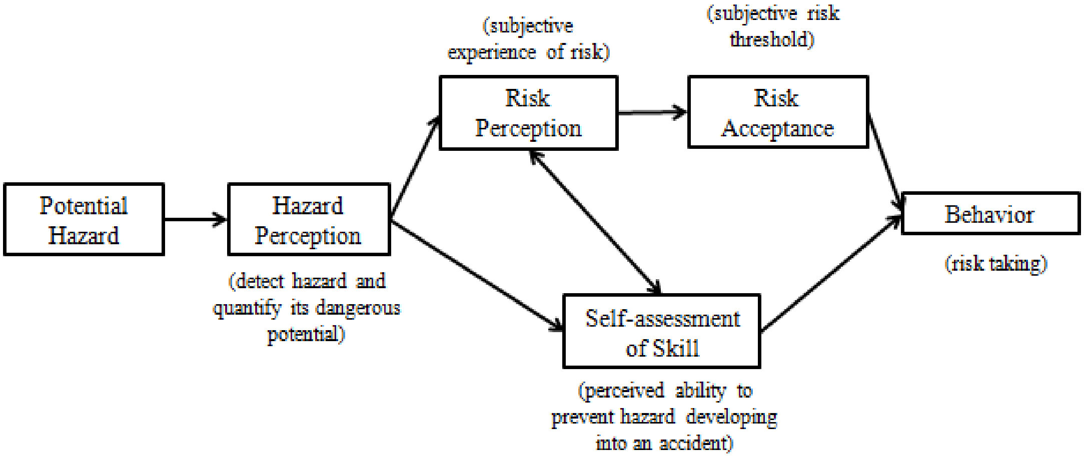

Figure 1 revisited. Risk Perception Model, a revised model of processes underlying driving behavior in response to potential hazards (Deery, 1999).

In all of the analyses presented in this section, groups and the total mileage driven were entered the analysis in the first step as control variables. Hence, when a difference between groups was detected in the Model 1, further regression analyses have been performed for the two groups, separately. Moreover, regression analyses have been repeated for all dependent variables of the study, separately. For example, each subscale of DBQ was included separately in regression analyses for two subscales of DSI and three subscales of AISS due to the limited sample size of the present study.

3.5.1 Hierarchical Regression Analysis Results for Risk Perception

A hierarchical regression analysis was conducted with the related study variable of the proposed model, namely general index of hazard detection as the predictor and with risk perception level as the dependent variable in the analysis. The schematic form of the related hierarchical regression analysis can be seen in Figure 4.

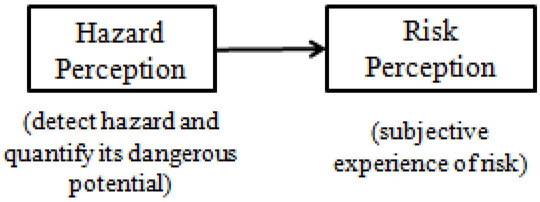

Figure 4. Hierarchical regression analysis for risk perception

Regression analysis has revealed that there was no significant relationship found among participants in regard to risk perception and index of hazard detection.

3.5.2 Hierarchical Regression Analysis Results for Risk Acceptance

A series of hierarchical regression analyses were conducted with the related study variables of the proposed model, namely risk perception, as the predictor and with one of the AISS subscales as the dependent variable in each analysis. The schematic form of the related hierarchical regression analysis can be seen in Figure 5. The detailed information regarding the related regression analyses is represented in Table 3.

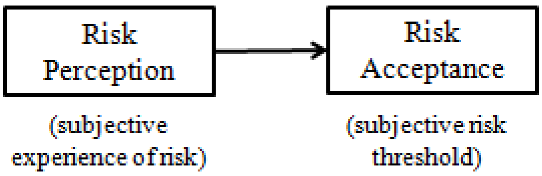

Figure 5. Hierarchical regression analysis for risk acceptance

Firstly, group and total mileage had no significant effect together on novelty scores of participants. When risk perception was entered in the second step *(R^2 = .12, $F(3,74)$ = 3.24, p < .05)*, risk perception explained a significant amount of variance in the novelty scores beyond that explained by the first step. Risk perception *(β= -.22, p < .05)* was found to be significantly negatively related to novelty scores. Moreover, since group differences *(β= .32, p < .05)*, it can be stated that being a non-professional driver is associated with the higher novelty of sensation-seeking than being a taxi driver.

Table 3. Hierarchical Regression Analysis Predicting Risk Acceptance

		Model 1			Model 2		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Novelty (AISS)	Group	.37	.17	.29*	.40	.16	.32*
	Tot. Mileage	.00	.00	.10	.00	.00	.11
	Risk Per.				-.27	.13	-.22*
		F(2-75) = 2.67			F(3-74) = 3.24		
		R^2 = .07			R^2 = .12*		
Intensity (AISS)	Group	.26	.17	.21	.29	.16	.23
	Tot. Mileage	.00	.00	.24	.00	.00	.26
	Risk Per.				-.27	.13	-.23*
		F(2-75) = 1.90			F(3-74) = 2.79		
		R^2 = .05			R^2 = .10*		
Risk-Taking (AISS)	Group	.34	.23	.19	.39	.23	.22
	Tot. Mileage	.00	.00	.23	.00	.00	.25
	Risk Per.				-.47	.18	-.28*
		F(2-75) = 1.67			F(3-74) = 3.47		
		R^2 = .04			R^2 = .12*		

*p < .05; **p < .01, ***p < .001

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, no significant relationship found for novelty; but, stronger relationship found for risk-taking.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. The results revealed that no significant relationship was found in regard to novelty and risk perception in any of the groups after the regression analyses.

Secondly, group and total mileage had no significant effect together on intensity scores of participants. When risk perception was entered in the second step *(R^2 = .10, F(3,74) = 2.79, p < .05)*, risk perception explained a significant amount of variance in the intensity scores beyond that explained by the first step. Risk perception *(β= -.23, p < .05)* was found to be significantly negatively related to intensity scores.

Finally, group and total mileage had no significant effect together on risk-taking scores of participants. When risk perception was entered in the second step *(R^2 = .12, F(3,74) = 2.44, p < .05)*, risk perception explained a significant amount of variance in the risk-taking scores beyond that explained by the first step. Risk perception *(β= -.29, $p < .05$)* was found to be significantly negatively related to risk-taking scores.

3.5.3 Hierarchical Regression Analysis Results for Self-assessed Driving Skill

A series of hierarchical regression analyses were conducted with the related study variable of the proposed model, namely general index of hazard detection as the predictor and with one of the two DSI subscales as the dependent variable in each analysis. The schematic form of the related hierarchical regression analysis can be seen in Figure 6. The detailed information regarding the related regression analysis is represented in Table 4.

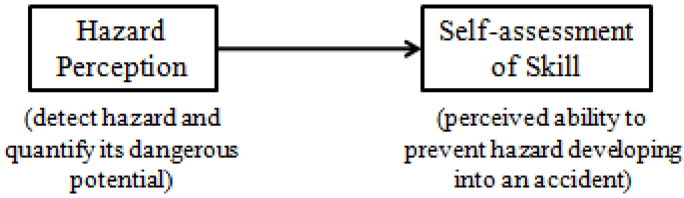

Figure 6. Hierarchical regression analysis for self-assessed driving skill

Table 4. Hierarchical Regression Analysis Predicting Self-assessed Driving Skills

		Model 1			Model 2		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Perceptual Motor Skills (DSI)	Group	-.25	.13	-.24	-.19	.13	-.18
	Tot. Mileage	.00	.00	.22	.00	.00	-.23
	Hazard Index				-.01	.01	-.24*
		F(2-75) = 7.33***			F(3-74) = 6.93***		
		R^2 = .16***			R^2 = .22***		

*p < .05; **p < .01, ***p < .001

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, stronger relationship found for perceptual-motor skills.

Firstly, there was no significant relationship found between participants in regard to safe driving skills and index of hazard detection after the regression analyses. Secondly, after group and total mileage were controlled in the first step *(R^2 = .16, $F(2,75) = 7.33$, $p < .001$)*, index of hazard detection was entered in the second step explained a significant amount of variance in the perceptual motor skills beyond that explained by the first step *(R^2 = .22, $F(3,74)$ = 6.93, p < .001)*. Index of hazard detection *(β= -.24, p < .05)* was found to be significantly negatively predicted perceptual motor skills.

3.5.4 Hierarchical Regression Analysis Results for Self-Reported Driver Behaviors

A series of hierarchical regression analyses were conducted separately with a group of study variables proposed in the model, namely two subscales of DSI (perceptual motor skills, safe driving skills) and three subscales of AISS (novelty of SS, intensity of SS, risk-taking score of SS) as the predictors and with one of the DBQ subscales as the dependent variable in each analysis. The schematic form of the related hierarchical regression analysis can be seen in Figure 7. The detailed information regarding the related regression analysis is represented in Table 5.

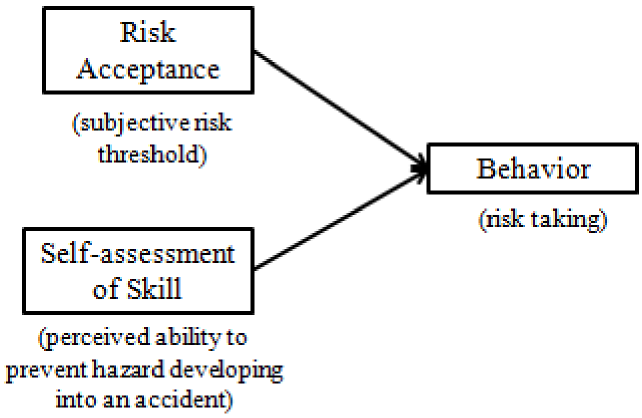

Figure 7. Hierarchical regression analysis for self-reported driving behavior

Firstly, after group and total mileage were controlled in the first step *(R^2 = .11, $F(2,75)$ = 4.72, p < .05)*, DSI subscales were entered in the second step *(R^2 = .24, $F(4,73)$ = 5.74, p < .001)*. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to lapses and DSI subscales after the regression analyses. When the same procedure was repeated for AISS subscales, similar results were found. After group and total mileage were controlled in the first step *(R^2 = .11, $F(2,75)$ = 4.72, p < .05)*, DSI subscales were entered in the second step *(R^2 = .16, $F(5,72)$ = 2.63, p < .05)*. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to lapses and AISS subscales after the regression analyses.

Table 5. Hierarchical Regression Analysis Predicting Self-Reported Driver Behavior

		Model 1			**Model 2**		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Errors (DBQ)	Group	-.22	.15	-.21	-.25	.15	-.23
	Tot. Mileage	.00	.00	-.14	.00	.00	-.12
	Safe Dri. Skills				-.28	.14	-.28*
	Per. Mot. Skills				.04	.15	.04
		F(2-75) = 1.24			F4-73) =1.95		
		R^2 = .03			R^2 = .10		
Errors (DBQ)	Group	-.23	.15	-.21	-.32	.15	-.30
	Tot. Mileage	.00	.00	-.14	.00	.00	-.20
	Novelty				.16	.13	.19
	Intensity				.26	.12	.30*
	Risk-Taking				-.10	.10	-.16
		F(2-75) = 1.24			F(5-72) = 2.28		
		R^2 = .03			R^2 = .14		
Ordinary Violations (DBQ)	Group	.11	.20	.08	.19	.17	.13
	Tot. Mileage	.00	.00	-.16	.00	.00	-.20
	Safe Dri. Skills				-.95	.16	-.68***
	Per. Mot. Skills				.72	.17	.51***
		F(2-75) = 1.74			F(4-73) = 10.28		
		R^2 = .04			R^2 = .36***		
Aggressive Violations (DBQ)	Group	.34	.25	.18	.48	.24	.26*
	Tot. Mileage	.00	.00	.03	.00	.00	-.03
	Safe Dri. Skills				-.78	.23	-.43***
	Per. Mot. Skills				.87	.25	.49***
		F(2-75) = 1.06			F(4-73) = 4.50		
		R^2 = .03			R^2 = .20**		
Aggressive Violations (DBQ)	Group	.34	.25	.18	.17	.25	.09
	Tot. Mileage	.00	.00	.03	.00	.00	-.03
	Novelty				.24	.23	.16
	Intensity				.46	.21	.31*
	Risk-Taking				-.13	.17	-.12
		F(2-75) =1.06			F(5-72) = 2.31		
		R^2 = .03			R^2 = .14		

*$p < .05$; **$p < .01$, ***$p < .001$

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, no significant relationship found for errors; but, significant relationship found between positive driver behaviors and safe driving skills.

Secondly, while group and total mileage driven have no effect on errors, it was found that one study variable significantly predicted errors although no significant relationships appeared in the model 2, too. Safe driving skills *(β= -.28, $p < .05$)* were found to be significantly negatively related to error scores of participants. When the same procedure was repeated for AISS subscales, the following results were found. Although group and total mileage driven have no effect on errors, it was found that one study variable significantly predicted errors although no significant relationships appeared in the model 2, too. The intensity of AISS *(β= .30, $p < .05$)* was found to be significantly positively related to error scores of participants.

Thirdly, group and total mileage had no significant effect together on ordinary violation scores of participants. When the two subscales of DSI were entered in the second step *(R^2 = .36, $F(4,73)$ = 10.28, $p < .001$)*, both subscales explained a significant amount of variance in ordinary violation scores beyond that explained by the first step. Safe driving skills *(β= -.68, $p < .001$)* were found to be significantly negatively related to ordinary violation scores; while perceptual motor skills *(β= .51, $p < .001$)* significantly positively predicted ordinary violations. When the same procedure was repeated for AISS subscales, the following results were found. Although group and total mileage had no significant effect together on ordinary violation scores of participants. When the three subscales of AISS were entered in the second step *(R^2 = .21, $F(5,72)$ = 3.76, $p < .05$)*, AISS subscales explained a significant amount of variance in ordinary violation scores beyond that explained by the first step. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to ordinary violations and AISS subscales after the regression analyses.

Fourthly, group and total mileage had no significant effect together on aggressive violation scores of participants. When the two subscales of DSI were entered in the second step *(R^2 = .20, $F(4,73)$ = 4.50, $p < .05$)*, both subscales explained a significant amount of variance in aggressive violation scores beyond that explained by the first step. Safe driving skills *(β= -.43, $p < .001$)* were found to be significantly negatively related to aggressive violation scores; while perceptual motor skills *(β= .49, $p < .001$)* significantly positively predicted aggressive violations. When the same procedure was repeated for AISS subscales, the following results were found. Although group and total mileage driven have no effect on errors, it was found that one study variable significantly predicted aggressive violations although no significant relationships appeared in the model 2, too. The intensity of AISS *(β= .31, p < .05)* was found to be significantly positively related to aggressive violation scores of participants.

Finally, group and total mileage had no significant effect together on positive driver behaviors of participants. When DSI subscales were entered in the second step *(R^2 = .18, $F(4,73)$ = 4.10, p < .05)*. DSI subscales explained a significant amount of variance in positive driver behavior scores beyond that explained by the first step. When the unique effects were investigated, regression analysis has revealed that there was no significant relationship found among participants in regard to positive driver behavior and two subscales of DSI after the regression analyses. When the same procedure was repeated for AISS subscales, regression analysis has revealed that there was no significant relationship found among participants in regard to positive driver behavior and three subscales of AISS after the regression analyses.

3.5.5 Hierarchical Regression Analysis Results for Simulated Driver Behaviors

A series of hierarchical regression analyses were conducted separately with a group of study variables proposed in the model, namely two subscales of DSI and three subscales of AISS as the predictors and with one of the driving simulator results as the dependent variable in each analysis. The schematic form of the related hierarchical regression analysis can be seen in Figure 8. The detailed information regarding the related regression analysis is presented in Table 6.

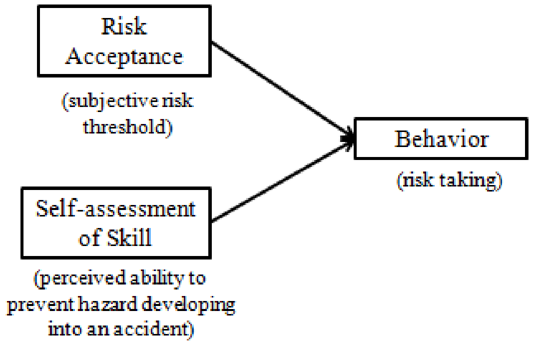

Figure 8. Hierarchical regression analysis for simulated driving behavior

Table 6. Hierarchical Regression Analysis Predicting Simulated Driver Speeds

		Model 1			Model 2		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Total Average Velocity	Group	-11.07	3.03	-.45***	-9.83	2.85	-.40***
	Total Mileage	.00	.00	.01	.00	.00	-.03
	Safe Dri. Skill				-10.54	2.75	-.44***
	Per. Mot. Skill				9.38	2.94	.40**
		F(2-75) = 9.64			F(4-73) = 9.84		
		R^2 = .20***			R^2 = .35***		
Average Velocity in Segment 1	Group	-14.66	3.62	-.49***	-13.29	3.48	-.44***
	Total Mileage	.00	.00	.00	.00	.00	-.04
	Safe Dri. Skills				-10.92	3.36	-.38**
	Per. Mot. Skill				10.07	3.59	.35**
		F(2-75) = 11.52			F(4-73) = 9.54		
		R^2 = .24***			R^2 = .34***		
Average Velocity in Segment 2	Group	-12.69	4.19	-.38**	-10.92	3.89	-.33**
	Total Mileage	.00	.00	.00	.00	.00	-.04
	Safe Dri. Skills				-15.27	3.76	-.48***
	Per. Mot. Skill				13.49	4.02	.43***
		F(2-75) = 6.45			F(4-73) = 8.50		
		R^2 = .15**			R^2 = .32***		
Average Velocity in Segment 3	Group	-5.56	2.76	-.26*	-4.54	2.65	-.22
	Total Mileage	.00	.00	.05	.00	.00	.02
	Safe Dri. Skills				-8.67	2.56	-.43***
	Per. Mot. Skill				7.71	2.73	.38**
		F(2-75) = 3.57			F(4-73) = 5.24		
		R^2 = .09*			R^2 = .22***		
Standard Deviation of Average Velocity in Segment 3	Group	-.18	1.23	-.02	.12	1.24	.01
	Total Mileage	.00	.00	.17	.00	.00	.15
	Safe Dri. Skills				-2.46	1.20	-.28*
	Per. Mot. Skill				2.22	1.28	.26
		F(2-75) = 1.26			F(4-73) = 1.84		
		R^2 = .03			R^2 = .09		
Standard Deviation of Average Velocity in Segment 3	Group	-.18	1.23	-.02	-1.04	1.24	-.11
	Total Mileage	.00	.00	.17	.00	.00	.15
	Novelty				2.55	1.12	.35*
	Intensity				.13	1.01	.02
	Risk-Taking				-.36	.84	-.07
		F(2-75) = 1.26			F(5-72) = 2.10		
		R^2 = .03			R^2 = .13		

*$p < .05$; **$p < .01$, ***$p < .001$

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, no significant change occurred among the relationships between driving simulator variables and other study variables.

As mentioned earlier, eight data regarding driving simulator has not been included in the analysis and hence regression analyses were performed and presented for speeding behavior and driver mistakes in driving simulator as follows: total average velocity; average velocity in the first segment, in the second segment and in the third segment; standard deviation of average velocity in the third segment as speeding behavior; total number of accidents, number of accidents in the first segment, number of traffic light tickets in the first segment, number of accidents in the third segment and number of overtakes in the third segment for driver mistakes.

Firstly, after group and total mileage were controlled in the first step *(R^2 = .20, F(2,75) = 9.64, p < .001)*, DSI subscales were entered in the second step *(R^2 = .35, F(4,73) = 9.84, p < .001)*. When the unique effects were investigated, both subscales explained a significant amount of variance in total average speed scores beyond that explained by the first step. Safe driving skills *(β= -.44, p < .001)* were found to be significantly negatively related to total average speed scores; while perceptual motor skills *(β= .40, p < .01)* significantly positively predicted total average speed. Moreover, since group differences *(β= -.45, p < .001)*, it can be stated that being a taxi driver is associated with higher average speed than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on the average driving speed in the whole scenario, it was found that both subscales of DSI significantly predicted average driving speed *(R^2 = .35, F(3,36) = 6.54, p < .001)* among the study variables. Safe driving skills *(β= -.88, p < .001)* was found to be significantly negatively related to average driving speed, while perceptual motor skills *(β= .78, p < .001),* was found to be significantly positively related to average driving speed among taxi drivers sample. On the other hand, there was no significant relationship observed among non-professional drivers in regard to average driving speed and abovementioned study variables of the model.

When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step *(R^2 = .29, F(5,72) = 5.99, p < .001)*, AISS subscales explained a significant amount of variance in average driving speed in the whole scenario beyond that explained by the first step. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to average driving speed and AISS subscales after the regression analyses. Moreover, since group differences appeared in the abovementioned analysis, hierarchical regression analyses were repeated for AISS scores of the two groups separately, too. The results revealed that no significant relationship was found in regard to average driving speed and three subscales of AISS in any of the groups after the regression analyses.

Secondly, after group and total mileage were controlled in the first step *(R^2 = .24, $F(2,75)$ = 11.52, p < .001)*, DSI subscales were entered in the second step *(R^2 = .34, $F(4,73)$ = 9.84, p < .001)*. When the unique effects were investigated, both subscales explained a significant amount of variance in average speed in the first segment scores beyond that explained by the first step. Safe driving skills *(β= -.39, p < .01)* were found to be significantly negatively related to average speed in the first segment scores; while perceptual motor skills *(β= .35, p < .01)* significantly positively predicted average speed in the first segment. Moreover, since group differences *(β= -.49, p < .001)*, it can be stated that being a taxi driver is associated with higher average speed in the first segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on average speed in the first segment, it was found that both subscales of DSI significantly predicted average speed in the first segment *(R^2 = .28, $F(3,36)$ = 4.74, p < .05)* among the study variables. Safe driving skills *(β= -.78, p < .001)* was found to be significantly negatively related to average speed in the first segment, while perceptual motor skills *(β= .72, p < .01),* was found to be significantly positively related to average speed in the first segment among taxi drivers sample. On the other hand, there was no significant relationship observed among non-professional drivers in regard to average speed in the first segment and abovementioned study variables of the model.

When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step *(R^2 =

.31, F(5,72) = 6.39, p < .001), AISS subscales explained a significant amount of variance in average speed in the first segment beyond that explained by the first step. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to average speed in the first segment and AISS subscales after the regression analyses. Moreover, since group differences appeared in the abovementioned analysis, hierarchical regression analyses were repeated for AISS scores of the two groups separately, too. The results revealed that no significant relationship was found in regard to average speed in the first segment and three subscales of AISS in any of the groups after the regression analyses.

Thirdly, after group and total mileage were controlled in the first step ($R^2 = .15$, $F(2,75) = 6.45$, $p < .01$), DSI subscales were entered in the second step ($R^2 = .32$, $F(4,73) = 8.50$, $p < .001$). When the unique effects were investigated, both subscales explained a significant amount of variance in average speed in the second segment scores beyond that explained by the first step. Safe driving skills ($\beta = -.48$, $p < .001$) were found to be significantly negatively related to average speed in the second segment scores; while perceptual motor skills ($\beta = .43$, $p < .001$) significantly positively predicted average speed in the second segment. Moreover, since group differences ($\beta = -.38$, $p < .05$), it can be stated that being a taxi driver is associated with higher average speed in the second segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on average speed in the second segment, it was found that both subscales of DSI significantly predicted average speed in the second segment ($R^2 = .33$, $F(3,36) = 5.91$, $p < .05$) among the study variables. Safe driving skills ($\beta = -.85$, $p < .001$) was found to be significantly negatively related to average speed in the second segment, while perceptual motor skills ($\beta = .74$, $p < .001$), was found to be significantly positively related to average speed in the second segment among taxi drivers sample. On the other hand, while total mileage driven by the non-professional drivers has no effect on the average speed in the second segment scores of the participants, it was found that one study variable significantly predicted the average speed in the second segment although no significant relationship appeared in the model 2, too. Perceptual motor skills ($\beta = .35$, $p < .05$) were found to be significantly positively related to average speed in the second segment among non-professional drivers.

When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step *($R^2 = .25$, $F(5,72) = 4.81$, $p < .001$)*, AISS subscales explained a significant amount of variance in average speed in the second segment beyond that explained by the first step. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to average speed in the second segment and AISS subscales after the regression analyses. Moreover, since group differences appeared in the abovementioned analysis, hierarchical regression analyses were repeated for AISS scores of the two groups separately, too. The results revealed that no significant relationship was found in regard to average speed in the second segment and three subscales of AISS in any of the groups after the regression analyses.

Fourthly, after group and total mileage were controlled in the first step *($R^2 = .09$, $F(2,75) = 3.57$, $p < .05$)*, DSI subscales were entered in the second step *($R^2 = .22$, $F(4,73) = 5.24$, $p < .001$)*. When the unique effects were investigated, both subscales explained a significant amount of variance in average speed in the third segment scores beyond that explained by the first step. Safe driving skills *($\beta = -.43$, $p < .001$)* were found to be significantly negatively related to average speed in the third segment scores; while perceptual motor skills *($\beta = .38$, $p < .01$)* significantly positively predicted average speed in the third segment. Moreover, since group differences *($\beta = -.26$, $p < .05$)*, it can be stated that being a taxi driver is associated with higher average speed in the third segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on average speed in the third segment, it was found that both subscales of DSI significantly predicted average speed in the second segment *(R^2 = .32, F(3,36) = 5.58, p < .05)* among the study variables. Safe driving skills *(β= -.83, p < .001)* was found to be significantly negatively related to average speed in the third segment, while perceptual motor skills *(β= .72, p < .05),* was found to be significantly positively related to average speed in the third segment among taxi drivers sample. On the other hand, there was no significant relationship observed among non-professional drivers in regard to average speed in the third segment and abovementioned study variables of the model.

When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step *(R^2 = .17, F(5,72) = 2.90, p < .05)*, AISS subscales explained a significant amount of variance in average speed in the third segment beyond that explained by the first step. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to average speed in the third segment and AISS subscales after the regression analyses. Moreover, since group differences appeared in the abovementioned analysis, hierarchical regression analyses were repeated for AISS scores of the two groups separately, too. The results revealed that no significant relationship was found in regard to average speed in the second segment and three subscales of AISS in any of the groups after the regression analyses.

Lastly, while group difference and total mileage driven have no effect on the standard deviation of average velocity in the third segment, it was found that one study variable significantly predicted the standard deviation of average velocity in the third segment although no significant relationship appeared in the model 2, too. Safe driving skills *(β= -.28, p < .05)* were found to be significantly negatively related to the standard deviation of average velocity in the third segment. When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step, AISS subscales did not explain a significant amount of variance in the standard deviation of average velocity in the third segment. However, when the unique effects were investigated, novelty scores *(β= .35, p < .05)* were found to be significantly positively related to the standard deviation of average velocity in the third segment.

After performing series of hierarchical regression analysis for the speeding data of participants, the same procedure was repeated for the driver mistakes data collected during the simulated driver. The detailed information regarding the related regression analysis is represented in Table 7.

Table 7. Hierarchical Regression Analysis Predicting Simulated Driver Mistakes

		Model 1			**Model 2**		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Number of Accidents in the Scenario	Group	-.42	.26	-.21	-.47	.26	-.24
	Total Mileage	.00	.00	.06	.00	.00	.09
	Safe Dri. Skills				-.54	.25	-.29*
	Per. Mot. Skill				.04	.27	.02
		F(2-75) = 2.51			F(4-73) = 2.87		
		R^2 = .06			R^2 = .14*		
Number of Traffic Light Tickets in Segment 1	Group	-1.04	.39	-.34**	-.89	.39	-.29*
	Total Mileage	.00	.00	.04	.00	.00	.01
	Safe Dri. Skills				-.87	.37	-.30*
	Per. Mot. Skill				.94	.40	.32*
		F(2-75) = 5.79			F(4-73) = 4.87		
		R^2 = .13**			R^2 = .21**		
Number of Accidents in Segment 3	Group	-.17	.09	-.26	-.23	.08	-.35**
	Total Mileage	.00	.00	.01	.00	.00	.10
	Safe Dri. Skills				-.24	.07	-.37**
	Per. Mot. Skill				-.13	.08	-.20
		F(2-75) = 2.88			F(4-73) = 8.47		
		R^2 = .07			R^2 = .32***		
Number of Overtakes in Segment 3	Group	-1.32	.63	-.27*	-1.15	.59	-.23
	Total Mileage	.00	.00	.10	.00	.00	.07
	Safe Dri. Skills				-2.33	.57	-.50***
	Per. Mot. Skill				1.68	.61	.36**
		F(2-75) = 4.60			F(4-73) = 6.96		
		R^2 = .11*			R^2 = .28***		
Number of Overtakes in Segment 3	Group	-1.32	.63	-.27*	-1.76	.64	-.36**
	Total Mileage	.00	.00	.10	.00	.00	.08
	Novelty				1.32	.58	.34*
	Intensity				.14	.52	.03
	Risk-Taking				-.26	.44	-.09
		F(2-75) = 4.60			F(4-73) = 3.45		
		R^2 = .11*			R^2 = .19**		

*p < .05; **p < .01, ***p < .001

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, no significant relationship found for number of accidents in segment 3.

Firstly, group and total mileage had no significant effect together on total accidents scores in the simulation. When the two subscales of DSI were entered in the second step *(R^2 = .14, F(3,74) = 2.87, p < .05)*, they explained a significant amount of variance in total accidents scores beyond that explained by the first step. Safe driving skills *(β= -.29, p < .05)* were found to be significantly negatively related to total accidents scores in the simulation. When the same procedure was repeated for AISS subscales, regression analysis has revealed that there was no significant relationship found among participants in regard to total accidents scores in the simulation and three subscales of AISS after the regression analyses.

Secondly, regression analysis has revealed that there was no significant relationship found among participants in regard to DSI subscales and number of accidents in the first segment of the scenario. When the same procedure was repeated for AISS subscales, regression analysis has revealed that there was also no significant relationship found among participants in regard to a number of accidents in the first segment of the scenario and three subscales of AISS.

Thirdly, after group and total mileage were controlled in the first step *(R^2 = .13, F(2,75) = 5.79, p < .05)*, DSI subscales were entered in the second step *(R^2 = .21, F(4,73) = 4.87, p < .05)*. When the unique effects were investigated, both subscales explained a significant amount of variance in traffic light tickets in the first segment scores beyond that explained by the first step. Safe driving skills *(β= -.30, p < .05)* were found to be significantly negatively related to traffic light tickets in the first segment; while perceptual motor skills *(β= .32, p < .05)* significantly positively predicted traffic light tickets in the first segment. Moreover, since group differences *(β= -.34, p < .05)*, it can be stated that being a taxi driver is associated with higher traffic light tickets in the first segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by taxi drivers has no effect on traffic light tickets in the first segment, it was found that both study variables significantly predicted the traffic light tickets in the first segment although no significant relationship appeared in the model 2, too. Safe driving skills *(β= -.57, p < .05)* was found to be significantly negatively related to traffic light tickets in the first segment, while perceptual motor skills *(β= .59, p < .05),* was found to be significantly positively related to traffic light tickets in the first segment among taxi drivers sample. On the other hand, there was no significant relationship observed among non-professional drivers in regard to traffic light tickets in the first segment and abovementioned study variables of the model.

When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step *(R^2 = .19, $F(5,72)$ = 3.37, p < .05)*, AISS subscales explained a significant amount of variance in traffic light tickets in the first segment beyond that explained by the first step. When the unique effects were investigated, it was found that there was no significant relationship found among participants in regard to traffic light tickets in the first segment and AISS subscales after the regression analyses. Moreover, since group differences appeared in the abovementioned analysis, hierarchical regression analyses were repeated for AISS scores of the two groups separately, too. The results revealed that no significant relationship was found in regard to traffic light tickets in the first segment and three subscales of AISS in any of the groups after the regression analyses.

Fourthly, group and total mileage had no significant effect together on a number of accidents in the third segment of driving simulation. When the two subscales of DSI were entered in the second step *(R^2 = .32, $F(3,74)$ = 8.47, p < .001)*, they explained a significant amount of variance in a number of accidents in the third segment beyond that explained by the first step. Safe driving skills *(β= -.37, p < .01)* were found to be significantly negatively related to a number of accidents in the third segment in the simulation. When the same procedure was repeated for AISS subscales, regression analysis has revealed that there was no significant relationship found among participants in regard to a number of accidents in the third segment and three subscales of AISS.

Lastly, after group and total mileage were controlled in the first step *(R^2 = .11, $F(2,75)$ = 4.60, p < .05)*, DSI subscales were entered in the second step *(R^2 = .28,*

$F(4,73) = 6.96, p < .001)$. When the unique effects were investigated, both subscales explained a significant amount of variance in a number of overtakes in the third segment beyond that explained by the first step. Safe driving skills *(β= -.50, $p < .001$)* were found to be significantly negatively related to a number of overtakes in the third segment; while perceptual motor skills *(β= .36, $p < .01$)* significantly positively predicted the number of overtakes in the third segment. Moreover, since group differences *(β= -.27, $p < .05$)*, it can be stated that being a taxi driver is associated with higher number of overtakes in the third segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by taxi drivers has no effect on the number of overtakes in the third segment, it was found that both study variables significantly predicted number of overtakes in the third segment *(R^2 = .36, $F(3,36) = 6.87, p < .001$)*. Safe driving skills *(β= -.89, $p < .000$)* was found to be significantly negatively related to number of overtakes in the third segment, while perceptual motor skills *(β= .71, $p < .001$),* was found to be significantly positively related to number of overtakes in the third segment among taxi drivers sample. On the other hand, there was no significant relationship observed among non-professional drivers in regard to the number of overtakes in the third segment and abovementioned study variables of the model.

When the same procedure was repeated for AISS subscales, the following results were found. When the three subscales of AISS were entered in the second step, AISS subscales *(R^2 = .19, $F(2,75) = 3.45, p < .05$)* explained a significant amount of variance in the number of overtakes in the third segment. When the unique effects were investigated, novelty scores *(β= .34, $p < .05$)* were found to be significantly positively related to the number of overtakes in the third segment. Moreover, since group differences appeared in the abovementioned analysis, hierarchical regression analyses were repeated for AISS scores of the two groups separately, too. The results revealed that no significant relationship was found in regard to the number of overtakes in the third segment and three subscales of AISS in any of the groups after the regression analyses.

3.5.6 Mediated Regression Analysis of the Model

After hierarchical regression analyses, the results revealed that some of the study variables may form mediations. In this purpose, meditational relationships were tested with significant variables using Baron and Kenny (1986) steps. Mediation analyses showed that there are three mediations across the model as among risk perception, the intensity of sensation-seeking and self-reported driving errors; risk perception, the intensity of AISS and self-reported aggressive violations; and risk perception; the novelty of AISS and number of overtakes in driving simulations.

To start with, after conducting regression analyses between risk perception and intensity of AISS, and intensity of AISS and self-reported driving errors; another regression analysis was performed between risk perception levels and self-reported driving errors. While group and total mileage driven have no effect on errors, it was found that risk perception significantly predicted errors although no significant relationships appeared in the model 2, too.

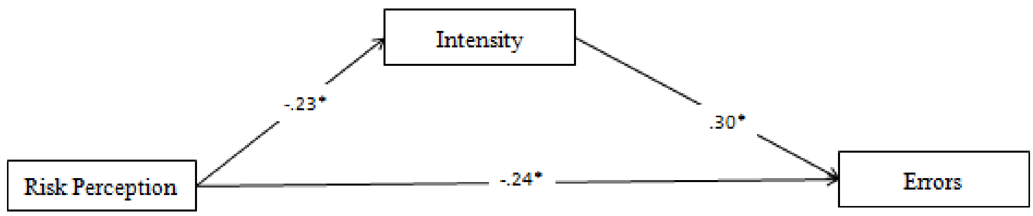

Figure 9. Mediated Regression Analysis of Errors

Risk perception *(β= -.24, p < .05)* was found to be significantly negatively related to error scores of participants. In the last step, risk perception and intensity of AISS were entered both to see the effect on errors scores and the effect of risk perception on errors were significant after controlling the effect of intensity of AISS *(R^2 = .15, $F(4,73)$ = 3.14, p < .05)*. The result of the final analysis showed that the mediation effect was partial. For the last step, Sobel test was performed. The result of Sobel Test was not significant. The schematic form of the related mediated regression analysis can be seen in Figure 9.

Secondly, after conducting regression analyses between risk perception and intensity of AISS, and intensity of AISS and self-reported aggressive violations; another regression analysis was performed between risk perception and self-reported aggressive violations. While group and total mileage driven have no effect on errors, it was found that risk perception significantly predicted aggressive violations in the second step *(R^2 = .16, F(3,74) = 4.67, p < .01)*.

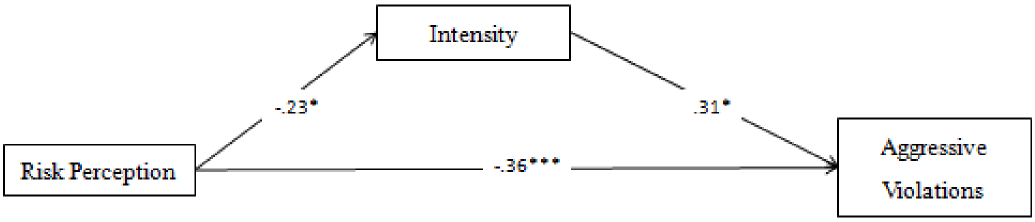

Figure 10. Mediated Regression Analysis of Aggressive Violations

Risk perception *(β= -.36, p < .001)* was found to be significantly negatively related to self-reported aggressive violations scores of participants. In the last step, risk perception and intensity of AISS were entered both to see the effect on self-reported aggressive violations scores and the effect of risk perception on self-reported aggressive violations were significant after controlling the effect of intensity of AISS *(R^2 = .21, F(4,73) = 4.93, p < .001)*. The result of the final analysis showed that the mediation effect was partial. For the last step, Sobel test was performed. The result of Sobel Test was not significant. The schematic form of the related mediated regression analysis can be seen in Figure 10.

Finally, after conducting regression analyses between risk perception and novelty of AISS, and novelty of AISS and number of overtakes in the driving simulator; another regression analysis was performed between risk perception and the number of overtakes in the driving simulator. After group and total mileage were controlled in the first step *(R^2 = .11, F(2,75) = 4.60, p < .05)*, it was found that risk perception significantly predicted number of overtakes *(R^2 = .21, F(3,74) = 6.36, p < .001)*.

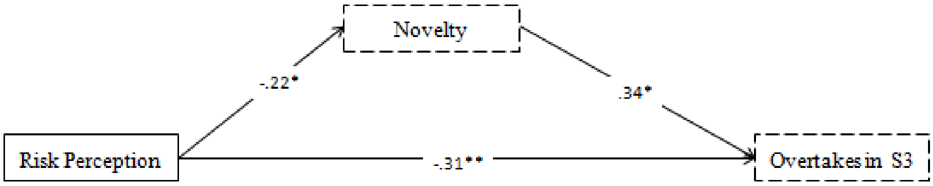

Figure 11. Mediated Regression Analysis of Overtakes in the third segment

Risk perception *(β= -.31, p < .01)* was found to be significantly negatively related to the number of overtakes in the driving simulator. In the last step, risk perception and novelty of SS were entered both to see the effect on number of overtakes in driving simulator and the effect of risk perception on number of overtakes in driving simulator were significant after controlling the effect of novelty of AISS ($R^2 = .25$, $F(4,73) = 6.15$, $p < .001$). The result of the final analysis showed that the mediation effect was partial. For the last step, Sobel test was performed. The result of Sobel Test was not significant. Moreover, since group differences *(β= -.27, p < .05)*, it can be stated that being a taxi driver is associated with higher number of overtakes in the third segment than being a non-professional driver. The schematic form of the related mediated regression analysis can be seen in Figure 11.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. The results revealed that no mediation was found among novelty, risk perception and the number of overtakes in the third segment in any of the groups after the regression analyses.

3.5.7 Regression between Self-Reported Driver Behaviors and Simulated Driver Behaviors

A series of hierarchical regression analyses were also conducted with self-reported driver behaviors, namely lapses, errors, ordinary violations, aggressive violations and positive driver behavior, as the predictors and with one of the driving simulator results as the dependent variable in each analysis. The detailed information regarding the related regression analysis is presented in Table 8.

Firstly, after group and total mileage were controlled in the first step ($R^2 = .20$, $F(2,75) = 9.64$, $p < .001$), DBQ subscales were entered in the second step ($R^2 = .48$,

$F(7,70) = 9.07$, $p < .001$). When the unique effects were investigated, one subscale explained a significant amount of variance in total average speed scores beyond that explained by the first step. Ordinary violations *($\beta= .40$, $p < .001$)* were found to be significantly positively related to total average speed scores. Moreover, since group differences *($\beta= -.45$, $p < .001$),* it can be stated that being a taxi driver is associated with higher total average speed scores than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on the average driving speed in the whole scenario, it was found that one DBQ subscale significantly predicted average driving speed *($R^2 = .38$, $F(6,33) = 3.31$, $p < .05$)* among the study variables. Ordinary violations *($\beta= .49$, $p < .05$)* was found to be significantly positively related to average driving speed among taxi drivers sample. Likewise, although total mileage driven by the non-professional drivers have no effect on the average driving speed in the whole scenario, it was found that one DBQ subscale significantly predicted average driving speed *($R^2 = .37$, $F(6,31) = 3.03$, $p < .05$)* among the study variables. Ordinary violations *($\beta= .50$, $p < .01$)* was found to be significantly positively related to average driving speed among non-professional drivers sample.

Secondly, after group and total mileage were controlled in the first step *($R^2 = .24$, $F(2,75) = 11.52$, $p < .001$),* DBQ subscales were entered in the second step *($R^2 = .44$, $F(7,70) = 7.90$, $p < .001$).* When the unique effects were investigated, one subscale explained a significant amount of variance in average speed in the first segment scores beyond that explained by the first step. Ordinary violations *($\beta= .34$, $p < .01$)* were found to be significantly positively related to the average speed in the first segment. Moreover, since group differences *($\beta= -.49$, $p < .001$),* it can be stated that being a taxi driver is associated with higher average speed in the first segment than being a non-professional driver.

Table 8. Hierarchical Regression Analysis, the DBQ Subscales Predicting Simulated Driver Speeds

		Model 1			Model 2		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Total Average Velocity	Group	-11.07	3.03	-.45***	-12.52	2.74	-.51***
	Total Mileage	.00	.00	.01	.00	.00	.09
	Lapses				4.72	2.56	.19
	Errors				-1.88	2.28	-.08
	Ord. Violat.s				6.70	1.93	.40***
	Agg. Violat.s				1.24	1.43	.09
	Pos. Behaviors				-2.50	1.44	-.16
		$F(2\text{-}75) = 9.64$			$F(7\text{-}70) = 9.07$		
		$R^2 = .20$***			$R^2 = .48$***		
Average Velocity in Segment 1	Group	-14.66	3.62	-.49***	-15.67	3.44	-.52***
	Total Mileage	.00	.00	.00	.00	.00	.06
	Lapses				3.28	3.22	.11
	Errors				1.24	2.87	-.04
	Ord. Violats				6.93	2.42	.34**
	Agg. Violat.s				1.75	1.80	.11
	Pos. Behaviors				-3.34	1.81	-.17
		$F(2\text{-}75) = 11.52$			$F(7\text{-}70) = 7.90$		
		$R^2 = .24$***			$R^2 = .44$***		
Average Velocity in Segment 2	Group	-12.69	4.19	-.38**	-13.71	4.04	-.41***
	Total Mileage	.00	.00	.00	.00	.00	.08
	Lapses				4.07	3.78	.12
	Errors				-1.74	3.37	-.06
	Ord. Violat.s				9.58	2.84	.43***
	Agg. Violat.s				-.13	2.11	-.01
	Pos. Behaviors				-2.99	2.13	-.14
		$F(2\text{-}75) = 6.45$			$F(7\text{-}70) = 5.61$		
		$R^2 = .15$**			$R^2 = .36$***		
Average Velocity in Segment 3	Group	-5.56	2.76	-.26*	-8.12	2.43	-.39***
	Total Mileage	.00	.00	.05	.00	.00	.16
	Lapses				7.36	2.27	.34**
	Errors				-3.39	2.03	-.17
	Ord. Violat.s				5.66	1.71	.39***
	Agg. Violat.s				1.33	1.27	.12
	Pos. Behaviors				-1.06	1.28	-.08
		$F(2\text{-}75) = 3.57$			$F(7\text{-}70) = 7.53$		
		$R^2 = .09$*			$R^2 = .43$***		
Standard Deviation of Average Velocity in Segment 3	Group	-.18	1.23	-.02	-.91	1.25	-.10
	Total Mileage	.00	.00	.17	.00	.00	.20
	Lapses				.926	1.17	.10
	Errors				-.42	1.04	-.05
	Ord. Violat.s				.88	.88	.14
	Agg. Violat.s				1.48	.65	.30*
	Pos. Behaviors				-.29	.66	-.05
		$F(2\text{-}75) = 1.26$			$F(7\text{-}70) = 2.49$		
		$R^2 = .03$			$R^2 = .20$*		

*$p < .05$; **$p < .01$, ***$p < .001$

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, no significant relationship found for total average velocity in the driving simulator.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. While group difference and total mileage driven have no effect on the average speed in the first segment among taxi drivers, it was found that one study variable significantly predicted the average speed in the first segment although no significant relationship appeared in the model 2, too. Ordinary violations *(β= .51, $p < .05$)* were found to be significantly positively related to the average speed in the first segment among taxi drivers. Likewise, while group difference and total mileage driven have no effect on the average speed in the first segment among non-professional drivers, it was found that one study variable significantly predicted the average speed in the first segment although no significant relationship appeared in the model 2, too. Ordinary violations *(β= .39, $p < .05$)* were found to be significantly positively related to the average speed in the first segment among non-professional drivers.

Thirdly, after group and total mileage were controlled in the first step *(R^2 = .15, $F(2,75) = 6.45$, $p < .01$)*, DBQ subscales were entered in the second step *(R^2 = .36, $F(7,70) = 5.61$, $p < .001$).* When the unique effects were investigated, one subscale explained a significant amount of variance in average speed in the second segment scores beyond that explained by the first step. Ordinary violations *(β= .43, $p < .001$)* were found to be significantly positively related to average speed in the second segment scores. Moreover, since group differences *(β= -.38, $p < .05$),* it can be stated that being a taxi driver is associated with higher average speed in the second segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. The results revealed that no significant relationship was found in regard to average speed in the second segment and five subscales of DBQ among taxi drivers. On the other hand, while group difference and total mileage driven have no effect on the average speed in the second segment among non-professional drivers, it was found that one study variable significantly predicted the average speed in the second segment although no significant relationship appeared in the model 2, too. Ordinary violations *(β= .54, $p < .01$)* were found to be significantly positively related to the average speed in the first segment among non-professional drivers.

Fourthly, after group and total mileage were controlled in the first step *(R^2 = .09, $F(2,75) = 3.57$, $p < .05$)*, DBQ subscales were entered in the second step *(R^2 = .66, $F(7,70) = 7.53$, $p < .001$)*. When the unique effects were investigated, two subscales explained a significant amount of variance in average speed in the third segment scores beyond that explained by the first step. Ordinary violations *(β= .39, $p < .001$)* and lapses *(β= .34, $p < .01$)* were found to be significantly positively related to average speed in the third segment scores. Moreover, since group differences *(β= -.26, $p < .05$)*, it can be stated that being a taxi driver is associated with higher average speed in the third segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on the average driving speed in the third segment, it was found that one DBQ subscale significantly predicted average driving speed *(R^2 = .43, $F(6,33) = 4.13$, $p < .01$)* among the study variables. Lapses *(β= .41, $p < .05$)* was found to be significantly positively related to average driving speed in the third segment among taxi drivers sample. However, although total mileage driven by the NP drivers have no effect on the average driving speed in the third segment, it was found that one DBQ subscale significantly predicted average driving speed *(R^2 = .43, $F(6,31) = 3.95$, $p < .01$)* among the study variables. Ordinary violations *(β= .52, $p < .01$)* was found to be significantly positively related to average driving speed among non-professional drivers sample.

Lastly, while group difference and total mileage driven have no effect on the standard deviation of average velocity in the third segment, it was found that one study variable significantly predicted the standard deviation of average velocity in the third segment although no significant relationship appeared in the model 2, too. Aggressive violations *(β= .30, $p < .05$)* were found to be significantly positively related to the standard deviation of average velocity in the third segment.

Table 9. Hierarchical Regression Analysis, the DBQ Subscales Predicting Simulated Driver Mistakes

		Model 1			**Model 2**		
	Variables	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Number of Traffic Light Tickets in Segment 1	Group	-1.04	.39	-.34**	-1.16	.39	-.38**
	Total Mileage	.00	.00	.04	.00	.00	.07
	Lapses				.19	.37	.06
	Errors				-.28	.33	-.10
	Ord. Violat.s				.57	.28	.28*
	Agg. Violat.s				.24	.2*	.15
	Pos. Behaviors				-.36	.21	-.18
		F(2-75) = 5.79 R^2 = .13**			F(7-70) = 5.79 R^2 = .29***		
Number of Accidents in Segment 3	Group	-.17	.09	-.26	-.16	.09	-.24
	Total Mileage	.00	.00	.01	.00	.00	.12
	Lapses				.18	.08	.27*
	Errors				.09	.07	.14
	Ord. Violat.s				.08	.06	.18
	Agg. Violat.s				-.04	.05	-.11
	Pos. Behaviors				-.04	.05	-.09
		F(2-75) = 2.88 R^2 = .07			F(7-70) = 3.24 R^2 = .25**		
Number of Overtakes in Segment 3	Group	-1.32	.63	-.27*	-1.42	.62	-.29*
	Total Mileage	.00	.00	.10	.00	.00	.17
	Lapses				.68	.58	.13
	Errors				.33	.52	.07
	Ord. Violat.s				.95	.44	.28*
	Agg. Violat.s				.26	.32	.10
	Pos. Behaviors				-.34	.33	-.11
		F(2-75) = 4.60 R^2 = .11*			F(7-70) = 4.48 R^2 = .31***		

*p < .05; **p < .01, ***p < .001

Note. According to bootstrap results based on 1000 bootstrap samples with 95% confidence interval, no significant relationship found for number of accidents and number of overtakes in segment 3.

After performing series of hierarchical regression analysis for the speeding data of participants, the same procedure was repeated for the driver mistakes data collected during the simulated driver. The detailed information regarding the related regression analyses is presented in Table 9.

Firstly, after group and total mileage were controlled in the first step *(R^2 = .13, $F(2,75) = 5.79$, $p < .05$)*, DBQ subscales were entered in the second step *(R^2 = .29,*

$F(7,70) = 4.10$, $p < .001$). When the unique effects were investigated, one subscale explained a significant amount of variance in traffic light tickets in the first segment beyond that explained by the first step. Ordinary violations *(β= .28, $p < .05$)* were found to be significantly positively related to traffic light tickets in the first segment. Moreover, since group differences *(β= -.34, $p < .05$)*, it can be stated that being a taxi driver is associated with higher traffic light tickets in the first segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. The results revealed that no significant relationship was found in regard to traffic light tickets in the first segment and five subscales of DBQ among taxi drivers. On the other hand, while group difference and total mileage driven have no effect on traffic light tickets in the first segment among NP drivers, it was found that one study variable significantly predicted the average speed in the second segment although no significant relationship appeared in the model 2, too. Errors *(β= -.40, $p < .05$)* were found to be significantly negatively related to traffic light tickets in the first segment among non-professional drivers.

Secondly, group and total mileage had no significant effect together on the number of accidents in the third segment of driving simulation. When DBQ scales were entered in the second step *($R^2 = .25$, $F(7,70) = 3.24$, $p < .01$)*, one subscale explained a significant amount of variance in the number of accidents in the third segment beyond that explained by the first step. Lapses *(β= .27, $p < .05$)* were found to be significantly positively related to the number of accidents in the third segment in the simulation.

Finally, after group and total mileage were controlled in the first step *($R^2 = .11$, $F(2,75) = 4.60$, $p < .05$)*, DBQ subscales were entered in the second step *($R^2 = .31$, $F(7,70) = 4.48$, $p < .001$).* When the unique effects were investigated, one subscale explained a significant amount of variance in the number of overtakes in the third segment beyond that explained by the first step. Ordinary violations *(β= .28, $p < .05$)* were found to be significantly positively related to the number of overtakes in the third segment. Moreover, since group differences *(β= -.27, $p < .05$)*, it can be stated that being a taxi driver is associated with higher number of overtakes in the third segment than being a non-professional driver.

Hierarchical regression analyses for each sample

As appeared in the abovementioned analysis, hierarchical regression analyses were repeated for the two groups separately. Hence, while total mileage driven by the taxi drivers have no effect on the number of overtakes in the third segment, it was found that one DBQ subscale significantly predicted average driving speed *(R^2 = .38, $F(6,33) = 3.42$, $p < .01$)* among the study variables. Lapses *(β= .36, $p < .05$)* was found to be significantly positively related to the number of overtakes in the third segment among taxi drivers sample. On the other hand, while group difference and total mileage driven have no effect on the number of overtakes in the third segment among non-professional drivers, it was found that one study variable significantly predicted the number of overtakes in the third segment although no significant relationship appeared in the model 2, too. Ordinary violations *(β= .48, $p < .05$)* was found to be significantly positively related to the number of overtakes in the third segment among non-professional drivers sample.

Overall Summary

At the end of this part, all significant results for separate hierarchical regression analyses are presented as figures. The significant relationships among study variables that are related to self-reported driver behaviors, simulated driver speeds, and simulated driver mistakes are represented in Figure 12, Figure 13.1 and Figure 13.2, respectively. The significant relationships between self-reported driver behaviors and simulated driver speeds and the significant relationships between self-reported driver behaviors and simulated driver mistakes are represented in Figure 14.1 and Figure 14.2, respectively.

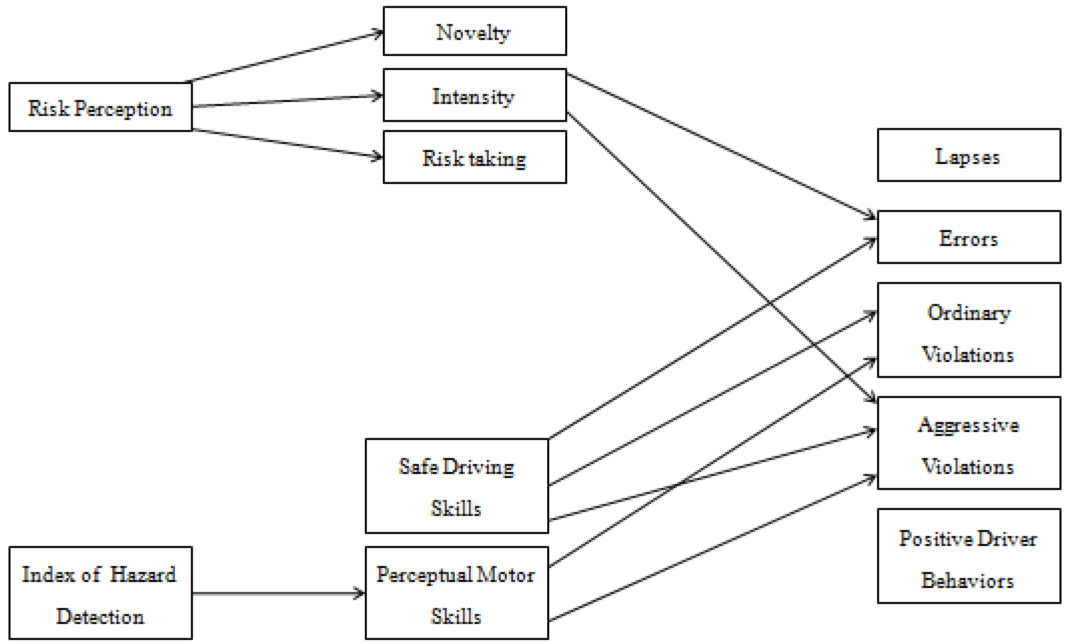

Figure 12. Summary of Hierarchical Regression Analysis for Self-reported Driver Behaviors

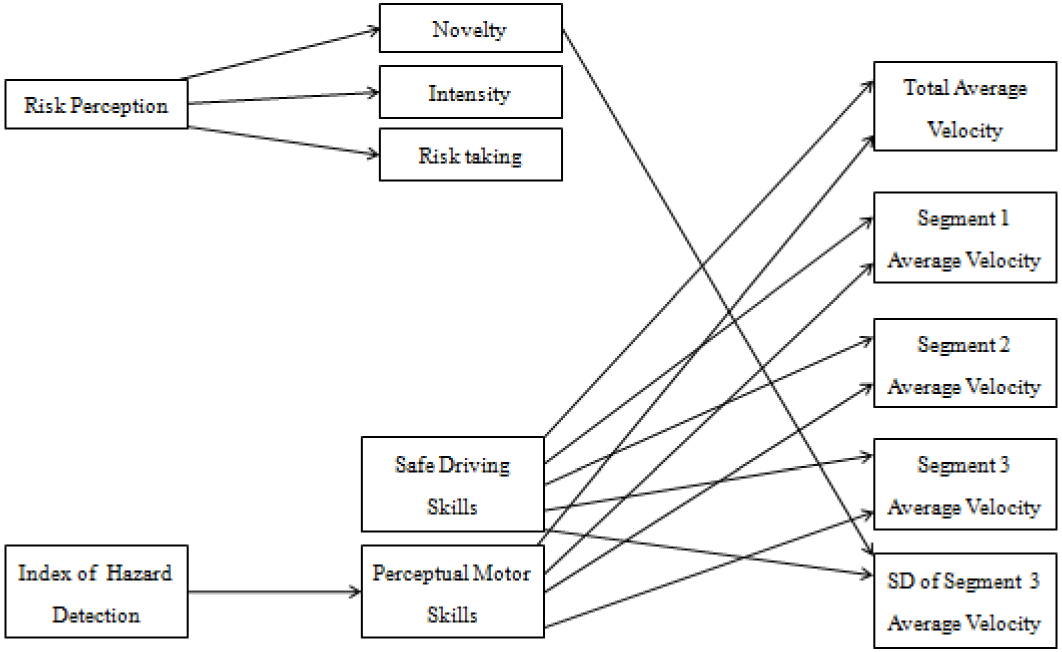

Figure 13.1. Summary of Hierarchical Regression Analysis for Simulated Driver Speeds

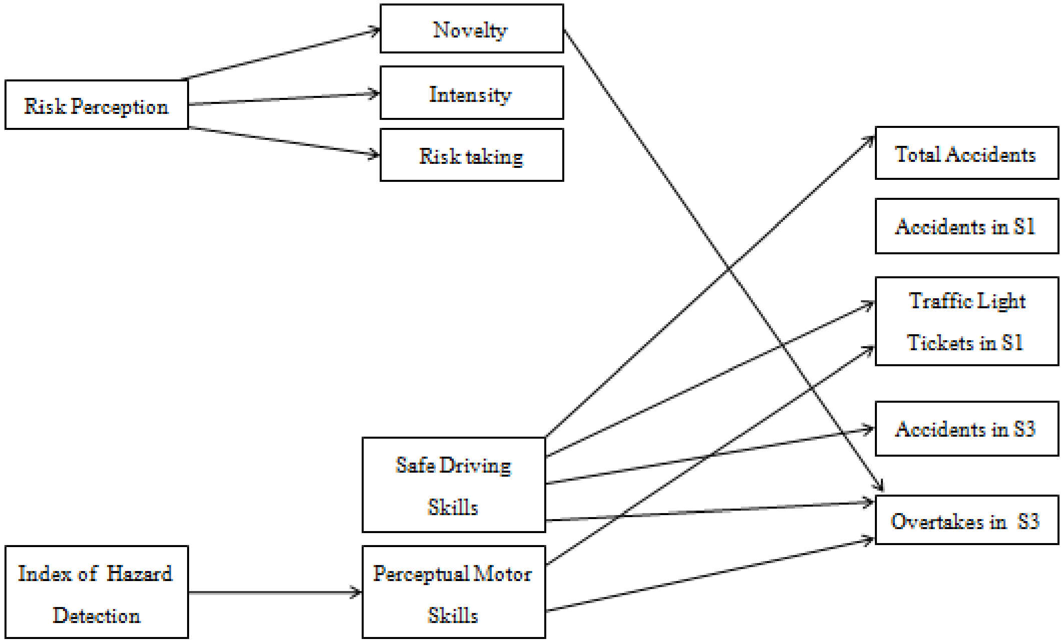

Figure 13.2. Summary of Hierarchical Regression Analysis for Simulated Driver Mistakes

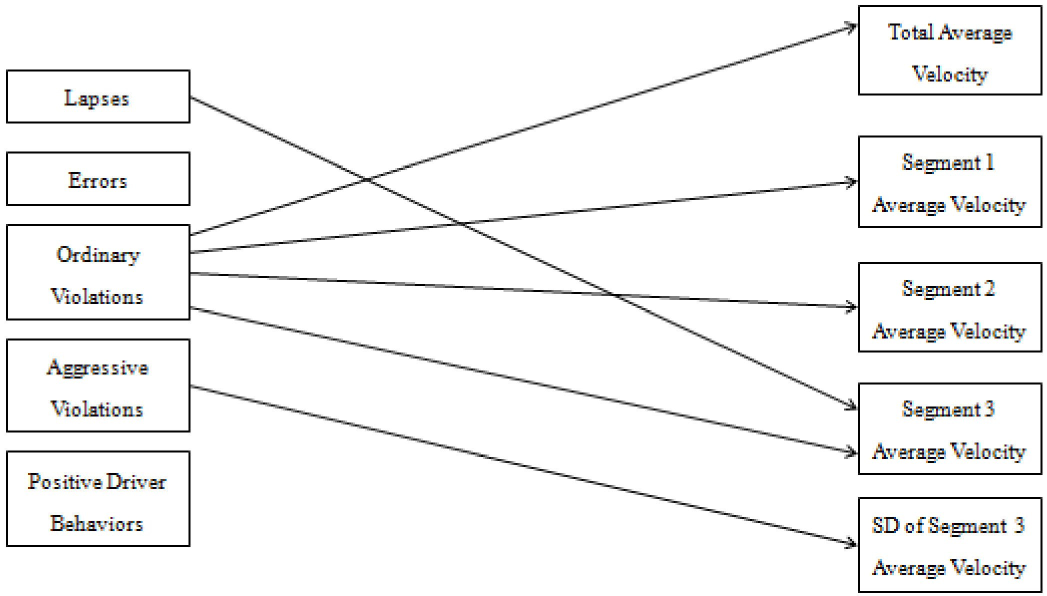

Figure 14.1. Summary of Hierarchical Regression Analysis between Self-reported Driver Behaviors and Simulated Driver Speeds

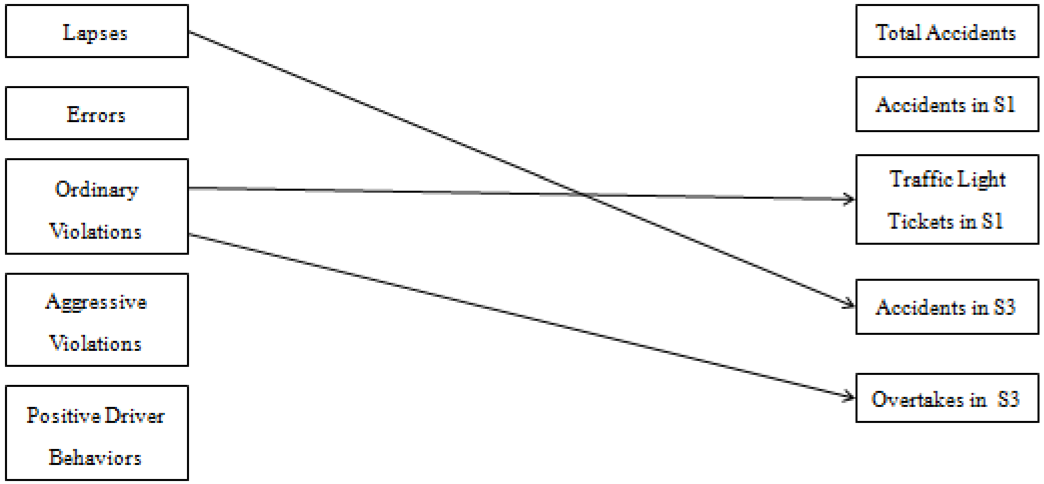

Figure 14.2. Summary of Hierarchical Regression Analysis between Self-reported Driver Behaviors and Simulated Driver Mistakes

CHAPTER IV

DISCUSSION

4.1 Overview

The aim of the current study can be explained in three main aspects. Firstly, it was aimed to investigate the relationships among the components of the model proposed by Deery (1999) by including samples of young male taxi drivers and young male non-professional drivers. Secondly, it was aimed to compare these two groups in regard to the main elements included in the model. In this way, the significance of occupational driving on risky and aberrant driving behaviors in young ages was also investigated. Lastly, it was aimed to make a comparison between self-reported and simulated driver behavior findings obtained through the DBQ and driving simulator.

Before revealing the discussions about the results of the current analyses, two important points can be argued with priority.

Firstly, a relatively small sample size of the study caused several limitations regarding regression analyses; hence, components of the model proposed by Deery (1999) have not been analyzed in one complete analysis. Small sample size of the study can be explained through practical reasons. Since all participants were invited to one specific location and two hours were allocated for each participant to complete not only self-reports but also the driving simulator, the number of participants were decided to be relatively low but adequate for performing overrepresented analyses.

Secondly, one should recall that internal consistency reliability coefficients of error scores in DBQ were calculated to be considerably low for both driver groups. One explanation for that can be invalidity of error items in DBQ when applied to young male driver groups. Participants of both groups may not have a tendency to see the errors presented in DBQ as their errors in traffic and may have their own approaches regarding errors in traffic.

In the following sections, discussions regarding the results of correlation analyses of young male taxi and non-professional drivers, comparisons between these two groups upon the findings of study variables, findings regarding the relationship between self-reported driver behavior and simulated driver behavior, findings regarding the relationship between self-reported driver behavior and other study variables and findings regarding the relationship between simulated driver behavior and other study variables are discussed. Moreover, possible practical implications of the study are presented in related sections.

4.2 Discussion upon Correlation Analyses of Taxi and Non-professional Drivers

According to the results of correlation analyses, as the age increases, risk perception level of taxi drivers increases; whereas, the age of non-professional drivers was only in correlation with their total mileage driven. On the other hand, total mileage driven by non-professional drivers was found to be in parallel with their age. However, as they cover a significant amount of distance, non-professional drivers has reported higher aggressive violations.

Secondly, the results revealed that risk perception level of young male taxi drivers is in parallel with their stabilized speeds in the driving simulator; whereas, the number of overtakes in the driving simulator decreases as their risk perception levels increase. On the other hand, an increase in risk perception level of non-professional drivers is in correlation with less risk-taking attitude, slower speeds, fewer accidents and traffic rule violations at traffic lights in the driving simulator.

Thirdly, as taxi drivers' novel sensations increases, they perform more speeding behaviors and more attempts to overtake in the simulator. Similarly, as non-professional drivers' novel sensations increase, they perform more overtakes. Thus, as correlation analyses reveal, novel sensations are strongly in line with speeding and overtaking behavior for both groups. Furthermore, intense sensations appear to be in a strong relationship with speeding behaviors of taxi drivers, merely. Finally, while the risk-taking attitude of taxi drivers is in correlation with higher speeds and more traffic rule violations; for non-professional drivers, it was found to be in correlation with higher speeds, more overtakes and more accidents in the driving simulator.

Fourthly, as self-assessed safe driving skills increase, risk perception levels also increase for both groups. Moreover, although there is no other relationship occurs for non-professional drivers' safe driving skills; the number of accidents and overtakes diminish and more stabilized speeds are performed as taxi drivers' self-assessed safe driving skills increase. Nevertheless, as taxi drivers' self-assessed perceptual motor skills increase, the number of accidents in countryside segment of the driving simulation increases; for non-professional drivers, as self-assessed perceptual motor skills increase, attempts for overtaking also increase.

Finally, according to the correlation results upon self-reported driver behaviors, lapses were found to be in a negative relationship with self-assessed safe driving skills and perceptual motor skills for taxi drivers. On the other hand, taxi drivers' lapses increase as their novel sensations increase. Although no such relationship found for the sample non-professional driver, both groups' speeding behaviors in the driving simulator are also strongly in a relationship with their self-reported lapses. However, as taxi drivers report more lapses; their number of road traffic accidents and overtakes in the simulator also increase. Secondly, errors were found to be strongly in correlation with accidents and overtaking behavior of taxi drivers; whereas, as self-reported errors increase, non-professional drivers assessed their perceptual motor skills lower and reported more intense sensations. Thirdly, self-reported aggressive violations of taxi drivers are found to be in opposite direction with their risk perceptions while they were found to be in a strong relationship with novel and intense sensations, high and unstable speeding behaviors and more traffic rule violations in the driving simulator. On the other hand, although the speeding behavior of non-professional drivers was found to be in line with aggressive violations, it appeared to be only in correlation with self-assessed perceptual motor skills. Fourthly, self-reported ordinary violations were in negative correlation with their self-assessed safe driving skills and risk perception levels; however, novel sensations speeding behaviors, traffic rule violations and overtaking behaviors of taxi drivers were in a strong relationship with their self-reported ordinary violations. When non-professional drivers were considered, the results revealed that they differed from taxi drivers in the manner of intense sensations rather than novel sensations. Finally, positive driving behaviors were found to be in a relationship with safe driving skills for both groups while perceptual motor skills were also in line with positive behaviors for non-professional drivers.

4.3 Discussion upon Comparisons of Taxi and Non-professional Drivers

In order to obtain detailed information about the differences between young male taxi drivers and non-professional drivers upon study variables, series of comparisons have been performed for each variable.

First of all, results revealed that taxi drivers and non-professional drivers did not differ in hazard perception levels in traffic. This result may be explained via hazard perception characteristics of drivers represented in earlier studies. The driving experience has been considered as one of the most important key factors in determining drivers' hazard perception levels (McKenna & Crick, 1994; Chapman & Underwood, 1998; McKenna and Farrand, 1999; Pradhan et. al., 2005). However, when the driving experience is considered as a matter of time (e.g. years) rather than total mileage driven, drivers from same age groups are almost equivalent in hazard perception levels, meaning that total mileage driven may not be a determinant for same age groups.

Secondly, results revealed that taxi drivers and non-professional drivers did not differ in risk perception levels in traffic. As earlier studies (Sivak et. al., 1989; Rosenbloom et. al., 2008) have shown, neither driving experience nor occupational driving causes a significant difference in levels of risk perception between different driver groups.

Thirdly, results revealed that taxi drivers and non-professional drivers differed only in novel sensations in traffic. According to the results, non-professional drivers were found to have higher scores in novel sensation when compared to young male taxi drivers. This may be explained through lifestyles and life expectancies of participants. A sample of non-professional drivers were mainly university students with a variety of future plans and ways of searching; whereas, taxi drivers had more settled and specified lives. As Domangue (1984) clarified, since novelty is strongly related to creative and diversified thinking; this result is expectable. Nevertheless, one should be aware of the fact that this mere difference does not have to lead to more frequent risk-taking behaviors in traffic. As discussed in the model (Deery, 1999), drivers' level of risk acceptance, or sensation-seeking, have an important effect on drivers' decisions in traffic; however, both risk perception and drivers' evaluations about their driving skills also have a huge influence on driver behaviors.

Fourthly, results revealed that taxi drivers and non-professional drivers did not differ in self-assessed driving skills in traffic. As discussed in the first chapter, drivers are prone to evaluate their own driving skills better than other drivers. In the present study, by comparing taxi and non-professional drivers of the same age group, it appears as an important result that both groups consider themselves in the same level of safe driving skills and perceptual motor skills. One may argue that since taxi drivers spend much more time in traffic to develop their driving skills, non-professional drivers have "illusion of superiority". However, this finding can only and completely be explained through driving behaviors and mistakes of participants.

Lastly, although results revealed that taxi drivers and non-professional drivers did not differ in self-reported driving behaviors in traffic, they significantly differed in behaviors in the driving simulator. According to the results, young male taxi drivers performed higher average speeds in the first segment, in the second segment, and in the third segment when compared to non-professional drivers. This result can be considered both expectable and unwanted in traffic. Since driving is the profession of taxi drivers, main idea and proneness of this group are ought to be transporting their passengers safely to their destination. Moreover, although both groups did not differ in self-assessed driving skills; the same level of self-evaluated driving skill may cause taxi drivers to perform more risky behaviors when compared to non-professional drivers. It should also be stated that importance of the use of driving simulator when comparing two driver groups comes into existence. Self-report measures can be inadequate to detect aberrant driver behaviors as drivers may be unwilling to report their unsafe acts such as speeding.

4.4 Discussion upon Regression Results of Self-Reported Driver Behavior and Other Study Variables

As represented in the previous chapter, in order to understand the relationships among study variables and self-reported driver behaviors, series of hierarchical regression analyses have been performed.

The results revealed that hazard perception did not explain significant variances in risk perception levels of participants. One may argue that there is a direct relationship between hazard perception and risk perception. However, the content and purpose of the instrument used in the present study for measuring hazard perception may not be in line with the risk perception measure. As can be seen in the previous analyses, hazard perception measure, TIGT, had limited effect and presence in the model analyses and comparisons.

Secondly, results revealed that as a measure of risk acceptance, all three subscales of AISS, namely novelty, intensity, and risk-taking, were explained by the level of risk perception. According to the results, higher levels of risk perception caused lower sensation-seeking attitudes among young male taxi drivers and young male non-professional drivers. Hence, by the help of new approaches in order to develop a higher level of risk perception among professional and non-professional drivers, drivers can be trained to be more aware of the risks in traffic.

Thirdly, results revealed that self-assessed perceptual motor skills, as distinct from safe driving skills, were explained by the level of hazard perception. According to the results, higher levels of hazard perception cause drivers to assess their own perceptual motor skills less confidently. This result implies that when drivers are more aware of the hazards in traffic, they do not solely rely on their driving skills and evaluate the traffic environment in more solid and objective way.

Fourthly, results revealed that components of self-report driver behaviors have shown a significant relationship with both self-assessed driving skills and levels of risk acceptance. However, lapses were not explained through remaining study variables of the present study; while positive driver behaviors were explained in regression analysis with bootstrapping. According to the results, errors were explained by intense sensations and also self-assessed safe driving skills. Intense sensations were found to cause more errors in traffic; whereas, if drivers evaluate their safe driving skills higher, they also report that they avoid driving errors more in traffic. Furthermore, mediation analyses revealed that risk perception levels of drivers partially predicts driving errors through intense sensations. Thus, higher levels of risk perception may result in less driving errors in traffic. On the other hand, ordinary violations were solely explained by self-assessed driving skills. It is important to note that safe driving skills and perceptual motor skills work in opposite directions. While self-assessed safe driving skills prevent drivers from performing ordinary violations; self-assessed perceptual motor skills supports drivers to perform ordinary violations. Hence, it becomes highly important for drivers to evaluate their own driving skills without any illusions and self-deceptions. Similarly, aggressive violations were explained by self-assessed driving skills; however, in this case, intense sensations also affect drivers' behaviors regarding aggressive violations. While self-assessed safe driving skills prevent drivers from performing aggressive violations; if drivers consider their perceptual motor skills higher and they obey their intense sensations, they are more likely to perform aggressive violations in traffic. Furthermore, mediation analyses revealed that risk perception levels of drivers partially predict aggressive violations through intense sensations. Thus, higher levels of risk perception may also result in less aggressive violations in traffic. Finally, according to the regression analysis with bootstrapping, positive driver behaviors were found to be predicted by self-assessed safe driving skills. Since positive driver behaviors offer not only harmonic traffic environment; but, they also offer safer traffic environment with each driver's attitudes and actions.

4.5 Discussion upon Regression Results of Simulated Driver Behavior and Other Study Variables

In the previous section, relationships between hazard perception, risk perception, self-assessed driving skills and risk acceptance were discussed by including self-reported driver behaviors. Here, self-reported driver behaviors are going to be replaced by driver behaviors in the driving simulator. Hence, only the relationships between simulated driver behaviors and self-assessed driving skills and level of risk acceptance are going to be investigated.

Firstly, results revealed that all of the speeding variables, namely average velocity in the whole scenario, average velocity in the city center, average velocity in the inter-urban road and average velocity in the countryside road, were explained by self-assessed driving skills. Moreover, as discussed in the previous chapter, self-assessed safe driving skills and perceptual motor skills had opposite effects also on simulated speeding behaviors of participants. To clarify, as drivers evaluated their driving skills safer, they drove in slower speeds in the driving simulator. On the other hand, when they evaluated their perceptual motor skills better, they were prone to drive in higher speeds in the driving simulator. It is important to note that when drivers are promoted to be more skillful drivers, it should not be concerned with their abilities to overcome risky situations and test their driving skills; but, it should be concerned with how safely they are able to drive and do not risk the lives of others. This outcome gains emphasis when separate regression analyses were investigated. Although average speeds of non-professional drivers in the whole scenario were not predicted by self-assessed driving skills; it was observed that speeding behavior of taxi drivers was highly influenced by how they evaluate their own driving skills.

Secondly, results revealed that standard deviation in driving velocities of participants was explained by self-assessed safe driving skills and novel sensations. According to the results, an increase in self-assessed driving skills predicted less unstable speeds in narrow roads (i.e. 1+1 lanes in the countryside road). However, when drivers seek novel sensations, they are more prone to change their speeds along the road and find a way to pass the car(s) in front.

Thirdly, results revealed that driver mistakes in the driving simulator such as the number of accidents in the whole scenario and number of traffic light tickets in the city center were explained by self-assessed driving skills. To clarify, results revealed that the number of accidents was predicted by self-assessed safe driving skills. As drivers evaluated their safe driving skills higher, they got involved in fewer amounts of road traffic accidents throughout the driving simulator. On the other hand, the number of traffic light tickets in the city center was predicted by both self-assessed safe driving skills and perceptual motor skills. As represented earlier, safe driving skills and perceptual motor skills, respectively, discourage and encourage drivers to violate traffic rules. Moreover, the importance of this outcome comes into existence when separate regression analyses were investigated. Although the number of traffic light tickets of non-professional drivers was not predicted by self-assessed driving skills; it was observed that taxi drivers' self-evaluations predicted their aberrant driver behaviors in traffic.

Lastly, results revealed that overtaking behaviors of drivers were significantly explained through self-assessed driving skills as well as novel sensations. According to the results, although higher safe driving skills predicted less number of overtakes, higher self-assessed perceptual motor skills result in more overtakes. Moreover, higher novel sensations significantly predicted higher amounts of overtakes on roads. This result may imply that when drivers seek novel sensations in traffic, they may perform more overtakes even if the road conditions are not suitable (i.e. 1+1 lanes in the countryside road) and there is an ongoing traffic on both sides. Moreover, the importance of this outcome comes into existence when separate regression analyses were investigated. Although overtaking behaviors of non-professional drivers was not predicted by self-assessed driving skills; it was observed that taxi drivers' evaluations about themselves also predicted their overtaking behaviors and hence risk-taking behaviors. Furthermore, mediation analyses revealed that risk perception levels of drivers partially predicts overtaking behaviors through novel sensations. Thus, higher levels of risk perception may also result in less overtaking behavior in traffic.

4.6 Discussion upon Regression Results of Self-Reported and Simulated Driver Behavior

In this section results of regression analyses among self-reported driver behaviors and simulated driver behaviors are discussed. As mentioned in the previous chapter, five subscales of the DBQ have been included in regression analyses with one of the driving simulator outputs. Speeding behaviors covering all segments of the driving scenario, the number of accidents in the city center (the first segment) and the country road (the third segment), traffic light tickets in the city center and the number of overtakes in the country road were the variables included and investigated in the current study.

To start with, neither errors nor positive driver behaviors had a significant relationship with the results of simulated driver behaviors. Results concerning driver errors may be considered controversial since they are directly in relation to drivers' planned actions and their intended consequences. Nevertheless, as Reason et. al. (1990) discussed, errors are part of individuals' cognitive processes that do not have to include concepts such as rules and violations. Moreover, the nature of errors demonstrates that it is difficult to recall and even shameful to report them. Therefore, it is important to state that the results of simulated driver behaviors have distinguished errors from violations in terms of the driving experience of a person and socially shared traffic environment. On the other hand, it was a predictable result that positive driver behaviors had no significant relationship with driving simulator variables since there was no relatable condition in the simulated scenario.

Secondly, lapses were found to be in a relationship with the average velocity and the number of accidents in the country road segment in the driving simulator. To recall, countryside road in the simulator consisted of 2 lanes with ongoing traffic and horizontal curves. This can be explained as "the unwitting deviation of action from intention" (Reason et. al., 1990). Since country road designed in the simulation permitted drivers to speed and to attempt to overtake, lapses were significant predictors of those driver mistakes in the driving simulation. Moreover, in earlier studies, higher scores in lapses were found to be in a relationship with "high steering wheel reversal rates" and "less consistent throttle control" (Zhao, Mehler, Reimer, D'Ambrosio, Mehler, Coughlin, 2012) where the outcomes of these actions have been detected in the present study.

Thirdly, ordinary violations were found to be in a relationship with the average velocities throughout the driving simulation, traffic light tickets and number of overtakes in the country road segment in the driving simulator. As obvious, ordinary violations were the most responsive subscale of the DBQ to driving simulator since they can directly be observed in traffic. These findings suggest that drivers reporting their ordinary violations in traffic also show those aberrant behaviors in the driving simulator as well. Another important outcome is that ordinary violations do not have to result in accidents; but, all these aberrant driver behaviors increase the risk of accidents and injuries in traffic.

Finally, aggressive violations were found to be in a relationship with a standard deviation of velocity in the country road segment in the driving simulator. This finding can be explained by explaining the insignificant relationship between aggressive violations and number of overtakes in the same segment. Since participants change their throttling force and drive in unstable speeds, the standard deviation of velocity is considered as the proneness and the search of participants to overtake in this segment. However, each attempt does not have to result in overtaking and hence only appears as aggressive violations performed by participants by trying to change lanes and following the car in front closely.

4.7 Overall Discussion

According to the research questions of the current study, the following overall discussions can be presented:

- Unlike the model proposed by Deery (1999), regression analyses among each component of the model revealed that no significant relationship was found between hazard perception and risk perception levels of participants. Hazard perception was found to be only in significant relationship with self-assessed driving skills. As discussed earlier, this result may be due to the limitation of hazard perception measure used in the study. Remaining components of the model revealed significant relationships in expected orientations. According to the results, as professional and non-professional drivers perceive risk in traffic higher, their risk acceptance levels decrease; hence, they become more avoidant against the risks in traffic. Moreover, aberrant driver behaviors of these groups decrease as drivers evaluate their driving skills safer and rely less on their perceptual motor skills; on the other hand, as drivers' sensation take the control in traffic, they become more prone to perform driving errors and more willing to perform violations in traffic.

- Comparisons between young male taxi drivers and non-professional drivers reveal that although taxi drivers have not reported higher aberrant driver behaviors, they drive in significantly higher speeds in the driving simulator. This result may imply two discussion points. The sample of young male taxi drivers may either have lack in knowledge about answering self-report questionnaires or be unwilling to report their negative habits due to their personal hesitations. Hence, use of the driving simulator in the special case of professional drivers gains emphasis in order to obtain more realistic results. Since young male taxi drivers exhibit more risky driving behaviors, special attention shall be paid to reduce these unsafe acts. At this point, several suggestions can be made in accordance with the components of the current model. As people rely on taxi drivers to safely transport them to their destination, necessary training regarding risk perceptions in traffic and self-assessments of driving skills, as well as, monitoring systems regarding behaviors in traffic shall be established on taxi drivers. Also, the terms not included in the model, illusion of control and optimism bias may help to understand risky driving behaviors of taxi drivers. As taxi drivers spend their huge amount of time in traffic, they may think that nothing harmful is going to happen to them since they somehow become immune to dangers in traffic. However, these kinds of misbelieves may be diminished by both in-vehicle monitoring and feedback systems together with supportive media campaigns.

REFERENCES

Armsby, P., Boyle, A. J., & Wright, C. C. (1989). Methods for assessing drivers' perception of specific hazards on the road. *Accident Analysis and Prevention*, 21, 45–60.

Arnett, J. (1991). Still crazy after all these years: reckless behavior among young adults aged 23–27. *Personality and Individual Differences*, 12, 1305–1313.

Arnett, J. (1994). Sensation Seeking: A new conceptualization and a new scale. *Personality and Individual Differences*, 16, 289-296.

Başayar, F. N. (2014). Kara yolu yolcu taşımacılığında iş sağlığı ve güvenliği. *T.C. Çalışma ve Sosyal Güvenlik Bakanlığı İş Sağlığı ve Güvenliği Genel Müdürlüğü*. Ankara.

Begg, D. J., & Langley, J. D. (2001). Changes in risky driving behaviour among young adults. *Journal of Safety Research*, 32, 491–499.

Bella, F., & Silvestri, M. (2016). Driver's braking behavior approaching pedestrian crossings: a parametric duration model of the speed reduction times. *Journal of Advanced Transportation*, 50 (4), 630–646.

Borowsky A., Shinar D., & Oron-Gilad T. (2010). Age, skill, and hazard perception in driving. *Accident Analysis and Prevention*, 42 (4), 1240-1249.

Borowsky, A., Oron-Gilad, T. & Parmet, Y. (2010). The role of driving experience in hazard perception and categorization: a traffic-scene paradigm. *Proceedings of World Academy of Science, Engineering and Technology*, 305–309.

Brown, I. D., & Groeger, J. A. (1988). Risk perception and decision taking during the transition between novice and experienced driver status. *Ergonomics*, 31(4), 585-597.

Burns, P. C., & Wilde, G. J. S. (1995). Risk taking in male taxi drivers: Relationships among personality, observational data and driver records. *Personality and Individual Differences*, 18, 267–278.

Chai J., & Zhao G. (2016). Effect of exposure to aggressive stimuli on aggressive driving behavior at pedestrian crossings at unmarked roadways. *Accident Analysis and Prevention*, 88, 159-168.

Chapman P.R., Underwood G. (1998). Visual search of driving situations: Danger and experienced. *Perception*, 27, 951–964.

Charlton S. G., & Starkey N. J. (2016). Risk in our midst: Centrelines, perceived risk, and speed choice. *Accident Analysis and Prevention*, 95, 192-201.

Dalziel, J.R., & Job, R.F.S. (1997). Motor vehicle accidents, fatigue and optimism bias in taxi drivers. *Accident Analysis and Prevention*, 29 (4), 489–494.

Dalziel, J. R. & Soames Job, R. F. (1997). Taxi Drivers and Road Safety. *A report to the Federal Office of Road Safety, Department of Transport and Regional Development*, Canberra.

Deery, H.A. (1999). Hazard and risk perception among young novice drivers. *Journal of Safety Research*, 30(4), 225-236.

Delhomme, P. (1991). Comparing one's driving with others': Assessment of abilities and frequency of offences. Evidence for a superior conformity of self-bias? *Accident Analysis and Prevention*, 23(6), 493–508.

Delhomme, P., Meyer, T. (2000). Risk taking and self-efficacy among young male drivers: self-efficacy and changing task demands. In: *Proceedings of the International Conference on Traffic and Transport Psychology ICTTP*, Berne, Switzerland.

De Winter, J., Groot, S, Mulder, M., Wieringa, P., & Dankelman, J., (2009). Relationships between driving simulator performance and driving test results. *Ergonomics*, 52(2), 137-153.

Domangue, B. B. (1984). Sensation seeking and cognitive complexity. *Perceptual and Motor Skills*, 58, 3-20.

Fergusson, D., Swain-Campbell, N., & Horwood, J. (2003). Risky driving behaviour in young people: prevalence, personal characteristics and traffic accidents. *Australian and New Zealand Journal of Public Health*, 27, 337–342.

Goodman, L. A. (1961). Snowball sampling. *Annals of Mathematical Statistics,* 32(1), 148–170.

Groeger, J. A., & Brown, I. D. (1989). Assessing one’s own and others’ driving ability: Influence of sex, age, and experience. *Accident Analysis and Prevention*, 21, 155–168.

Haghi A., Ketabi D., Ghanbari M., & Rajabi H. (2014). Assessment of human errors in driving accidents; analysis of the causes based on aberrant behaviors. *Life Science Journal*, 11(9), 414 – 420.

Harre, N. (2000). Risk evaluation, driving, and adolescents: A typology. *Developmental Review,* 20 (2), 206-26.

HaSPA (2012). The Core Body of Knowledge for Generalist OHS Professionals. Tullamarine, VIC. Safety Institute of Australia.

Harrington, D. M. & McBride, R. S. (1970). Traffic violations by type, age, sex and marital status. *Accident Analysis and Prevention*, 2, 67-79.

Johnson, N.J., Sorlie, P.D., Backlund, E. (1999). The impact of specific occupation on mortality in the US National Longitudinal Mortality Study. *Demography,* 36, 355–367.

Jonah B.A. (1986). Accident risk and risk-taking behaviour among young drivers. *Accident Analysis and Prevention,* 18 (4), 255-271.

Jovanović D., Stanojević P., Jakšić D., (2014). The influence of risk perception and self-assessed driving abilities on the behavior of young drivers. XII International Symposium. *Road Accident Prevention*, 2014.

Karayolu Trafik Kaza İstatistikleri, 2015 (2016). Ankara: Türkiye İstatistik Kurumu Trafik Istatistik Bülteni (2016).

Kokubun M., Konishi H., Higuchi K., Kurahashi T., Umemura Y., Nishi H. (2005). Quantitative assessment of driver's risk perception using a simulator. *International Journal of Vehicle Safety*, 1(1-3), 5-21.

Lajunen, T., & Summala, H. (1995). Driving experience, personality, and skill and safety-motive dimensions in drivers' self-assessments. *Personality and Individual Differences*, 19(3), 307–318.

Lajunen, T., & Summala, H. (2003). Can we trust self-reports of driving? Impression management on driver behaviour questionnaire responses. *Transportation Research Part F: Traffic Psychology and Behaviour*, 6, 97–107.

Lajunen, T., Parker, D., & Summala, H. (2004). The Manchester driver behaviour questionnaire: a cross-cultural study. *Accident Analysis and Prevention*, 36, 231–238.

Lajunen, T., & Özkan, T. (2004). Kultur, guvenlik kulturu, Turkiye ve Avrupa`da trafik guvenligi. Project No: SBB-3023, June 2004, Ankara, Turkey.

Lam, L.T. (2004). Environmental factors associated with crash-related mortality and injury among taxi drivers in New South Wales, Australia. *Accident Analysis & Prevention*, 36 (5), 905–908.

Langer, E. J (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32, 311-328.

Lemieux, C., Stinchcombe, A., Gagnon, S., & Bédard, M. (2014). Comparison of simulated driving performance across platforms: from "Low-Cost Desktop" to "Mid-Level" driving simulators. *Advances in Transportation Studies*, (34), 33–42.

Ma M., Yan X., Huang H., & Abdel-Aty M. (2010). Occupational Driver Safety of Public Transportation: Risk Perception, Attitude, and Driving Behavior. *Journal of the Transportation Research Board*, 2145, 3, 72-79.

Machado, J.L., De Oña, J., De Oña, R., Eboli, L., Mazzulla, G., (2014). A stated preference experiment for understanding drivers' risk perception. *Procedia - Social and Behavioral Sciences,* 162 (0), 263 - 272.

Machin, M. A., & Sankey, K. S. (2008). Relationships between young drivers' personality characteristics, risk perceptions, and driving behaviour. *Accident Analysis & Prevention*, 40 (2).

Matthews, M.L. & Moran, A.R. (1986). Age differences in male drivers' perception of accident risk: The role of perceived driving ability. *Accident Analysis and Prevention*, 18 (4), 299–313.

Mayhew, D.R., & Simpson, H.M. (1995). The Role of Driving Experience: Implications for the Training and Licensing of New Drivers. Toronto, Ontario: Insurance Bureau of Canada.

McKenna, F. P., Farrand, P. (1999). The role of automaticity in driving. In G. B. Grayson (Ed.), Behavioural research in road safety IX. Crowthorne, England: Transport and Road Research Laboratory.

McKenna F P, & Crick J L, (1994) Hazard Perception in Drivers: A Methodology for testing and training. TRL Contractor Report 313, Crowthorne, Berkshire.

Meuleners, L. & Fraser, M. (2015). A validation study of driving errors using a driving simulator. *Transportation Research Part F*, 29, 14-21.

OECD (2016). Road accidents (indicator). doi: 10.1787/2fe1b899-en (Accessed on 03 September 2016)

Öz, B., Özkan, T., & Lajunen, T. (2010). An investigation of the relationship between organizational climate and professional drivers' driver behaviours. *Safety Science*, 48 (10), 1484 – 1489.

Özkan, T. (2002). The role of personality characteristics, psychomotor/cognitive abilities and driver behaviours and skills in predicting accident involvement (Master's thesis, Middle East Technical University, Ankara, Turkey)

Özkan, T., Sümer, N., Ayvaşık, B., & Er, N. (2002). Kişilik özellikleri, koordinasyon becerileri, sürücü davranışları ve trafik kazaları. Uluslararası Trafik ve Yol Güvenliği Kongresi ve Fuarı. 8-12 Mayıs, 2002, Gazi Üniversitesi, Ankara

Özkan, T., & Lajunen, T. (2005). A new addition to DBQ: Positive driver behaviour scale. *Transportation Research Part F: Traffic Psychology and Behaviour*, 8, 355–368.

Özkan, T., Lajunen, T., Chliaoutakis, J., Parker, D., & Summala, H. (2006). Cross-cultural differences in driving skills: a comparison of six countries. *Accident Analysis and Prevention*, 38, 1011-1018.

Palat, B., & Delhomme, P. (2016). A simulator study of factors influencing drivers' behavior at traffic lights. *Transportation Research Part F*. 37, 107–118.

Parker D., Reason J. T., Manstead A. S. R., & Stradling S. G. (1995): Driving errors, driving violations and accident involvement. *Ergonomics*, 38:5, 1036-1048.

Parmet Y., Borowsky A., Yona O., and Oron-Gilad T. (2014). Driving speed of young-novice and experienced drivers in simulated hazard anticipation scenes, *Human Factors*.

Peltzer, K., & Renner, W. (2003). Superstition, risk taking and risk perception of accidents among South African taxi drivers. *Accident Analysis & Prevention*, 35, 619–623.

Persing, C.R. & Schick, C. (1999). Development and validation of a multidimensional self-destructiveness scale (MSS) to assess maladaptive and risky behaviors and beliefs in young adults. Presented at the Meeting of the Pennsylvania Psychological Association Convention, Valley Forge, PA, June.

Pradhan, A.K., Hammel, K.R., DeRamus, R., Pollatsek, A., Noyce, D.A. and Fisher, D.L. (2005). The Use of Eye Movements to Evaluate the Effects of Driver Age on Risk Perception in an Advanced Driving Simulator. *Human Factors*, 47, 840-852.

Reason, J. T., Manstead, A. S. R., Stradling, S., Baxter, J., & Campbell, K. (1990). Errors and violations on the roads. *Ergonomics*, 33, 1315–1332.

Rhodes, N., Pivik, K. (2011). Age and gender differences in risky driving: the roles of positive Affect and risk perception. *Accident Analysis and Prevention*, 43 (3), 923–931.

Rohrmann, B. (2005). Risk attitude scales: Concepts, questionnaires, utilizations. *Project Report*. Department of Psychology, University of Melbourne, Australia.

Rosenbloom, T., Shahar, A. (2007). Differences between taxi and nonprofessional male drivers in attitudes towards traffic-violation penalties. *Transportation Research Part F*, 10, 428–435.

Rosenbloom, T., Shahar, A., Elharar, A., & Danino, O. (2008). Risk perception of driving as a function of advanced training aimed at recognizing and handling risks in demanding driving situations. *Accident Analysis & Prevention*, 40(2), 697-703.

Sandman, P. M. (1993). Responding to community outrage: Strategies for effective risk communication. Fairfax, VA: American Industrial Hygiene Association.

Shams, M., Shojaeizadeh, D., Majdzadeh, R., Rashidian, A., Montazeri, A., 2011. Taxi drivers' views on risky driving behavior in Tehran: a qualitative study using a social marketing approach. *Accident Analysis & Prevention*, 43 (3), 646–651.

Shechtman O., Classen S, Awadzi K, & Mann W., (2009). Comparison of driving errors between on-the-road and simulated driving assessment: a validation study. *Traffic Injury Prevention*, 10 (4), 379-85.

Sivak, M., Soler, J., Traenkle, U., Sagnhol, J.M., (1989). Cross-cultural differences in driver risk perception. *Accident Analysis & Prevention,* 21, 355–362.

Spek, A. C. E., Wieringa, P. A., & Janssen, W. H. (2006). Intersection approach speed and accident probability. *Transportation Research Part F*, 9, 155–171.

Sümer, N., & Lajunen, T., & Özkan, T. (2002). Surucu davranislarinin kaza risklerindeki roller: Ihlaller ve hatalar. *Traffic and Road safety International Congress*, Gazi University, Ankara, Turkey, 8-12 May.

Sümer, N., & Özkan, T. (2002). The role of driver behavior, skills, and personality traits in traffic accidents. *Turkish Journal of Psychology*, 17(50), 1–22.

Svenson, O. (1981). Are we all less risky and more skillful than our fellow drivers? *Acta Psychologica*, 47, 143–148.

Şişman A., & Balcancı S. (2012). Samsun Kent İçi Trafik Kazalarının CBS Yardımıyla İrdelenerek Kara Noktaların Belirlenmesi. III. Uzaktan Algılama ve Coğrafi Bilgi Sistemleri Sempozyumu, Gebze, KOCAELİ.

Tronsmoen, T. (2008). Associations between self-assessment of driving ability, driver training and crash involvement among young drivers. *Transportation Research Part F: Traffic Psychology and Behaviour,* 11, 334–346.

Ulleberg, P., & Rundmo, T. (2003). Personality, attitudes and risk perception as predictors of risky driving behaviour among young drivers, *Safety Science*, 41, 427–443.

Wang Y., Li L., Feng L., & Peng H. (2014). Professional drivers' views on risky driving behaviors and accident liability: a questionnaire survey in Xining, China. *Transportation Letters*, 6(3), 126-135.

Waylen, A.E., Horswill, M.S., Alexander, J.L., Mckenna, F.P. (2004). Do expert drivers have a reduced illusion of superiority? *Transportation Research Part F: Traffic Psychology and Behaviour,* 7, 323–331.

Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39 (5), 856-820.

Weinstein, N. D. (1987). Unrealistic optimism about susceptibility to health problems: Conclusion from a community-wide sample. *Journal of Behavioral Medicine*, 10 (5), 481-500.

Whyte, A. V. (1983). Probabilities, consequences and values in the perception of risk. In *Risk: Proceedings of a Symposium on the Assessment and Perception of Risk to Human Health in Canada* (pp. 121-134). Ottawa: Royal Society of Canada.

World Health Organization (2009a). Global status report on road safety time for action. Geneva, World Health Organization.

World Health Organization. (2009b). European status report on road safety. Towards safer roads and healthier transport. Geneva: World Health Organization, Europe. Report.

World Health Organization (2013). Global status report on road safety 2013: supporting a decade of action. Geneva, World Health Organization.

World Health Organization (2015a). Global status report on road safety. Geneva, World Health Organization.

World Health Organization (2015b). European facts and the Global status report on road safety 2015. Geneva: World Health Organization, Europe. Report.

Wu J., Yan X., & Radwan E. (2016). Discrepancy analysis of driving performance of taxi drivers and non-professional drivers for red-light running violation and crash avoidance at intersections. *Accident Analysis and Prevention*, 91, 1-9.

Wu J., Yan X., Radwan (2016). Discrepancy analysis of driving performance of taxi drivers and non-professional drivers for red-light running violation and crash avoidance at intersections. *Safety Science*, 91, 1 – 9.

Xu, C., Liu, P., Wang, W., Jiang X., & Chen y. (2014). Effects of behavioral characteristics of taxi drivers on safety and capacity of signalized intersections. Journal of Central South University, 21(10): 4033-4042.

Zhao, N., Mehler, B., Reimer, B., D'Ambrosio, L.A., Mehler, A., & Coughlin, J.F. (2012). An investigation of the relationship between the Driving Behavior Questionnaire and objective measures of highway driving behavior. *Transportation Research Part F: Traffic Psychology and Behavior*, 15, 676-685.

APPENDICES

APPENDIX A: Ethical Permission

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

DUMLUPINAR BULVARI 06800
ÇANKAYA ANKARA/TURKEY
T: +90 312 210 22 91
F: +90 312 210 79 59
ueam@metu.edu.tr
www.ueam.metu.edu.tr

Sayı: 28620816 / 135

06 Nisan 2016

Gönderilen: Doç.Dr. Türker ÖZKAN
Psikoloji Bölümü

Gönderen: Prof. Dr. Canan SÜMER
İnsan Araştırmaları Kurulu Başkanı

İlgi: Etik Onayı

Sayın Doç.Dr. Türker ÖZKAN danışmanlığını yaptığı yüksek lisans öğrencisi Uğur Uygar ERKUŞ'un "Profesyonel ve Profesyonel Olmayan Sürücülerin Risk Algısı Seviyelerinin Güvenli Sürücülük Performansları Üzerindeki Etkisi" başlıklı araştırması İnsan Araştırmaları Komisyonu tarafından uygun görülerek gerekli onay **2016-SOS-058** protokol numarası ile **20.04.2016-27.09.2016** tarihleri arasında geçerli olmak üzere verilmiştir.

Prof. Dr. Canan SÜMER
Uygulamalı Etik Araştırma Merkezi
İnsan Araştırmaları Kurulu Başkanı

APPENDIX B: Informed Consent Form for Participants

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU

Bu araştırma, ODTÜ Psikoloji Bölümü öğretim elemanlarından Doç. Dr. Türker Özkan danışmanlığında Dr. Pınar Bıçaksız, Uzm. Psk. Yeşim Üzümcüoğlu, Psk. İbrahim Öztürk ve Uygar Erkuş tarafından yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir?

Çalışmanın amacı, sürücülerin örtük ve beyana dayalı şekilde ölçülmüş demografik ve kişilik değişkenlerinin sürücü davranışlarına olan etkisinin incelenmesidir.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Çalışma kapsamında sizden yaklaşık 2 saat süren bir deney bataryası tamamlamanız istenecektir.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Çalışmada, kimlik belirleyici hiçbir bilgi istenmemektedir. Anket formları gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Elde edilecek bilgiler sadece bilimsel yayımlarda kullanılacaktır.

Katılımınızla ilgili bilmeniz gerekenler:

Çalışma genel olarak kişisel rahatsızlık verecek bir etkileşim içermemektedir. Ancak, katılım sırasında herhangi bir nedenden ötürü kendinizi rahatsız hissederseniz çalışmayı istediğiniz zaman bırakmakta serbestsiniz.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:

Bu çalışmaya katıldığınız için şimdiden çok teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için araştırmacılar ile iletişim kurabilirsiniz.

Pınar Bıçaksız (pbicaksiz@gmail.com)
Yeşim Üzümcüoğlu (yesimuzumcuoglu@gmail.com)
İbrahim Öztürk (ibrahmoztrk@gmail.com)
Uygar Erkuş (uygarerkus@gmail.com)
Tel.: 312 210 51 18

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

Ad Soyad　　　　　Tarih　　　　　İmza

---/----/-----

APPENDIX C: Demographic Information Form of Taxi Drivers

1. Yaşınız:________
2. Cinsiyetiniz: Erkek Kadın

3. Eğitim durumunuz:
Okur-yazar
İlkokul
Ortaokul
Lise
Üniversite(Lisans)
Üniversite(Lisansüstü)

4. Kaç yıldır ehliyet sahibisiniz? _________

5. Günlük hayatınızda kullandığınız aracınızın vites türü nedir?

Kendi aracınız:	Ticari aracınız:
Manuel (Düz)	Manuel (Düz)
Yarı otomatik	Yarı otomatik
Tam otomatik	Tam otomatik

6. Son bir yılda yaklaşık olarak toplam kaç kilometre araç kullandınız? (Eğer kendi aracınız yoksa "kendi aracınızla" kısmını boş bırakınız. Eğer aracınız varsa ve hiç kullanmadıysanız, "kendi aracınızla" kısmına "0" yazınız)
Kendi aracınızla _________ Ticari Aracınızla _________

7. Bugüne kadar tahmini toplam kaç kilometre araç kullandınız? (Eğer kendi aracınız yoksa "kendi aracınızla" kısmını boş bırakınız. Eğer aracınız varsa ve hiç kullanmadıysanız, "kendi aracınızla" kısmına "0" yazınız)
Kendi aracınızla _________ Ticari Aracınızla _________

8. Son üç yıl içerisinde **küçük ya da büyüklüğüne bakmazsızın, nedeni ne olursa olsun,**
başınızdan geçen **kaza sayısı kaçtır?** (Eğer kendi aracınız yoksa "kendi aracınızla" kısmını boş bırakınız. Eğer kendi aracınız varsa ve o araçla hiç kaza yapmadıysanız "kendi aracınızla" kısmına "0" yazınız)
Kendi aracınızla _________ Ticari Aracınızla _________

9. Son üç yılda kaç kez araç kullanırken **aktif olarak** (sizin bir araca, bir yayaya veya herhangi bir nesneye çarptığınız durumlar) kaza yaptınız? (hafif kazalar dâhil) (Eğer kendi aracınız yoksa "kendi aracınızla" kısmını boş bırakınız. Eğer kendi aracınız varsa ve o araçla hiç kaza yapmadıysanız "kendi aracınızla" kısmına "0" yazınız)
Kendi aracınızla _________ Ticari Aracınızla _________

10. Son üç yılda kaç kez araç kullanırken **pasif olarak** (bir aracın ya da bir yayanın size çarptığı durumlar) kaza geçirdiniz? (hafif kazalar dâhil)______________________

11. Son üç yılda aşağıdaki trafik cezalarını kaç kere aldığınızı belirtiniz. (Eğer hiç almadıysanız lütfen 0 yazınız.).

	Kendi Aracınızla	Ticari Aracınızla
a) Yanlış park etme	__________	__________
b) Hatalı sollama	__________	__________
c) Hız ihlali	__________	__________
d) Kırmızı ışıkta geçme	__________	__________
e) Diğer	__________	__________

12. Hava ve yol koşulları uygun olduğunda şehirlerarası yollarda yaklaşık ortalama kaç kilometre hızla gidersiniz? __________ km/saat

13. Hava ve yol koşulları uygun olduğunda şehir içi yollarda yaklaşık ortalama kaç kilometre hızla gidersiniz? _________ km/saat

14. Hız limitinin 50 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz? _____km/s

15. Hız limitinin 82 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz? _____km/s

16. Hız limitinin 90 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz? _____km/s

17. Hız limitinin 100 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz?_____km/s

APPENDIX D: Demographic Information Form of Non-Professional Drivers

1. Yaşınız:________
2. Cinsiyetiniz: Erkek Kadın

3. Eğitim durumunuz:
Okur-yazar
İlkokul
Ortaokul
Lise
Üniversite(Lisans)
Üniversite(Lisansüstü)

4. Kaç yıldır ehliyet sahibisiniz? _________

5. Ticari (profesyonel) amaçla araç kullanıyor musunuz? Evet Hayır
Evet ise türünü belirtiniz _________

6. Günlük hayatınızda kullandığınız aracınızın vites türü nedir?
Manuel (Düz)
Yarı otomatik
Tam otomatik

7. Son bir yılda yaklaşık olarak toplam kaç kilometre araç kullandınız? _________

8. Bugüne kadar tahmini toplam kaç kilometre araç kullandınız?

9. Son üç yıl içerisinde **küçük ya da büyüklüğüne bakmazsızın, nedeni ne olursa olsun,**
başınızdan geçen **kaza sayısı kaçtır? ____________________**

10. Son üç yılda kaç kez araç kullanırken **aktif olarak** (sizin bir araca, bir yayaya veya herhangi bir nesneye çarptığınız durumlar) kaza yaptınız? (hafif kazalar dâhil)____________________

11. Son üç yılda kaç kez araç kullanırken **pasif olarak** (bir aracın ya da bir yayanın size çarptığı durumlar) kaza geçirdiniz? (hafif kazalar dâhil)_____________________

12. Son üç yılda aşağıdaki trafik cezalarını kaç kere aldığınızı belirtiniz. (Eğer hiç almadıysanız lütfen 0 yazınız.).
a) Yanlış park etme _________
b) Hatalı sollama _________
c) Hız ihlali _________
d) Kırmızı ışıkta geçme _________
e) Diğer _________

13. Hava ve yol koşulları uygun olduğunda şehirlerarası yollarda yaklaşık ortalama kaç
kilometre hızla gidersiniz? __________km/saat

14. Hava ve yol koşulları uygun olduğunda şehir içi yollarda yaklaşık ortalama kaç kilometre
hızla gidersiniz? _________km/saat

15. Hız limitinin 50 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz? _____km/s

16. Hız limitinin 82 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz? _____km/s

17. Hız limitinin 90 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz? _____km/s

18. Hız limitinin 100 km/s olduğu yollarda kaç km/s hızla gitmeyi tercih edersiniz?_____km/s

APPENDIX E: Driver Behavior Questionnaire

Aşağıda verilen durumları ne sıklıkta yaparsınız ?

Lütfen her bir madde için verilen durumun ne sıklıkta başınızdan geçtiğini belirtiniz. Soruları, nasıl araç kullandığınızı düşünerek cevaplandırınız ve her bir soru için sizi tam olarak yansıtan cevabı, yanındaki kutudaki uygun rakamı daire içine alarak belirtiniz.

0= HİÇ BİR ZAMAN
1= NADİREN
2= BAZEN
3= OLDUKÇA SIK
4= SIK SIK
5= HER ZAMAN

		Hiçbir zaman	**Nadiren**	**Bazen**	**Oldukça sık**	**Sık sık**	**Her zaman**
1	Geri geri giderken önceden fark etmediğiniz birşeye çarpmak	0	1	2	3	4	5
2	Trafikte, diğer sürücülere engel teşkil etmemeye gayret göstermek	0	1	2	3	4	5
3	A yönüne gitmek amacıyla yola çıkmışken kendinizi daha alışkın olduğunuz B yönüne doğru araç kullanırken bulmak	0	1	2	3	4	5
4	Geçiş hakkı sizde dahi olsa diğer sürücülere yol vermek	0	1	2	3	4	5
5	Yasal alkol sınırlarının üzerinde alkollü olduğunuzdan şüphelenseniz de araç kullanmak	0	1	2	3	4	5
6	Aracınızı kullanırken yol kenarında birikmiş suyu ve benzeri maddeleri yayaların üzerine sıçratmamaya dikkat etmek	0	1	2	3	4	5
7	Dönel kavşakta dönüş istikametinize uygun olmayan şeridi kullanmak	0	1	2	3	4	5
8	Anayoldan sola dönmek için kuyrukta beklerken, anayol trafiğine dikkat etmekten neredeyse öndeki araca çarpacak duruma gelmek	0	1	2	3	4	5
9	Trafikte, herhangi bir sürücü size yol verdiğinde veya anlayış gösterdiğinde, elinizi sallayarak, korna çalarak vb. şekilde teşekkür etmek	0	1	2	3	4	5

		Hiçbir zaman	Nadiren	Bazen	Oldukça sık	Sık sık	Her zaman
10	Anayoldan bir sokağa dönerken karşıdan karşıya geçen yayaları fark edememek	0	1	2	3	4	5
11	Başka bir sürücüye kızgınlığı belirtmek için korna çalmak	0	1	2	3	4	5
12	Karşıdan gelen araç sürücüsünün görüş mesafesini koruyabilmesi için uzunları mümkün olduğunca az kullanmak	0	1	2	3	4	5
13	Bir aracı sollarken ya da şerit değiştirirken dikiz aynasından yolu kontrol etmemek	0	1	2	3	4	5
14	Kaygan bir yolda ani fren veya patinaj yapmak	0	1	2	3	4	5
15	Arkanızdan hızla gelen aracın yolunu kesmemek için sollamadan vazgeçip eski yerinize dönmek	0	1	2	3	4	5
16	Kavşağa çok hızlı girip geçiş üstünlüğü olan aracı durmak zorunda bırakmak	0	1	2	3	4	5
17	Şehir içi yollarda hız sınırını aşmak	0	1	2	3	4	5
18	Önünüzdeki aracın sürücüsünü, onu rahatsız etmeyecek bir mesafede takip etmek	0	1	2	3	4	5
19	Sinyali kullanmayı niyet ederken silecekleri çalıştırmak	0	1	2	3	4	5
20	Sağa dönerken yanınızdan geçen bir bisiklet ya da araca neredeyse çarpmak	0	1	2	3	4	5
21	“Yol ver” işaretini kaçırıp, geçiş hakkı olan araçlarla çarpışacak duruma gelmek	0	1	2	3	4	5
22	Yeşil ışık yandığı halde hareket etmekte geciken öndeki araç sürücüsünü korna çalarak rahatsız etmemek	0	1	2	3	4	5
23	Trafik ışıklarında üçüncü vitesle kalkış yapmaya çalışmak	0	1	2	3	4	5
24	Yayaların karşıdan karşıya geçebilmeleri için geçiş hakkı sizde dahi olsa durarak yol vermek	0	1	2	3	4	5
25	Sola dönüş sinyali veren bir aracın sinyalini fark etmeyip onu sollamaya çalışmak	0	1	2	3	4	5

		Hiçbir zaman	Nadiren	Bazen	Oldukça sık	Sık sık	Her zaman
26	Trafikte sinirlendiğiniz bir sürücüyü takip edip ona haddini bildirmeye çalışmak	0	1	2	3	4	5
27	Arkanızdaki aracın ileriyi iyi göremediği durumlarda sinyal vb. ile işaret vererek sollamanın uygun olduğunu belirtmek	0	1	2	3	4	5
28	Otoyolda ileride kapanacak bir şeritte son ana kadar ilerlemek	0	1	2	3	4	5
29	Sollama yapan sürücüye kolaylık olması için hızınızı onun geçiş hızına göre ayarlamak	0	1	2	3	4	5
30	Aracınızı park alanında nereye bıraktığınızı unutmak	0	1	2	3	4	5
31	Solda yavaş giden bir aracın sağından geçmek	0	1	2	3	4	5
32	Trafik ışığında en hızlı hareket eden araç olmak için yandaki araçlarla yarışmak	0	1	2	3	4	5
33	Trafik işaretlerini yanlış anlamak ve kavşakta yanlış yöne dönmek	0	1	2	3	4	5
34	Acil bir durumda duramayacak kadar, öndeki aracı yakın takip etmek	0	1	2	3	4	5
35	Trafik ışıkları sizin yönünüze kırmızıya döndüğü halde kavşaktan geçmek	0	1	2	3	4	5
36	Otobanda trafik akışını sağlayabilmek için en sol şeridi gereksiz yere kullanmaktan kaçınmak	0	1	2	3	4	5
37	Bazı tip sürücülere kızgın olmak (illet olmak) ve bu kızgınlığı bir şekilde onlara göstermek	0	1	2	3	4	5
38	Seyahat etmekte olduğunuz yolu tam olarak hatırlamadığınızı fark etmek	0	1	2	3	4	5
39	Sollama yaparken karşıdan gelen aracın hızını olduğundan daha yavaş tahmin etmek	0	1	2	3	4	5
40	Gereksiz yere gürültü yapmamak için kornayı kullanmaktan kaçınmak	0	1	2	3	4	5
41	Otobanda hız limitlerini dikkate almamak	0	1	2	3	4	5
42	Aracınızı park ederken diğer yol kullanıcılarının (yayalar, sürücler vb.) hareketlerini sınırlamamaya özen göstermek	0	1	2	3	4	5

APPENDIX F: Driver Skill Inventory

Araç kullanırken güçlü ve zayıf yönleriniz nelerdir?

Doğal olarak, hepimizin güçlü ve zayıf sürücü yönlerimiz vardır. Lütfen sizin, bir sürücü olarak güçlü ve zayıf yönlerinizin neler olduğunu her bir madde için aşağıdaki uygun seçeneği işaretleyerek belirtiniz

1= ÇOK ZAYIF
2= ZAYIF
3= NE ZAYIF NE GÜÇLÜ
4=GÜÇLÜ
5= ÇOK GÜÇLÜ

		Çok zayıf	**Zayıf**	**Ne zayıf ne güçlü**	**Güçlü**	**Çok güçlü**
1	Seri araç kullanma	1	2	3	4	5
2	Trafikte tehlikeleri görme	1	2	3	4	5
3	Sabırsızlanmadan yavaş bir aracın arkasından sürme	1	2	3	4	5
4	Kaygan yolda araç kullanma	1	2	3	4	5
5	İlerideki trafik durumlarını önceden kestirme	1	2	3	4	5
6	Belirli trafik ortamlarında nasıl hareket edileceğini bilme	1	2	3	4	5
7	Yoğun trafikte sürekli şerit değiştirme	1	2	3	4	5
8	Hızlı karar alma	1	2	3	4	5
9	Sinir bozucu durumlarda sakin davranma	1	2	3	4	5
10	Aracı kontrol etme	1	2	3	4	5
11	Yeterli takip mesafesi bırakma	1	2	3	4	5
12	Koşullara göre hızı ayarlama	1	2	3	4	5
13	Geriye kaçırmadan aracı yokuşta kaldırma	1	2	3	4	5
14	Sollama	1	2	3	4	5
15	Gerektiğinde kazadan kaçınmak için yol hakkından vazgeçme	1	2	3	4	5
16	Hız sınırlarına uyma	1	2	3	4	5
17	Gereksiz risklerden kaçınma	1	2	3	4	5
18	Diğer sürücülerin hatalarını telafi edebilme	1	2	3	4	5
19	Trafik ışıklarına dikkatle uyma	1	2	3	4	5
20	Dar bir yere geri geri park edebilme	1	2	3	4	5

Appendix G: Arnett's Inventory of Sensation Seeking

Lütfen aşağıdaki ifadelerin, sizin için ne kadar doğru ya da yanlış olduğunu uygun rakamı daire içine alarak belirtin.

		Doğru	**Biraz doğru**	**Ne doğru ne yanlış**	**Biraz yanlış**	**Yanlış**
1.	Yabancı ülkeden biriyle evlenmek ilgimi çekerdi.	1	2	3	4	5
2.	Su çok soğuk olduğunda, hava sıcak olsa bile, yüzmeyi tercih etmem.	1	2	3	4	5
3.	Uzun bir kuyrukta beklemek zorunda olduğumda, genellikle sabırlıyımdır.	1	2	3	4	5
4.	Tatile çıkmadan önce plan yapmak yerine, gidilen yerde aklıma eseni yapmanın en doğrusu olduğunu düşünüyorum.	1	2	3	4	5
5.	Korku ve gerilim filmlerinden uzak dururum	1	2	3	4	5
6.	Bir grup önünde konuşmanın ya da gösteri yapmanın çok heyecan verici ve eğlenceli olduğunu düşünüyorum.	1	2	3	4	5
7.	Luna parka gidecek olsam dönme dolap ya da aşırı hızlı araçlara mutlaka binerdim.	1	2	3	4	5
8.	Uzak ve bilinmeyen yerlere seyahat etmeyi isterdim.	1	2	3	4	5
9.	Çok param olsa bile kumar oynamayı istemezdim.	1	2	3	4	5
10.	Bilinmeyen bir yeri keşfeden ilk kişi olmayı çok isterdim.	1	2	3	4	5
11.	İçinde çok sayıda patlama ve araba kovalama sahneleri olan filmlerden hoşlanırım.	1	2	3	4	5
12.	Genellikle zaman baskısı altında daha iyi çalışırım.	1	2	3	4	5
13.	Çoğu zaman, okurken ya da bir iş yaparken radyo veya televizyonun açık olmasını isterim.	1	2	3	4	5
14.	Bir trafik kazasının oluşunu görmek isterdim.	1	2	3	4	5
15.	Lokantaya gittiğimde bilmediğim bir şeyi denemek yerine bilinen yemekleri tercih ederim	1	2	3	4	5
16.	Yüksek bir uçurumun kenarından aşağıya bakma duygusu hoşuma gider.	1	2	3	4	5
17.	Eğer bir gezegene ya da aya bedava gitmek mümkün olsaydı, başvuru sırasındaki ilk kişi ben olurdum	1	2	3	4	5

18.	Bir savaşta muharebeye (çatışmaya) katılmanın ne kadar heyecan verici bir şey olabileceğini tahmin edebiliyorum.	1	2	3	4	5
19.	Tehlikeli bile olsa yeni şeyler denemek isterim	1	2	3	4	5
20	Risk alma eğilimim vardır.	1	2	3	4	5
21.	Heyecanlı işlere bayılırım.	1	2	3	4	5
22.	Ani kararlar alırım.	1	2	3	4	5
23.	Otoriteyi temsil eden kişilere hep karşı çıkarım.	1	2	3	4	5
24.	Yüksek sesle müzik dinlemekten hoşlanırım.	1	2	3	4	5

APPENDIX H: Risk Perception Inventory

Lütfen aşağıdaki ifadelerin, sizin için ne kadar doğru ya da yanlış olduğunu uygun rakamı daire içine alarak belirtin.

1= Hiç riskli değil 2 = Az riskli 3= Ne riskli ne de risksiz 4= Biraz Riskli 5= Çok riskli

		1	2	3	4	5
1.	Yağmur yağdıktan sonra ıslak yolda araç kullanmak (yağmurun hemen sonrasında değil)	O	O	O	O	O
2.	Direksiyonu tek elinizle tutarak araç kullanırkenki risk seviyesi	O	O	O	O	O
3.	Bir kamyonun arkasında kaldığınız ve karşıdan gelen araçları rahatlıkla göremediğiniz bir durumda yandan geçmek	O	O	O	O	O
4.	Arka fonda yüksek ve coşturucu bir müzik çalarken araç kullanmak	O	O	O	O	O
5.	Şehirlerarası yolda 110 km/saat hızın üzerinde araç kullanmak	O	O	O	O	O
6.	Şehirlerarası yolda <u>100 km/saat</u> hız ile araç kullanmak	O	O	O	O	O
7.	Şehirlerarası yolda 90 km/saat hız ile araç kullanmak	O	O	O	O	O
8.	Telefonun hoparlörünü kullanmak suretiyle, önemli bir konu hakkında telefonda konuşurken araç kullanmak	O	O	O	O	O
9.	Telefonun hoparlörünü <u>kullanmamak suretiyle</u>, önemli bir konu hakkında telefonda konuşurken araç kullanmak	O	O	O	O	O
10.	İki kutu bira veya iki adet başka bir alkollü içecek içtikten sonra araç kullanmak	O	O	O	O	O
11.	İki kutu bira veya <u>bir adet</u> başka bir alkollü içecek içtikten sonra araç kullanmak	O	O	O	O	O
12.	Islak yolda keskin virajda araç kullanmak	O	O	O	O	O
13.	<u>Kuru yolda</u> keskin virajda araç kullanmak	O	O	O	O	O
14.	Şehiriçi yolda 50 km/saat (hız limiti) hız ile araç kullanmak	O	O	O	O	O
15.	Şehiriçi yolda 60 km/saat (hız limitinin üzerinde) hız ile araç kullanmak	O	O	O	O	O
16.	Yanıp sönen yeşil ışığa yaklaşırken hızlanmak	O	O	O	O	O
17.	Sarı ışığa yaklaşırken hızlanmak	O	O	O	O	O
18.	Araç kullandığınız sırada telsiz (veya radyo) veya cep telefonu ile uğraşmak	O	O	O	O	O
19.	Araç kullanırken yemek yemek	O	O	O	O	O
20.	Dik bir yokuştan aşağı inerken aracı yüksek viteste kullanmak	O	O	O	O	O
21.	Islak ve kaygan bir yolda aracın hakimiyetini kaybetmek	O	O	O	O	O
22.	<u>Kuru bir yolda</u> aracın hakimiyetini kaybetmek	O	O	O	O	O
23.	Diğer sürücülerin araç kullanmalarına atfedebileceğiniz risk seviyesi	O	O	O	O	O
24.	Islak bir yolda araç kullanırken, kendi bilgi ve ustalığınızı esas	O	O	O	O	O

alarak, kendi araç kullanışınıza atfedebileceğiniz risk seviyesi

25.	Kuru bir yolda, olması gerekenden çok düşük hava basıncı olan lastiklerle araç kullanmak	O	O	O	O	O
26.	Islak bir yolda, olması gerekenden çok yüksek hava basıncı olan lastiklerle araç kullanmak	O	O	O	O	O
27.	Kör noktalar varken geri geri araç kullanmak	O	O	O	O	O
28.	Kör noktalar yokken geri geri araç kullanmak	O	O	O	O	O
29.	Düşük banketlerde yolcu indirmek/bindirmek	O	O	O	O	O
30.	Solundan geçmenin mümkün olmadığı bir durumda, yavaş giden aracın sağından geçmek	O	O	O	O	O
31.	Seyahat süresini kısaltmak amacıyla araçlar arasında zigzak yaparak (makas atarak) araç kullanmak	O	O	O	O	O
32.	Kazadan kaçınmak için gerektiğinde ani fren yapmak	O	O	O	O	O
33.	Uykusuz bir gecenin ardından araç kullanmak	O	O	O	O	O
34.	Sürüş yeteneklerinizi sınamak amacıyla meydan okuyacak şekilde araç kullanmak	O	O	O	O	O

APPENDIX I: Training Simulation Scenario

METRIC

-1 ##### EVENT LISTESI #####

-1 1. trafik ışığı değişir
500, I, 0, 0, 0, 4, 4
0, SL, -500, 200{4}, 1, 10, 0, 5, 6, 2, 1

-1 2. trafik ışığı değişmez
1000, I, 0, 0, 0, 4, 4
0, SL#2, -1000, 2{19}, 1, 10, 2, 5, 6, 2, 1

-1 3. trafik ışığı değişir
1500, I, 0, 0, 0, 4, 4
0, SL, -1500, 100{4}, 1, 10, 0, 5, 6, 2, 1

-1 4. trafik ışığı değişir
2000, I, 0, 0, 0, 4, 4
0, SL, -2000, 50{4}, 1, 10, 0, 5, 6, 2, 1

-1 5. trafik ışığı değişmez
2500, I, 0, 0, 0, 4, 4
1000, SL#5, -1500, 5{19}, 1, 10, 2, 5, 6, 2, 1

-1 sürücünün şeridinde ilerleyen araçlar

0, V, 23, 180, 2.13, 1, *1~13
0, V, 20, 120, 5.6, 1, *1~13
0, V, 20, 200, 5.6, 1, *1~13
800, V, 23, 360, 2.13, 1, *1~13
800, V, 20, 300, 5.6, 1, *1~13
3000, V, 23, 260, 2.13, 1, *1~13
3000, V, 20, 200, 5.6, 1, *1~13
4500, V, 23, 560, 2.13, 1, *1~13
4500, V, 20, 500, 5.6, 1, *1~13

-1 karşı şeritten yaklaşan araçlar

0, A, 12, 150, -2.13, *1~13
0, A, 12, 230, -2.13, *1~13
100, A, 12, 280, -2.13, *29~34
100, A, 12, 370, -2.13, *29~34
200, A, 12, 430, -2.13, *1~13
600, A, 12, 930, -2.13, *29~34
700, A, 12, 930, -2.13, *1~13
700, A, 12, 980, -2.13, *1~13

1000, A, 12, 850, -2.13, *1~13
1000, A, 12, 930, -2.13, *1~13
1100, A, 12, 880, -2.13, *29~34
1200, A, 12, 980, -2.13, *1~13
1200, A, 12, 1000, -2.13, *1~13
1800, A, 12, 770, -2.13, 3
2000, A, 12, 930, -2.13, *29~34
2200, A, 12, 930, -2.13, *1~13
2500, A, 12, 930, -2.13, *1~13
2700, A, 12, 880, -2.13, *29~34
3000, A, 12, 1000, -2.13, *1~13
2900, A, 12, 770, -2.13, 3
3200, A, 12, 1000, -2.13, *1~13
3500, A, 12, 770, -2.13, 3
3500, A, 12, 850, -2.13, *1~13
3500, A, 12, 930, -2.13, *1~13
3700, A, 12, 930, -2.13, *29~34
4000, A, 12, 930, -2.13, *1~13
4100, A, 12, 1130, -2.13, *1~13
4300, A, 12, 1180, -2.13, *29~34
4500, A, 12, 1280, -2.13, *1~13
4500, A, 12, 2000, -2.13, *1~13
5000, A, 12, 2000, -2.13, 3

-1 karşı şeritten yaklaşan araçlar

0, A, 12, 140, -5.6, *1~5
100, A, 12, 420, -5.6, *1~5
180, A, 12, 500, -5.6, *29~34
300, A, 12, 820, -5.6, *1~5
380, A, 12, 600, -5.6, *29~34
600, A, 12, 1020, -5.6, *1~5
680, A, 12, 1000, -5.6, *29~34
1000, A, 12, 950, -5.6, *1~5
1100, A, 12, 950, -5.6, *29~34
1180, A, 12, 1060, -5.6, *1~5
1180, A, 12, 1100, -5.6, *29~34
1800, A, 12, 800, -5.6, *1~5
2000, A, 12, 1020, -5.6, *1~5
2200, A, 12, 1000, -5.6, *29~34
2500, A, 12, 950, -5.6, *1~5
2700, A, 12, 950, -5.6, *29~34
3000, A, 12, 1100, -5.6, *29~34
2900, A, 12, 800, -5.6, *1~5
3000, A, 12, 1020, -5.6, *1~5
3200, A, 12, 1000, -5.6, *29~34
3500, A, 12, 950, -5.6, *1~5
3700, A, 12, 950, -5.6, *29~34

3700, A, 12, 1020, -5.6, *1~5
4000, A, 12, 1000, -5.6, *29~34
4100, A, 12, 1150, -5.6, *29~34
4100, A, 12, 1350, -5.6, *1~5
4300, A, 12, 1350, -5.6, *29~34
4500, A, 12, 1500, -5.6, *29~34
5000, A, 12, 1500, -5.6, *1~5

-1 4 SERITLI SEHIR ICI YOL

0, ROAD, 3.66, 4, 2, 2, 0.1, 3.05, 3.05, 0.12, 0.12, 0, -1, -1, 0, 0, 0, 0, 0, 3.05, 0, 3.05, 0, 0, 0, C:\STISIM\Data\Textures\Road07.Jpg, 24, C:\STISIM\Data\Textures\Road07.Jpg, 12, C:\STISIM\Data\Textures\Road07.Jpg, 12, C:\STISIM\Data\Textures\Road01.Jpg, 12,

-1 VIRAJLI YOLLAR

200, c, 0, 20, 100, 100, -3E-03
600, c, 0, 20, 100, 100, 4E-03
1100, c, 0, 20, 150, 50, 5E-03
1550, c, 0, 20, 100, 50, -3E-03
2050, c, 0, 20, 50, 100, 4E-03
2250, c, 0, 20, 50, 50, -2E-03
2600, c, 0, 20, 150, 50, 5E-03
-1 5200, c, 0, 20, 50, 150, 3E-03
-1 5600, c, 0, 20, 100, 100, 2E-03

3000, ES

APPENDIX J: Driving Simulation Scenario

METRIC

-1 DATA
0, BSAV, 0, 0.5, 0, 6, 2, 3, 4, 5, 11, 13, 14, 18, 25, 35, 36, 37, 38
9000, ESAV

-1 EVENTS
-1 EVENT #1
0, V, 0, 100, 8, 1, *18~35, 50{4}, -2.4, 15, 2
-1 EVENT #2
400, I, 0, 0, 0, 4, 4
0, SL, -400, 50{4}, 1, 12, 0, 5, 6, 2, 1
-1 EVENT #3
200, V, 0, 480, 8, 1, *18~35, 50{4}, -6, 15.27, 2
-1 EVENT #4
900, I, 0, 0, 0, 4, 4
0, SL, -900, 50{4}, 1, 10, 0, 5, 6, 2, 1
-1 0, PED, 889.86, 50{4}, 1.37, -8.53, L, *1, Left PED
0, PED, 891.08, 50{4}, 1.22, 8.53, R, *2, Right Ped
0, PED, 910, 50{4}, 1.22, -8.53, L, *4
-1 EVENT #5
0, PED, 1310, 175{4}, 1.37, -8.53, L, *3, Left PED
-1 EVENT #6
0, PED, 1300, 75{4}, 1, 8.53, R, *4, Right Ped
-1 EVENT #7
0, PED, 1400, 50{4}, 1.37, 8.53, R, 2, right PED
-1 EVENT #8
1500, I, 0, 0, 0, 4, 4
0, SL, -1500, 50{4}, 1, 10, 0, 5, 6, 2, 1
0, PED, 1489.86, 40{4}, 1.37, 8.53, R, *4, right PED
-1 0, PED, 1491.08, 40{4}, 1.22, -8.53, L, *3, left Ped
0, PED, 1510, 40{4}, 1.22, 8.53, R, *2
-1 EVENT #9
0, PED, 1600, 50{4}, 1.22, 8.53, R, *1~4, Right Ped
-1 EVENT #10
0, PED, 1980, 160{4}, 1.6, -8.53, L, *1, Left PED
0, PED, 2010, 170{4}, 1.6, -8.53, L, *4
0, PED, 1950, 100{4}, 1.6, 8.53, R, *3, Right Ped
-1 EVENT #11
1500, V, 0, 570, 9, 1, *18~35, 50{4}, -2.65, 9, 2
-1 EVENT #12
3500, I, 0, 0, 0, 4, 4
2000, SL, -1500, 100{4}, 1, 10, 0, 5, 6, 2, 1
-1 EVENT #13
3500, V, 0, 450, 8, 1, *18~35, 50{4}, -2.4, 15, 2
-1 EVENT #14

4250, I, 0, 0, 0, 4, 4
0, SL, -4250, 100{4}, 1, 10, 0, 5, 6, 2, 1

-1 Cars at the first intersection
0, CT, 398.17, 5, -400, 17, L, *21~27;30~32, 1, 1
0, CT, 394.51, 5, -407, 17, L, *21~23;19;35, 1, 1
0, CT, 394.51, 5, -420, 17, L, *21~23;19;35, 1, 1
0, CT, 394.51, 5, -500, 17, L, *21~23;19;35, 1, 1
0, CT, 394.51, 5, -520, 17, L, *21~23;19;35, 1, 1

0, CT, 401.83, 5, 400, 17, R, *21~27;30~32, 1, 1
0, CT, 405.49, 5, 400, 17, R, *21~23;19;35, 1, 1
0, CT, 401.83, 5, 407, 17, R, *21~27;30~32, 1, 1
0, CT, 405.49, 5, 413, 17, R, *21~23;19;35, 1, 1
0, CT, 401.83, 5, 500, 17, R, *21~27;30~32, 1, 1
0, CT, 405.49, 5, 530, 17, R, *21~23;19;35, 1, 1

-1 Cars at the second intersection
0, CT, 898.17, 5, -900, 17, L, *21~27;30~32, 1, 1
0, CT, 894.51, 5, -900, 17, L, *21~27;30~32, 1, 1
0, CT, 894.51, 5, -907, 17, L, *21~23;19;35, 1, 1
0, CT, 894.51, 5, -920, 17, L, *21~23;19;35, 1, 1
0, CT, 901.83, 5, 900, 17, R, *21~27;30~32, 1, 1
0, CT, 905.49, 5, 900, 17, R, *21~23;19;35, 1, 1
0, CT, 901.83, 5, 907, 17, R, *21~27;30~32, 1, 1
0, CT, 905.49, 5, 920, 17, R, *21~23;19;35, 1, 1

-1 Cars at the fourth intersection
0, CT, 3498.17, 5, -3500, 17, L, *21~27;30~32, 1, 1
0, CT, 3494.51, 5, -3507, 17, L, *21~23;19;35, 1, 1
0, CT, 3494.51, 5, -3520, 17, L, *21~23;19;35, 1, 1
0, CT, 3494.51, 5, -3600, 17, L, *21~23;19;35, 1, 1
0, CT, 3494.51, 5, -3620, 17, L, *21~23;19;35, 1, 1
0, CT, 3505.49, 5, 3513, 17, R, *21~23;19;35, 1, 1
0, CT, 3501.83, 5, 3600, 17, R, *21~27;30~32, 1, 1
0, CT, 3505.49, 5, 3630, 17, R, *21~23;19;35, 1, 1

-1 Sürücünün şeridinde ilerleyen araçlar
0, V, *13, -280, 2.13, 1, *1~13
0, V, *13, -360, 2.13, 1, *1~13
0, V, *13, -400, 2.13, 1, *1~13
0, V, *12, -50, 5.6, 1, *1~13
0, V, *12, -150, 5.6, 1, *1~13
2300, V, 14, 250, 2.13, 1, *1~13
2300, V, 14, 300, 2.13, 1, *1~13
4300, V, 18, 300, 5.6, 1, *1~13
4300, V, 20, 300, 2.13, 1, *1~13

5300, V, 20, 270, 2.13, 1, *1~13
5300, V, 20, 340, 2.13, 1, *1~13
5300, V, 20, 400, 2.13, 1, *1~13
6300, V, 20, 300, 2.13, 1, *1~13
6300, V, 20, 350, 2.13, 1, *1~13
6800, V, 20, 300, 2.13, 1, *1~13
6800, V, 20, 420, 2.13, 1, *1~13
7000, V, 20, 350, 2.13, 1, *1~13

-1 Karşı şeritten ilerleyen araçlar

0, A, 12, 120, -2.13, 3
0, A, 12, 150, -2.13, *1~13
0, A, 12, 230, -2.13, *1~13
100, A, 12, 280, -2.13, *29~34
100, A, 12, 370, -2.13, *29~34
200, A, 12, 430, -2.13, *1~13
200, A, 12, 480, -2.13, *1~13
200, A, 12, 590, -2.13, *1~13
-1 400, A, 12, 820, -2.13, *1~13
600, A, 12, 930, -2.13, *29~34
700, A, 12, 930, -2.13, *1~13
700, A, 12, 980, -2.13, *1~13
700, A, 12, 1000, -2.13, *1~13
1000, A, 12, 770, -2.13, 3
1000, A, 12, 850, -2.13, *1~13
1000, A, 12, 930, -2.13, *1~13
1100, A, 12, 880, -2.13, *29~34
1100, A, 12, 930, -2.13, *29~34
1200, A, 12, 930, -2.13, *1~13
1200, A, 12, 980, -2.13, *1~13
1200, A, 12, 1000, -2.13, *1~13
1800, A, 12, 770, -2.13, 3
1800, A, 12, 850, -2.13, *1~13
1800, A, 12, 930, -2.13, *1~13
2000, A, 12, 880, -2.13, *29~34
2000, A, 12, 930, -2.13, *29~34
2200, A, 12, 930, -2.13, *1~13
2200, A, 12, 980, -2.13, *1~13
2200, A, 12, 1000, -2.13, *1~13
2500, A, 12, 770, -2.13, 3
2500, A, 12, 850, -2.13, *1~13
2500, A, 12, 930, -2.13, *1~13

2700, A, 12, 880, -2.13, *29~34
2700, A, 12, 930, -2.13, *29~34
3000, A, 12, 930, -2.13, *1~13
3000, A, 12, 980, -2.13, *1~13

3000, A, 12, 1000, -2.13, *1~13
2900, A, 12, 770, -2.13, 3
2900, A, 12, 850, -2.13, *1~13
2900, A, 12, 930, -2.13, *1~13
3000, A, 12, 880, -2.13, *29~34
3200, A, 12, 930, -2.13, *1~13
3200, A, 12, 980, -2.13, *1~13
3200, A, 12, 1000, -2.13, *1~13

3500, A, 12, 770, -2.13, 3
3500, A, 12, 850, -2.13, *1~13
3500, A, 12, 930, -2.13, *1~13
3700, A, 12, 880, -2.13, *29~34
3700, A, 12, 930, -2.13, *29~34
4000, A, 12, 930, -2.13, *1~13
4000, A, 12, 980, -2.13, *1~13
4000, A, 12, 1000, -2.13, *1~13
4100, A, 12, 1000, -2.13, 3
4100, A, 12, 1050, -2.13, *1~13
4100, A, 12, 1130, -2.13, *1~13
4300, A, 12, 1180, -2.13, *29~34
4300, A, 12, 1230, -2.13, *29~34
4500, A, 12, 1230, -2.13, *1~13
4500, A, 12, 1280, -2.13, *1~13
4500, A, 12, 2000, -2.13, *1~13
5000, A, 12, 2000, -2.13, 3
5000, A, 12, 2050, -2.13, *1~13
5000, A, 12, 2100, -2.13, 3
5000, A, 12, 2150, -2.13, *1~13
5000, A, 12, 2175, -2.13, 3
5000, A, 12, 2200, -2.13, *1~13
5500, A, 12, 770, -2, 3
5500, A, 12, 850, -2, *1~13
5500, A, 12, 930, -2, *1~13
6000, A, 12, 880, -2, *29~34
6000, A, 12, 930, -2, *29~34
6200, A, 12, 930, -2, *1~13
6200, A, 12, 980, -2, *1~13
6200, A, 12, 1000, -2, *1~13
6500, A, 12, 770, -2, 3
6500, A, 12, 850, -2, *1~13
6500, A, 12, 930, -2, *1~13
6700, A, 12, 880, -2, *29~34
6700, A, 12, 930, -2, *29~34
7000, A, 12, 930, -2, *1~13
7000, A, 12, 980, -2, *1~13
7000, A, 12, 1000, -2, *1~13
7100, A, 12, 1000, -2, 3

7100, A, 12, 1050, -2, *1~13
7100, A, 12, 1130, -2, *1~13
7300, A, 12, 1180, -2, *29~34
7300, A, 12, 1230, -2, *29~34
7400, A, 12, 1130, -2, *1~13
7400, A, 12, 1180, -2, *29~34
7400, A, 12, 1230, -2, *29~34
7800, A, 12, 1130, -2, *1~13
7800, A, 12, 1180, -2, *29~34
7800, A, 12, 1230, -2, *29~34
0, A, 12, 140, -5.6, *1~5
0, A, 12, 200, -5.6, *29~34
0, A, 12, 270, -5.6, *1~5
100, A, 12, 350, -5.6, *29~34
100, A, 12, 420, -5.6, *1~5
180, A, 12, 500, -5.6, *29~34
180, A, 12, 560, -5.6, *1~5
180, A, 12, 595, -5.6, *29~34
300, A, 12, 820, -5.6, *1~5
380, A, 12, 600, -5.6, *29~34
380, A, 12, 660, -5.6, *1~5
380, A, 12, 695, -5.6, *29~34
380, A, 12, 760, -5.6, *1~5
380, A, 12, 795, -5.6, *29~34
500, A, 12, 950, -5.6, *1~5
600, A, 12, 950, -5.6, *29~34
600, A, 12, 1020, -5.6, *1~5
680, A, 12, 1000, -5.6, *29~34
680, A, 12, 1060, -5.6, *1~5
680, A, 12, 1100, -5.6, *29~34
1000, A, 12, 800, -5.6, *1~5
1000, A, 12, 900, -5.6, *29~34
1000, A, 12, 950, -5.6, *1~5
1100, A, 12, 950, -5.6, *29~34
1100, A, 12, 1020, -5.6, *1~5
1180, A, 12, 1000, -5.6, *29~34
1180, A, 12, 1060, -5.6, *1~5
1180, A, 12, 1100, -5.6, *29~34
1800, A, 12, 800, -5.6, *1~5
1800, A, 12, 900, -5.6, *29~34
1800, A, 12, 950, -5.6, *1~5
2000, A, 12, 950, -5.6, *29~34
2000, A, 12, 1020, -5.6, *1~5
2200, A, 12, 1000, -5.6, *29~34
2200, A, 12, 1060, -5.6, *1~5
2200, A, 12, 1100, -5.6, *29~34
2500, A, 12, 800, -5.6, *1~5
2500, A, 12, 900, -5.6, *29~34

2500, A, 12, 950, -5.6, *1~5
2700, A, 12, 950, -5.6, *29~34
2700, A, 12, 1020, -5.6, *1~5
3000, A, 12, 1000, -5.6, *29~34
3000, A, 12, 1060, -5.6, *1~5
3000, A, 12, 1100, -5.6, *29~34
2900, A, 12, 800, -5.6, *1~5
2900, A, 12, 900, -5.6, *29~34
2900, A, 12, 950, -5.6, *1~5
3000, A, 12, 950, -5.6, *29~34
3000, A, 12, 1020, -5.6, *1~5
3200, A, 12, 1000, -5.6, *29~34
3200, A, 12, 1060, -5.6, *1~5
3200, A, 12, 1100, -5.6, *29~34
3500, A, 12, 900, -5.6, *29~34
3500, A, 12, 950, -5.6, *1~5
3700, A, 12, 950, -5.6, *29~34
3700, A, 12, 1020, -5.6, *1~5
4000, A, 12, 1000, -5.6, *29~34
4000, A, 12, 1060, -5.6, *1~5
4000, A, 12, 1100, -5.6, *29~34
4100, A, 12, 1100, -5.6, *1~5
4100, A, 12, 1150, -5.6, *29~34
4100, A, 12, 1350, -5.6, *1~5
4300, A, 12, 1350, -5.6, *29~34
4300, A, 12, 1400, -5.6, *1~5
4500, A, 12, 1400, -5.6, *29~34
4500, A, 12, 1460, -5.6, *1~5
4500, A, 12, 1500, -5.6, *29~34
5000, A, 12, 1500, -5.6, *1~5
5000, A, 12, 1600, -5.6, *29~34
5000, A, 12, 1650, -5.6, *1~5
5000, A, 12, 1700, -5.6, *1~5
5000, A, 12, 1770, -5.6, *29~34

-1 ROADS

-1 4 SERITLI SEHIR ICI YOL

0, ROAD, 3.66, 4, 2, 2, 0.1, 3.05, 3.05, 0.12, 0.12, 0, -1, -1, 0, 0, 0, 0, 0, 3.05, 0, 3.05, 1.22, 0, 0, C:\STISIM\Data\Textures\Road07.Jpg, 24, C:\STISIM\Data\Textures\Road07.Jpg, 12, C:\STISIM\Data\Textures\Road07.Jpg, 12, C:\STISIM\Data\Textures\Road01.Jpg, 12,
0, TREE, 50, 0, 1, 12.19, 12.5, 0

0, SIGN, 100, 60, C:\STISIM\Data\EuroSigns\EuroSpeed_050.Lmm, 1, 0, 0
0, LS, 55, 60

-1 6 SERITLI SEHIRLER ARASI YOL
4500, ROAD, 3.66, 6, 3, 3, 0.15, 3.05, 3.05, 0.12, 0.12, 152.4, -1, -1, 0, 3.05, 0, 3.05, 0, 3.05, 0, 3.05, 0, 0, 0, C:\STISIM\Data\Textures\Grass01.Jpg, 12, 0, 0, C:\STISIM\Data\Textures\Grass04.Jpg, 12

4500, TREE, 500, 0, *1~18;-15;-4, 12, 30.48, 0

3500, SIGN, 100, 1000, C:\STISIM\Data\EuroSigns\EuroSpeed_100.Lmm, 1, 0, 0

3650, LS, 110, 1000

-1 TEK SERIT KASABANIN YOLLARI

6000, ROAD, 3.66, 2, 1, 1, 0.3, 3.05, 3.05, 0.15, 0.15, 100, -1, -1, -5, 1.83, -5, 1.83, -30, 3.05, -30, 3.05, 0, 0, 0, C:\STISIM\Data\Textures\Grass01.Jpg, 12, 0, 0, C:\STISIM\Data\Textures\Grass04.Jpg, 12

5050, SIGN, 100, 1000, C:\STISIM\Data\EuroSigns\EuroSpeed_090.Lmm, 1, 0, 0

5200, LS, 100, 1000

-1 CURVED ROADS

-1 SEHIRICI
1800, c, 0, 150, 200, 150, 2E-03
2500, c, 0, 20, 300, 100, -2.5E-03
3500, c, 0, 20, 200, 50, 3E-03
4000, c, 0, 20, 100, 20, -2E-03

-1 KASABA

4800, SIGN, 11, 1000, 0, 1
6000, c, 0, 150, 200, 150, 8E-03
5000, SIGN, 5, 1000, 0, 1
6800, c, 0, 20, 300, 100, -5E-03
5600, SIGN, 4, 1000, 0, 1
7600, c, 0, 20, 200, 50, 3E-03
6600, SIGN, 5, 1000, 0, 1
8200, c, 0, 20, 300, 100, -4E-03
7000, SIGN, 4, 1000, 0, 1
7200, SIGN, 4, 1000, 0, 1

-1 BUILDINGS

0, BLDG, -10, 15, G37
0, BLDG, -60, 15, G24
0, BLDG, -120, 20, G17

0, BLDG, -170, 15, G37
0, BLDG, -220, 15, G24
0, BLDG, -270, 20, G17
0, BLDG, 20, 15, G26
0, BLDG, 70, 15, G22
0, BLDG, 130, 15, G33
0, BLDG, 180, 20, G39
0, BLDG, 230, 15, G37
0, BLDG, 280, 15, G24
0, BLDG, 340, 20, G17
0, BLDG, 430, 15, G22
0, BLDG, 480, 15, G38
0, BLDG, 525, 15, s11
0, BLDG, 565, 20, s16
0, BLDG, 610, 15, G5
0, BLDG, 645, 15, B17
0, BLDG, 685, 15, G31
0, BLDG, 730, 15, G34
0, BLDG, 780, 15, G38
0, BLDG, 830, 15, G36
0, BLDG, 870, 15, G22
400, BLDG, 530, 15, G38
-1 400, BLDG, 570, 15, s11
400, BLDG, 625, 20, s16
400, BLDG, 670, 15, G5
400, BLDG, 720, 15, B22
400, BLDG, 780, 15, G31
400, BLDG, 830, 15, G35
400, BLDG, 910, 15, U4
400, BLDG, 980, 15, G10
400, BLDG, 1030, 15, G39
-1 400, BLDG, 1100, 15, G35
400, BLDG, 1170, 15, G20
400, BLDG, 1300, 15, G16
400, BLDG, 1400, 15, G1
400, BLDG, 1450, 15, B21
400, BLDG, 1550, 15, B38
1500, BLDG, 520, 15, G26
1500, BLDG, 570, 15, G22
1500, BLDG, 630, 15, G33
1500, BLDG, 680, 20, G39
1500, BLDG, 730, 15, G37
1500, BLDG, 780, 15, G24
1500, BLDG, 840, 20, G17
1500, BLDG, 890, 15, G22
1500, BLDG, 930, 15, G22
1500, BLDG, 980, 15, G38
1500, BLDG, 1025, 15, s11

1500, BLDG, 1065, 20, s16
1500, BLDG, 1110, 15, G5
1500, BLDG, 1145, 15, B17
1500, BLDG, 1185, 15, G31
1500, BLDG, 1230, 15, G34
1500, BLDG, 1280, 15, G38
1500, BLDG, 1330, 15, G36
1500, BLDG, 1370, 15, G22
1500, BLDG, 1420, 15, G35
1500, BLDG, 1470, 15, U4
1500, BLDG, 1530, 15, G38
1500, BLDG, 1570, 15, s11
1500, BLDG, 1625, 20, s16
1500, BLDG, 1670, 15, G5
1500, BLDG, 1720, 15, B22
1500, BLDG, 1780, 15, G31
1500, BLDG, 1830, 15, G35
1500, BLDG, 1910, 15, U4
-1 2000, BLDG, 1520, 15, B24
2000, BLDG, 1590, 15, B23
2000, BLDG, 1660, 15, B19
2000, BLDG, 1780, 20, B16
2000, BLDG, 1850, 15, B21
2000, BLDG, 1950, 15, G24
2000, BLDG, 2050, 20, G17
2000, BLDG, 2100, 15, G22
2000, BLDG, 2150, 15, G22
2000, BLDG, 2200, 15, G38
2000, BLDG, 2300, 15, s11
2000, BLDG, 2350, 20, s16
2000, BLDG, 2420, 15, G5
0, BLDG, -20, -15, G31
0, BLDG, -70, -15, G35
0, BLDG, -130, -15, G31
0, BLDG, -180, -15, G35
0, BLDG, 30, -15, G38
0, BLDG, 70, -15, s11
0, BLDG, 125, -20, s16
0, BLDG, 170, -15, G5
0, BLDG, 220, -15, B22
0, BLDG, 280, -15, G31
0, BLDG, 330, -15, G35
0, BLDG, 420, -15, G26
0, BLDG, 450, -15, G6
0, BLDG, 510, -15, G33
0, BLDG, 560, -20, G39
0, BLDG, 600, -15, G37
0, BLDG, 660, -15, G24

0, BLDG, 710, -15, B12
0, BLDG, 750, -15, G31
0, BLDG, 790, -15, B24
0, BLDG, 850, -15, B21
400, BLDG, 520, -15, G26
-1 400, BLDG, 570, -15, G22
400, BLDG, 630, -15, G33
400, BLDG, 680, -20, G39
400, BLDG, 730, -15, G37
400, BLDG, 780, -15, G24
400, BLDG, 840, -20, G17
400, BLDG, 890, -15, G22
400, BLDG, 930, -15, G22
400, BLDG, 980, -15, G38
400, BLDG, 1025, -15, s11
400, BLDG, 1065, -20, s16
400, BLDG, 1120, -15, G5
400, BLDG, 1145, -15, B17
400, BLDG, 1185, -15, G31
400, BLDG, 1230, -15, G34
400, BLDG, 1280, -15, G38
400, BLDG, 1330, -15, G36
400, BLDG, 1370, -15, G22
400, BLDG, 1420, -15, G35
400, BLDG, 1470, -15, U4
1500, BLDG, 530, -15, G38
1500, BLDG, 570, -15, s11
1500, BLDG, 625, -20, s16
1500, BLDG, 670, -15, G5
1500, BLDG, 720, -15, B22
1500, BLDG, 780, -15, G31
1500, BLDG, 830, -15, G35
1500, BLDG, 910, -15, U4
1500, BLDG, 980, -15, G10
1500, BLDG, 1030, -15, G39
1500, BLDG, 1100, -15, G35
1500, BLDG, 1170, -15, G20
1500, BLDG, 1300, -15, G16
1500, BLDG, 1400, -15, G1
1500, BLDG, 1450, -15, B21
1500, BLDG, 1550, -15, B38
1500, BLDG, 1680, -20, G39
1500, BLDG, 1730, -15, G37
1500, BLDG, 1780, -15, G24
1500, BLDG, 1840, -20, G17
1500, BLDG, 1890, -15, G22
1500, BLDG, 1930, -15, G22
2000, BLDG, 1600, -15, B17

2000, BLDG, 1640, -15, G31
2000, BLDG, 1700, -15, G34
2000, BLDG, 1750, -15, G38
2000, BLDG, 1890, -15, G36
2000, BLDG, 1970, -15, G22
2000, BLDG, 2020, -15, G35
2000, BLDG, 2070, -15, U4
2000, BLDG, 2130, -15, G38
2000, BLDG, 2300, -15, s11
2000, BLDG, 2365, -20, s16
2000, BLDG, 2410, -15, G5

-1 ----------------- PARKED CARS -----------------
0, V, 0, -10, 9, 1, *18~35
0, V, 0, -25, 9, 1, *18~35
0, V, 0, 50, 9, 1, *18~35
0, V, 0, 65, 9, 1, *18~35
0, V, 0, 90, 9, 1, *18~35
0, V, 0, 140, 9, 1, *18~35
0, V, 0, 155, 9, 1, *18~35
0, V, 0, 170, 9, 1, *18~35
0, V, 0, 185, 9, 1, *18~35
0, V, 0, 200, 9, 1, *18~35
0, V, 0, 260, 9, 1, *18~35
0, V, 0, 285, 9, 1, *18~35
0, V, 0, 315, 9, 1, *18~35
0, V, 0, 350, 9, 1, *18~35
0, V, 0, 370, 9, 1, *18~35
200, V, 0, 230, 9, 1, *18~35
200, V, 0, 260, 9, 1, *18~35
200, V, 0, 280, 9, 1, *18~35
200, V, 0, 310, 9, 1, *18~35
200, V, 0, 335, 9, 1, *18~35
200, V, 0, 460, 9, 1, *18~35
200, V, 0, 510, 9, 1, *18~35
200, V, 0, 535, 9, 1, *18~35
200, V, 0, 560, 9, 1, *18~35
200, V, 0, 600, 9, 1, *18~35
200, V, 0, 650, 9, 1, *18~35
200, V, 0, 670, 9, 1, *18~35
700, V, 0, 230, 9, 1, *18~35
700, V, 0, 240, 9, 1, *18~35
700, V, 0, 250, 9, 1, *18~35
700, V, 0, 310, 9, 1, *18~35
700, V, 0, 335, 9, 1, *18~35
700, V, 0, 460, 9, 1, *18~35
700, V, 0, 510, 9, 1, *18~35
700, V, 0, 535, 9, 1, *18~35

700, V, 0, 560, 9, 1, *18~35
700, V, 0, 650, 9, 1, *18~35
700, V, 0, 710, 9, 1, *18~35
700, V, 0, 725, 9, 1, *18~35
700, V, 0, 750, 9, 1, *18~35
700, V, 0, 765, 9, 1, *18~35
700, V, 0, 840, 9, 1, *18~35
700, V, 0, 855, 9, 1, *18~35
700, V, 0, 870, 9, 1, *18~35
700, V, 0, 885, 9, 1, *18~35
700, V, 0, 960, 9, 1, *18~35
700, V, 0, 985, 9, 1, *18~35
700, V, 0, 1015, 9, 1, *18~35
700, V, 0, 1050, 9, 1, *18~35
700, V, 0, 1090, 9, 1, *18~35
700, V, 0, 1130, 9, 1, *18~35
700, V, 0, 1160, 9, 1, *18~35
700, V, 0, 1200, 9, 1, *18~35
700, V, 0, 1250, 9, 1, *18~35
700, V, 0, 1265, 9, 1, *18~35
1500, V, 0, 530, 9, 1, *18~35
1500, V, 0, 600, 9, 1, *18~35
1500, V, 0, 650, 9, 1, *18~35
1500, V, 0, 690, 9, 1, *18~35
1500, V, 0, 720, 9, 1, *18~35
1500, V, 0, 755, 9, 1, *18~35
1500, V, 0, 820, 9, 1, *18~35
1500, V, 0, 865, 9, 1, *18~35
1500, V, 0, 900, 9, 1, *18~35
1500, V, 0, 960, 9, 1, *18~35
1500, V, 0, 995, 9, 1, *18~35
1500, V, 0, 1050, 9, 1, *18~35
1500, V, 0, 1100, 9, 1, *18~35

1500, V, 0, 1300, 9, 1, *18~35
1500, V, 0, 1400, 9, 1, *18~35
1500, V, 0, 1450, 9, 1, *18~35
1500, V, 0, 1530, 9, 1, *18~35
1500, V, 0, 1600, 9, 1, *18~35
1500, V, 0, 1650, 9, 1, *18~35
1500, V, 0, 1690, 9, 1, *18~35
1500, V, 0, 1720, 9, 1, *18~35
1500, V, 0, 1755, 9, 1, *18~35
1500, V, 0, 1820, 9, 1, *18~35
1500, V, 0, 1865, 9, 1, *18~35
1500, V, 0, 1900, 9, 1, *18~35
1500, V, 0, 1960, 9, 1, *18~35
3000, V, 0, 570, 9, 1, *18~35

3000, V, 0, 630, 9, 1, *18~35
3000, V, 0, 790, 9, 1, *18~35
3000, V, 0, 840, 9, 1, *18~35
3000, V, 0, 930, 9, 1, *18~35
3000, V, 0, 530, 9, 1, *18~35
3000, V, 0, 600, 9, 1, *18~35
3000, V, 0, 650, 9, 1, *18~35
3000, V, 0, 690, 9, 1, *18~35
3000, V, 0, 720, 9, 1, *18~35
3000, V, 0, 755, 9, 1, *18~35
3000, V, 0, 820, 9, 1, *18~35
3000, V, 0, 865, 9, 1, *18~35
3000, V, 0, 900, 9, 1, *18~35
3000, V, 0, 995, 9, 1, *18~35
3500, V, 0, 530, 9, 1, *18~35
3500, V, 0, 570, 9, 1, *18~35
3500, V, 0, 600, 9, 1, *18~35
3500, V, 0, 630, 9, 1, *18~35
3500, V, 0, 650, 9, 1, *18~35
3500, V, 0, 690, 9, 1, *18~35
3500, V, 0, 700, 9, 1, *18~35
3500, V, 0, 790, 9, 1, *18~35
3500, V, 0, 800, 9, 1, *18~35
3500, V, 0, 820, 9, 1, *18~35
3500, V, 0, 840, 9, 1, *18~35
3500, V, 0, 865, 9, 1, *18~35
3500, V, 0, 900, 9, 1, *18~35
3500, V, 0, 930, 9, 1, *18~35
3500, V, 0, 960, 9, 1, *18~35
3500, V, 0, 995, 9, 1, *18~35
0, A, 0, -5, -9, *18~35
0, A, 0, -20, -9, *18~35
0, A, 0, 40, -9, *18~35
0, A, 0, 65, -9, *18~35
0, A, 0, 90, -9, *18~35
0, A, 0, 105, -9, *18~35
0, A, 0, 120, -9, *18~35
0, A, 0, 135, -9, *18~35
0, A, 0, 150, -9, *18~35
0, A, 0, 185, -9, *18~35
0, A, 0, 210, -9, *18~35
0, A, 0, 235, -9, *18~35
0, A, 0, 270, -9, *18~35
0, A, 0, 300, -9, *18~35
0, A, 0, 315, -9, *18~35
0, A, 0, 345, -9, *18~35
200, A, 0, 250, -9, *18~35
200, A, 0, 300, -9, *18~35

200, A, 0, 360, -9, *18~35
200, A, 0, 400, -9, *18~35
200, A, 0, 430, -9, *18~35
200, A, 0, 500, -9, *18~35
200, A, 0, 600, -9, *18~35
200, A, 0, 650, -9, *18~35
700, A, 0, 250, -9, *18~35
700, A, 0, 300, -9, *18~35
700, A, 0, 360, -9, *18~35
700, A, 0, 400, -9, *18~35
700, A, 0, 430, -9, *18~35
700, A, 0, 500, -9, *18~35
700, A, 0, 600, -9, *18~35
700, A, 0, 650, -9, *18~35
700, A, 0, 700, -9, *18~35
700, A, 0, 720, -9, *18~35
700, A, 0, 840, -9, *18~35
700, A, 0, 865, -9, *18~35
700, A, 0, 900, -9, *18~35
700, A, 0, 1050, -9, *18~35
700, A, 0, 1100, -9, *18~35
700, A, 0, 1135, -9, *18~35
700, A, 0, 1150, -9, *18~35
700, A, 0, 1205, -9, *18~35
700, A, 0, 1230, -9, *18~35
700, A, 0, 1260, -9, *18~35
1500, A, 0, 550, -9, *18~35
1500, A, 0, 620, -9, *18~35
1500, A, 0, 740, -9, *18~35
1500, A, 0, 780, -9, *18~35
1500, A, 0, 820, -9, *18~35
1500, A, 0, 860, -9, *18~35
1500, A, 0, 900, -9, *18~35
1500, A, 0, 935, -9, *18~35
1500, A, 0, 960, -9, *18~35
1500, A, 0, 1000, -9, *18~35
1500, A, 0, 1210, -9, *18~35
1500, A, 0, 1280, -9, *18~35
1500, A, 0, 1350, -9, *18~35
1500, A, 0, 1400, -9, *18~35
1500, A, 0, 1450, -9, *18~35
1500, A, 0, 1480, -9, *18~35
1500, A, 0, 1550, -9, *18~35
1500, A, 0, 1620, -9, *18~35
1500, A, 0, 1740, -9, *18~35
1500, A, 0, 1780, -9, *18~35
1500, A, 0, 1820, -9, *18~35
1500, A, 0, 1860, -9, *18~35

1500, A, 0, 1900, -9, *18~35
1500, A, 0, 1935, -9, *18~35
3000, A, 0, 550, -9, *18~35
3000, A, 0, 620, -9, *18~35
3000, A, 0, 740, -9, *18~35
3000, A, 0, 780, -9, *18~35
3000, A, 0, 820, -9, *18~35
3000, A, 0, 860, -9, *18~35
3000, A, 0, 900, -9, *18~35
3000, A, 0, 935, -9, *18~35
3000, A, 0, 960, -9, *18~35
3000, A, 0, 570, -9, *18~35
3000, A, 0, 640, -9, *18~35
3000, A, 0, 680, -9, *18~35
3000, A, 0, 760, -9, *18~35
3000, A, 0, 840, -9, *18~35
3000, A, 0, 880, -9, *18~35
3500, A, 0, 550, -9, *18~35
3500, A, 0, 620, -9, *18~35
3500, A, 0, 810, -9, *18~35
3500, A, 0, 850, -9, *18~35
3500, A, 0, 880, -9, *18~35
3500, A, 0, 900, -9, *18~35
3500, A, 0, 935, -9, *18~35
3500, A, 0, 960, -9, *18~35
3500, A, 0, 570, -9, *18~35
3500, A, 0, 640, -9, *18~35
3500, A, 0, 680, -9, *18~35
3500, A, 0, 840, -9, *18~35
3500, A, 0, 880, -9, *18~35

-1 ----------------- PEDESTRIANS -----------------
0, PED, 90, 7, 1.5, 13, F, *1~10,0
0, PED, 110, 7, 1.5, 12, B, *1~10,0
0, PED, 120, 7, 1.5, 13, B, *1~10,0
0, PED, 140, 7, 1.5, 12, F, *1~10,0
0, PED, 150, 7, 1.5, 11, B, *1~10,0
0, PED, 210, 7, 1.5, 12, F, *1~10,0
0, PED, 260, 7, 1.5, 13, B, *1~10,0
0, PED, 270, 7, 1.5, 12, B, *1~10,0
0, PED, 290, 7, 1.5, 13, F, *1~10,0
0, PED, 310, 7, 1.5, 11, B, *1~10,0
0, PED, 330, 7, 1.5, 12, F, *1~10,0
0, PED, 350, 7, 1.5, 13, F, *1~10,0
0, PED, 370, 7, 1.5, 12, F, *1~10,0
0, PED, 80, 7, 1.5, 13, F, *1~10,0
0, PED, 105, 7, 1.5, 12, B, *1~10,0

0, PED, 115, 7, 1.5, 11, B, *1~10,0
0, PED, 134, 7, 1.5, 12, F, *1~10,0
0, PED, 160, 7, 1.5, 11, B, *1~10,0
0, PED, 220, 7, 1.5, 12, F, *1~10,0
0, PED, 250, 7, 1.5, 13, B, *1~10,0
0, PED, 275, 7, 1.5, 12, B, *1~10,0
0, PED, 295, 7, 1.5, 12, F, *1~10,0
0, PED, 320, 7, 1.5, 11, B, *1~10,0
0, PED, 340, 7, 1.5, 12, F, *1~10,0
0, PED, 360, 7, 1.5, 13, F, *1~10,0
0, PED, 380, 7, 1.5, 12, F, *1~10,0
400, PED, 50, 7, 1.5, 11, F, *1~10,0
400, PED, 70, 7, 1.5, 12, B, *1~10,0
400, PED, 90, 7, 1.5, 13, F, *1~10,0
400, PED, 110, 7, 1.5, 12, B, *1~10,0
400, PED, 120, 7, 1.5, 13, B, *1~10,0
400, PED, 140, 7, 1.5, 12, F, *1~10,0
400, PED, 150, 7, 1.5, 11, B, *1~10,0
400, PED, 210, 7, 1.5, 12, F, *1~10,0
400, PED, 260, 7, 1.5, 13, B, *1~10,0
400, PED, 270, 7, 1.5, 12, B, *1~10,0
400, PED, 290, 7, 1.5, 13, F, *1~10,0
400, PED, 310, 7, 1.5, 11, B, *1~10,0
400, PED, 330, 7, 1.5, 12, F, *1~10,0
400, PED, 350, 7, 1.5, 13, F, *1~10,0
400, PED, 370, 7, 1.5, 12, F, *1~10,0
400, PED, 40, 7, 1.5, 11, F, *1~10,0
400, PED, 60, 7, 1.5, 12, B, *1~10,0
400, PED, 80, 7, 1.5, 13, F, *1~10,0
400, PED, 105, 7, 1.5, 12, B, *1~10,0
400, PED, 115, 7, 1.5, 11, B, *1~10,0
400, PED, 134, 7, 1.5, 12, F, *1~10,0
400, PED, 160, 7, 1.5, 11, B, *1~10,0
400, PED, 220, 7, 1.5, 12, F, *1~10,0
400, PED, 250, 7, 1.5, 13, B, *1~10,0
400, PED, 275, 7, 1.5, 12, B, *1~10,0
400, PED, 295, 7, 1.5, 12, F, *1~10,0
400, PED, 320, 7, 1.5, 11, B, *1~10,0
400, PED, 340, 7, 1.5, 12, F, *1~10,0
400, PED, 360, 7, 1.5, 13, F, *1~10,0
400, PED, 380, 7, 1.5, 12, F, *1~10,0
900, PED, 50, 7, 1.5, 11, F, *1~10,0
900, PED, 70, 7, 1.5, 12, B, *1~10,0
900, PED, 90, 7, 1.5, 13, F, *1~10,0
900, PED, 110, 7, 1.5, 12, B, *1~10,0
900, PED, 120, 7, 1.5, 13, B, *1~10,0
900, PED, 140, 7, 1.5, 12, F, *1~10,0
900, PED, 150, 7, 1.5, 11, B, *1~10,0

900, PED, 210, 7, 1.5, 12, F, *1~10,0
900, PED, 260, 7, 1.5, 13, B, *1~10,0
900, PED, 270, 7, 1.5, 12, B, *1~10,0
900, PED, 290, 7, 1.5, 13, F, *1~10,0
900, PED, 310, 7, 1.5, 11, B, *1~10,0
900, PED, 330, 7, 1.5, 12, F, *1~10,0
900, PED, 350, 7, 1.5, 13, F, *1~10,0
900, PED, 370, 7, 1.5, 12, F, *1~10,0
900, PED, 40, 7, 1.5, 11, F, *1~10,0
900, PED, 60, 7, 1.5, 12, B, *1~10,0
900, PED, 80, 7, 1.5, 13, F, *1~10,0
900, PED, 105, 7, 1.5, 12, B, *1~10,0
900, PED, 115, 7, 1.5, 11, B, *1~10,0
900, PED, 134, 7, 1.5, 12, F, *1~10,0
900, PED, 160, 7, 1.5, 11, B, *1~10,0
900, PED, 220, 7, 1.5, 12, F, *1~10,0
900, PED, 250, 7, 1.5, 13, B, *1~10,0
900, PED, 275, 7, 1.5, 12, B, *1~10,0
900, PED, 295, 7, 1.5, 12, F, *1~10,0
900, PED, 320, 7, 1.5, 11, B, *1~10,0
900, PED, 340, 7, 1.5, 12, F, *1~10,0
900, PED, 360, 7, 1.5, 13, F, *1~10,0
900, PED, 380, 7, 1.5, 12, F, *1~10,0
1300, PED, 60, 7, 1.5, 11, F, *1~10,0
1300, PED, 80, 7, 1.5, 12, B, *1~10,0
1300, PED, 110, 7, 1.5, 13, F, *1~10,0
1300, PED, 120, 7, 1.5, 12, B, *1~10,0
1300, PED, 130, 7, 1.5, 13, B, *1~10,0
1300, PED, 150, 7, 1.5, 12, F, *1~10,0
1300, PED, 180, 7, 1.5, 11, B, *1~10,0
1300, PED, 210, 7, 1.5, 12, F, *1~10,0
1300, PED, 260, 7, 1.5, 13, B, *1~10,0
1300, PED, 300, 7, 1.5, 12, B, *1~10,0
1300, PED, 330, 7, 1.5, 13, F, *1~10,0
1300, PED, 350, 7, 1.5, 11, B, *1~10,0
1300, PED, 400, 7, 1.5, 12, F, *1~10,0
1300, PED, 450, 7, 1.5, 13, F, *1~10,0
1300, PED, 500, 7, 1.5, 12, F, *1~10,0
1300, PED, 70, 7, 1.5, 11, F, *1~10,0
1300, PED, 90, 7, 1.5, 12, B, *1~10,0
1300, PED, 100, 7, 1.5, 13, F, *1~10,0
1300, PED, 160, 7, 1.5, 12, B, *1~10,0
1300, PED, 200, 7, 1.5, 11, B, *1~10,0
1300, PED, 240, 7, 1.5, 12, F, *1~10,0
1300, PED, 280, 7, 1.5, 11, B, *1~10,0
1300, PED, 320, 7, 1.5, 12, F, *1~10,0
1300, PED, 360, 7, 1.5, 13, B, *1~10,0
1300, PED, 410, 7, 1.5, 12, B, *1~10,0

1300, PED, 430, 7, 1.5, 12, F, *1~10,0
1300, PED, 460, 7, 1.5, 11, B, *1~10,0
1300, PED, 480, 7, 1.5, 12, F, *1~10,0
1300, PED, 525, 7, 1.5, 13, F, *1~10,0
1300, PED, 600, 7, 1.5, 12, F, *1~10,0
2000, PED, 60, 7, 1.5, 11, F, *1~10,0
2000, PED, 80, 7, 1.5, 12, B, *1~10,0
2000, PED, 110, 7, 1.5, 13, F, *1~10,0
2000, PED, 120, 7, 1.5, 12, B, *1~10,0
2000, PED, 130, 7, 1.5, 13, B, *1~10,0
2000, PED, 150, 7, 1.5, 12, F, *1~10,0
2000, PED, 180, 7, 1.5, 11, B, *1~10,0
2000, PED, 210, 7, 1.5, 12, F, *1~10,0
2000, PED, 260, 7, 1.5, 13, B, *1~10,0
2000, PED, 300, 7, 1.5, 12, B, *1~10,0
2000, PED, 330, 7, 1.5, 13, F, *1~10,0
2000, PED, 350, 7, 1.5, 11, B, *1~10,0
2000, PED, 400, 7, 1.5, 12, F, *1~10,0
2000, PED, 450, 7, 1.5, 13, F, *1~10,0
2000, PED, 500, 7, 1.5, 12, F, *1~10,0
2000, PED, 70, 7, 1.5, 11, F, *1~10,0
2000, PED, 90, 7, 1.5, 12, B, *1~10,0
2000, PED, 100, 7, 1.5, 13, F, *1~10,0
2000, PED, 160, 7, 1.5, 12, B, *1~10,0
2000, PED, 200, 7, 1.5, 11, B, *1~10,0
2000, PED, 240, 7, 1.5, 12, F, *1~10,0
2000, PED, 280, 7, 1.5, 11, B, *1~10,0
2000, PED, 320, 7, 1.5, 12, F, *1~10,0
2000, PED, 360, 7, 1.5, 13, B, *1~10,0
2000, PED, 410, 7, 1.5, 12, B, *1~10,0
2000, PED, 430, 7, 1.5, 12, F, *1~10,0
2000, PED, 460, 7, 1.5, 11, B, *1~10,0
2000, PED, 480, 7, 1.5, 12, F, *1~10,0
2000, PED, 525, 7, 1.5, 13, F, *1~10,0
2000, PED, 600, 7, 1.5, 12, F, *1~10,0
2600, PED, 60, 7, 1.5, 11, F, *1~10,0
2600, PED, 80, 7, 1.5, 12, B, *1~10,0
2600, PED, 110, 7, 1.5, 13, F, *1~10,0
2600, PED, 120, 7, 1.5, 12, B, *1~10,0
2600, PED, 130, 7, 1.5, 13, B, *1~10,0
2600, PED, 150, 7, 1.5, 12, F, *1~10,0
2600, PED, 180, 7, 1.5, 11, B, *1~10,0
2600, PED, 210, 7, 1.5, 12, F, *1~10,0
2600, PED, 260, 7, 1.5, 13, B, *1~10,0
2600, PED, 300, 7, 1.5, 12, B, *1~10,0
2600, PED, 330, 7, 1.5, 13, F, *1~10,0
2600, PED, 350, 7, 1.5, 11, B, *1~10,0
2600, PED, 400, 7, 1.5, 12, F, *1~10,0

2600, PED, 450, 7, 1.5, 13, F, *1~10,0
2600, PED, 500, 7, 1.5, 12, F, *1~10,0
2600, PED, 70, 7, 1.5, 11, F, *1~10,0
2600, PED, 90, 7, 1.5, 12, B, *1~10,0
2600, PED, 100, 7, 1.5, 13, F, *1~10,0
2600, PED, 160, 7, 1.5, 12, B, *1~10,0
2600, PED, 200, 7, 1.5, 11, B, *1~10,0
2600, PED, 240, 7, 1.5, 12, F, *1~10,0
2600, PED, 280, 7, 1.5, 11, B, *1~10,0
2600, PED, 320, 7, 1.5, 12, F, *1~10,0
2600, PED, 360, 7, 1.5, 13, B, *1~10,0
2600, PED, 410, 7, 1.5, 12, B, *1~10,0
2600, PED, 430, 7, 1.5, 12, F, *1~10,0
2600, PED, 460, 7, 1.5, 11, B, *1~10,0
2600, PED, 480, 7, 1.5, 12, F, *1~10,0
2600, PED, 525, 7, 1.5, 13, F, *1~10,0
2600, PED, 600, 7, 1.5, 12, F, *1~10,0
3200, PED, 70, 7, 1.5, 11, F, *1~10,0
3200, PED, 90, 7, 1.5, 12, B, *1~10,0
3200, PED, 100, 7, 1.5, 13, F, *1~10,0
3200, PED, 160, 7, 1.5, 12, B, *1~10,0
3200, PED, 200, 7, 1.5, 11, B, *1~10,0
3500, PED, 60, 7, 1.5, 11, F, *1~10,0
3500, PED, 80, 7, 1.5, 12, B, *1~10,0
3500, PED, 110, 7, 1.5, 13, F, *1~10,0
3500, PED, 120, 7, 1.5, 12, B, *1~10,0
3500, PED, 130, 7, 1.5, 13, B, *1~10,0
3500, PED, 150, 7, 1.5, 12, F, *1~10,0
3500, PED, 180, 7, 1.5, 11, B, *1~10,0
3500, PED, 210, 7, 1.5, 12, F, *1~10,0
3500, PED, 260, 7, 1.5, 13, B, *1~10,0
3500, PED, 300, 7, 1.5, 12, B, *1~10,0
3500, PED, 330, 7, 1.5, 13, F, *1~10,0
3500, PED, 350, 7, 1.5, 11, B, *1~10,0
3500, PED, 400, 7, 1.5, 12, F, *1~10,0
3500, PED, 450, 7, 1.5, 13, F, *1~10,0
3500, PED, 500, 7, 1.5, 12, F, *1~10,0
3500, PED, 70, 7, 1.5, 11, F, *1~10,0
3500, PED, 90, 7, 1.5, 12, B, *1~10,0
3500, PED, 100, 7, 1.5, 13, F, *1~10,0
3500, PED, 160, 7, 1.5, 12, B, *1~10,0
3500, PED, 200, 7, 1.5, 11, B, *1~10,0
3500, PED, 240, 7, 1.5, 12, F, *1~10,0
3500, PED, 280, 7, 1.5, 11, B, *1~10,0
3500, PED, 320, 7, 1.5, 12, F, *1~10,0
3500, PED, 360, 7, 1.5, 13, B, *1~10,0
3500, PED, 410, 7, 1.5, 12, B, *1~10,0
3500, PED, 430, 7, 1.5, 12, F, *1~10,0

3500, PED, 460, 7, 1.5, 11, B, *1~10,0
3500, PED, 480, 7, 1.5, 12, F, *1~10,0
3500, PED, 525, 7, 1.5, 13, F, *1~10,0
3500, PED, 600, 7, 1.5, 12, F, *1~10,0
4000, PED, 60, 7, 1.5, 11, F, *1~10,0
4000, PED, 80, 7, 1.5, 12, B, *1~10,0
4000, PED, 110, 7, 1.5, 13, F, *1~10,0
4000, PED, 120, 7, 1.5, 12, B, *1~10,0
4000, PED, 130, 7, 1.5, 13, B, *1~10,0
4000, PED, 150, 7, 1.5, 12, F, *1~10,0
4000, PED, 180, 7, 1.5, 11, B, *1~10,0
4000, PED, 210, 7, 1.5, 12, F, *1~10,0
4000, PED, 260, 7, 1.5, 13, B, *1~10,0
4000, PED, 300, 7, 1.5, 12, B, *1~10,0
4000, PED, 330, 7, 1.5, 13, F, *1~10,0
4000, PED, 350, 7, 1.5, 11, B, *1~10,0
4000, PED, 400, 7, 1.5, 12, F, *1~10
0, PED, 80, 7, 1.5, -11, F, *1~10,0
0, PED, 100, 7, 1.5, -12, B, *1~10,0
0, PED, 120, 7, 1.5, -11, F, *1~10,0
0, PED, 150, 7, 1.5, -10, B, *1~10,0
0, PED, 180, 7, 1.5, -13, B, *1~10,0
0, PED, 210, 7, 1.5, -11, F, *1~10,0
0, PED, 240, 7, 1.5, -13, B, *1~10,0
0, PED, 250, 7, 1.5, -12, B, *1~10,0
0, PED, 280, 7, 1.5, -11, F, *1~10,0
0, PED, 320, 7, 1.5, -12, F, *1~10,0
0, PED, 350, 7, 1.5, -13, B, *1~10,0
0, PED, 370, 7, 1.5, -14, F, *1~10,0
0, PED, 390, 7, 1.5, -11, F, *1~10,0
0, PED, 90, 7, 1.5, -11, F, *1~10,0
0, PED, 110, 7, 1.5, -12, B, *1~10,0
0, PED, 130, 7, 1.5, -11, F, *1~10,0
0, PED, 140, 7, 1.5, -10, B, *1~10,0
0, PED, 170, 7, 1.5, -13, B, *1~10,0
0, PED, 200, 7, 1.5, -11, F, *1~10,0
0, PED, 250, 7, 1.5, -13, B, *1~10,0
0, PED, 260, 7, 1.5, -12, B, *1~10,0
0, PED, 290, 7, 1.5, -11, F, *1~10,0
0, PED, 310, 7, 1.5, -12, F, *1~10,0
0, PED, 360, 7, 1.5, -13, B, *1~10,0
0, PED, 380, 7, 1.5, -12, F, *1~10,0
0, PED, 395, 7, 1.5, -11, F, *1~10,0
400, PED, 40, 7, 1.5, -12, B, *1~10,0
400, PED, 60, 7, 1.5, -13, B, *1~10,0
400, PED, 80, 7, 1.5, -11, F, *1~10,0
400, PED, 100, 7, 1.5, -12, B, *1~10,0
400, PED, 120, 7, 1.5, -11, F, *1~10,0

400, PED, 150, 7, 1.5, -10, B, *1~10,0
400, PED, 180, 7, 1.5, -13, B, *1~10,0
400, PED, 210, 7, 1.5, -11, F, *1~10,0
400, PED, 240, 7, 1.5, -13, B, *1~10,0
400, PED, 250, 7, 1.5, -12, B, *1~10,0
400, PED, 280, 7, 1.5, -11, F, *1~10,0
400, PED, 320, 7, 1.5, -12, F, *1~10,0
400, PED, 350, 7, 1.5, -13, B, *1~10,0
400, PED, 370, 7, 1.5, -12, F, *1~10,0
400, PED, 390, 7, 1.5, -11, F, *1~10,0
400, PED, 50, 7, 1.5, -12, B, *1~10,0
400, PED, 70, 7, 1.5, -13, B, *1~10,0
400, PED, 90, 7, 1.5, -11, F, *1~10,0
400, PED, 110, 7, 1.5, -12, B, *1~10,0
400, PED, 130, 7, 1.5, -11, F, *1~10,0
400, PED, 140, 7, 1.5, -10, B, *1~10,0
400, PED, 170, 7, 1.5, -13, B, *1~10,0
400, PED, 200, 7, 1.5, -11, F, *1~10,0
400, PED, 250, 7, 1.5, -13, B, *1~10,0
400, PED, 260, 7, 1.5, -12, B, *1~10,0
400, PED, 290, 7, 1.5, -11, F, *1~10,0
400, PED, 310, 7, 1.5, -12, F, *1~10,0
400, PED, 360, 7, 1.5, -13, B, *1~10,0
400, PED, 380, 7, 1.5, -14, F, *1~10,0
400, PED, 395, 7, 1.5, -11, F, *1~10,0
900, PED, 40, 7, 1.5, -12, B, *1~10,0
900, PED, 60, 7, 1.5, -13, B, *1~10,0
900, PED, 80, 7, 1.5, -11, F, *1~10,0
900, PED, 100, 7, 1.5, -12, B, *1~10,0
900, PED, 120, 7, 1.5, -11, F, *1~10,0
900, PED, 150, 7, 1.5, -10, B, *1~10,0
900, PED, 180, 7, 1.5, -13, B, *1~10,0
900, PED, 210, 7, 1.5, -11, F, *1~10,0
900, PED, 240, 7, 1.5, -13, B, *1~10,0
900, PED, 250, 7, 1.5, -12, B, *1~10,0
900, PED, 280, 7, 1.5, -11, F, *1~10,0
900, PED, 320, 7, 1.5, -12, F, *1~10,0
900, PED, 350, 7, 1.5, -13, B, *1~10,0
900, PED, 370, 7, 1.5, -12, F, *1~10,0
900, PED, 390, 7, 1.5, -11, F, *1~10,0
900, PED, 50, 7, 1.5, -12, B, *1~10,0
900, PED, 70, 7, 1.5, -13, B, *1~10,0
900, PED, 90, 7, 1.5, -11, F, *1~10,0
900, PED, 110, 7, 1.5, -12, B, *1~10,0
900, PED, 130, 7, 1.5, -11, F, *1~10,0
900, PED, 140, 7, 1.5, -10, B, *1~10,0
900, PED, 170, 7, 1.5, -13, B, *1~10,0
900, PED, 200, 7, 1.5, -11, F, *1~10,0

900, PED, 250, 7, 1.5, -13, B, *1~10,0
900, PED, 260, 7, 1.5, -12, B, *1~10,0
900, PED, 290, 7, 1.5, -11, F, *1~10,0
900, PED, 310, 7, 1.5, -12, F, *1~10,0
900, PED, 360, 7, 1.5, -13, B, *1~10,0
900, PED, 380, 7, 1.5, -14, F, *1~10,0
900, PED, 395, 7, 1.5, -11, F, *1~10,0
1300, PED, 60, 7, 1.5, -12, B, *1~10,0
1300, PED, 80, 7, 1.5, -13, B, *1~10,0
1300, PED, 110, 7, 1.5, -11, F, *1~10,0
1300, PED, 120, 7, 1.5, -12, B, *1~10,0
1300, PED, 130, 7, 1.5, -11, F, *1~10,0
1300, PED, 150, 7, 1.5, -10, B, *1~10,0
1300, PED, 180, 7, 1.5, -13, B, *1~10,0
1300, PED, 210, 7, 1.5, -11, F, *1~10,0
1300, PED, 260, 7, 1.5, -13, B, *1~10,0
1300, PED, 300, 7, 1.5, -12, B, *1~10,0
1300, PED, 330, 7, 1.5, -11, F, *1~10,0
1300, PED, 350, 7, 1.5, -12, F, *1~10,0
1300, PED, 400, 7, 1.5, -13, B, *1~10,0
1300, PED, 450, 7, 1.5, -12, F, *1~10,0
1300, PED, 500, 7, 1.5, -11, F, *1~10,0
1300, PED, 70, 7, 1.5, -12, B, *1~10,0
1300, PED, 90, 7, 1.5, -13, B, *1~10,0
1300, PED, 100, 7, 1.5, -11, F, *1~10,0
1300, PED, 160, 7, 1.5, -12, B, *1~10,0
1300, PED, 200, 7, 1.5, -11, F, *1~10,0
1300, PED, 240, 7, 1.5, -10, B, *1~10,0
1300, PED, 280, 7, 1.5, -13, B, *1~10,0
1300, PED, 320, 7, 1.5, -11, F, *1~10,0
1300, PED, 360, 7, 1.5, -13, B, *1~10,0
1300, PED, 410, 7, 1.5, -12, B, *1~10,0
1300, PED, 430, 7, 1.5, -11, F, *1~10,0
1300, PED, 460, 7, 1.5, -12, F, *1~10,0
1300, PED, 480, 7, 1.5, -13, B, *1~10,0
1300, PED, 535, 7, 1.5, -14, F, *1~10,0
1300, PED, 600, 7, 1.5, -11, F, *1~10,0
2000, PED, 60, 7, 1.5, -12, B, *1~10,0
2000, PED, 80, 7, 1.5, -13, B, *1~10,0
2000, PED, 110, 7, 1.5, -11, F, *1~10,0
2000, PED, 120, 7, 1.5, -12, B, *1~10,0
2000, PED, 130, 7, 1.5, -11, F, *1~10,0
2000, PED, 150, 7, 1.5, -10, B, *1~10,0
2000, PED, 180, 7, 1.5, -13, B, *1~10,0
2000, PED, 210, 7, 1.5, -11, F, *1~10,0
2000, PED, 260, 7, 1.5, -13, B, *1~10,0
2000, PED, 300, 7, 1.5, -12, B, *1~10,0
2000, PED, 330, 7, 1.5, -11, F, *1~10,0

2000, PED, 350, 7, 1.5, -12, F, *1~10,0
2000, PED, 400, 7, 1.5, -13, B, *1~10,0
2000, PED, 450, 7, 1.5, -12, F, *1~10,0
2000, PED, 500, 7, 1.5, -11, F, *1~10,0
2000, PED, 70, 7, 1.5, -12, B, *1~10,0
2000, PED, 90, 7, 1.5, -13, B, *1~10,0
2000, PED, 100, 7, 1.5, -11, F, *1~10,0
2000, PED, 160, 7, 1.5, -12, B, *1~10,0
2000, PED, 200, 7, 1.5, -11, F, *1~10,0
2000, PED, 240, 7, 1.5, -10, B, *1~10,0
2000, PED, 280, 7, 1.5, -13, B, *1~10,0
2000, PED, 320, 7, 1.5, -11, F, *1~10,0
2000, PED, 360, 7, 1.5, -13, B, *1~10,0
2000, PED, 410, 7, 1.5, -12, B, *1~10,0
2000, PED, 430, 7, 1.5, -11, F, *1~10,0
2000, PED, 460, 7, 1.5, -12, F, *1~10,0
2000, PED, 480, 7, 1.5, -13, B, *1~10,0
2000, PED, 535, 7, 1.5, -14, F, *1~10,0
2000, PED, 600, 7, 1.5, -11, F, *1~10,0
2600, PED, 60, 7, 1.5, -12, B, *1~10,0
2600, PED, 80, 7, 1.5, -13, B, *1~10,0
2600, PED, 110, 7, 1.5, -11, F, *1~10,0
2600, PED, 120, 7, 1.5, -12, B, *1~10,0
2600, PED, 130, 7, 1.5, -11, F, *1~10,0
2600, PED, 150, 7, 1.5, -10, B, *1~10,0
2600, PED, 180, 7, 1.5, -13, B, *1~10,0
2600, PED, 210, 7, 1.5, -11, F, *1~10,0
2600, PED, 260, 7, 1.5, -13, B, *1~10,0
2600, PED, 300, 7, 1.5, -12, B, *1~10,0
2600, PED, 330, 7, 1.5, -11, F, *1~10,0
2600, PED, 400, 7, 1.5, -13, B, *1~10,0
2600, PED, 500, 7, 1.5, -11, B, *1~10,0
2600, PED, 70, 7, 1.5, -12, B, *1~10,0
2600, PED, 90, 7, 1.5, -13, B, *1~10,0
2600, PED, 100, 7, 1.5, -11, F, *1~10,0
2600, PED, 160, 7, 1.5, -12, B, *1~10,0
2600, PED, 200, 7, 1.5, -11, F, *1~10,0
2600, PED, 240, 7, 1.5, -10, B, *1~10,0
2600, PED, 280, 7, 1.5, -13, B, *1~10,0
2600, PED, 320, 7, 1.5, -11, F, *1~10,0
2600, PED, 360, 7, 1.5, -13, B, *1~10,0
2600, PED, 410, 7, 1.5, -12, B, *1~10,0
2600, PED, 430, 7, 1.5, -11, F, *1~10,0
2600, PED, 460, 7, 1.5, -12, F, *1~10,0
2600, PED, 480, 7, 1.5, -13, B, *1~10,0
2600, PED, 535, 7, 1.5, -14, F, *1~10,0
2000, PED, 600, 7, 1.5, -11, F, *1~10,0
3200, PED, 70, 7, 1.5, -12, B, *1~10,0

```
3200, PED, 90, 7, 1.5, -13, B, *1~10,0
3500, PED, 60, 7, 1.5, -12, B, *1~10,0
3500, PED, 80, 7, 1.5, -13, B, *1~10,0
3500, PED, 110, 7, 1.5, -11, F, *1~10,0
3500, PED, 120, 7, 1.5, -12, B, *1~10,0
3500, PED, 130, 7, 1.5, -11, F, *1~10,0
3500, PED, 150, 7, 1.5, -10, B, *1~10,0
3500, PED, 180, 7, 1.5, -13, B, *1~10,0
3500, PED, 210, 7, 1.5, -11, F, *1~10,0
3500, PED, 260, 7, 1.5, -13, B, *1~10,0
3500, PED, 300, 7, 1.5, -12, B, *1~10,0
3500, PED, 330, 7, 1.5, -11, F, *1~10,0
3500, PED, 350, 7, 1.5, -12, F, *1~10,0
3500, PED, 400, 7, 1.5, -13, B, *1~10,0
3500, PED, 450, 7, 1.5, -12, F, *1~10,0
3500, PED, 500, 7, 1.5, -11, F, *1~10,0
3500, PED, 70, 7, 1.5, -12, B, *1~10,0
3500, PED, 90, 7, 1.5, -13, B, *1~10,0
3500, PED, 100, 7, 1.5, -11, F, *1~10,0
3500, PED, 160, 7, 1.5, -12, B, *1~10,0
3500, PED, 200, 7, 1.5, -11, F, *1~10,0
3500, PED, 240, 7, 1.5, -10, B, *1~10,0
3500, PED, 280, 7, 1.5, -13, B, *1~10,0
3500, PED, 320, 7, 1.5, -11, F, *1~10,0
3500, PED, 360, 7, 1.5, -13, B, *1~10,0
3500, PED, 410, 7, 1.5, -12, B, *1~10,0
3500, PED, 430, 7, 1.5, -11, F, *1~10,0
3500, PED, 460, 7, 1.5, -12, F, *1~10,0
3500, PED, 480, 7, 1.5, -13, B, *1~10,0
3500, PED, 535, 7, 1.5, -14, F, *1~10,0
3500, PED, 600, 7, 1.5, -11, F, *1~10,0
4000, PED, 60, 7, 1.5, -12, B, *1~10,0
4000, PED, 80, 7, 1.5, -13, B, *1~10,0
4000, PED, 110, 7, 1.5, -11, F, *1~10,0
4000, PED, 120, 7, 1.5, -12, B, *1~10,0
4000, PED, 130, 7, 1.5, -11, F, *1~10,0
4000, PED, 150, 7, 1.5, -10, B, *1~10,0
4000, PED, 180, 7, 1.5, -13, B, *1~10,0
4000, PED, 210, 7, 1.5, -11, F, *1~10,0
4000, PED, 260, 7, 1.5, -13, B, *1~10,0
4000, PED, 300, 7, 1.5, -12, B, *1~10,0
4000, PED, 330, 7, 1.5, -11, F, *1~10,0

-1 BARRIERS
5500, V, 0, 650, 6, 1, 18
0, BARL, 5960, 0, 0, 0, 0, 0, 0, 0, 4, 2, 1
0, BARL, 5950, 0, 0, 0, 0, 0, 0, 0, 4.5, 2, 1
0, BARL, 5940, 0, 0, 0, 0, 0, 0, 0, 5, 2, 1
```

0, BARL, 5930, 0, 0, 0, 0, 0, 0, 0, 5.5, 2, 1
0, BARL, 5920, 0, 0, 0, 0, 0, 0, 0, 6, 2, 1
0, BARL, 5910, 0, 0, 0, 0, 0, 0, 0, 6.5, 2, 1
0, BARL, 5900, 0, 0, 0, 0, 0, 0, 0, 7, 2, 1
0, BARL, 5890, 0, 0, 0, 0, 0, 0, 0, 7.5, 2, 1
0, BARL, 5870, 0, 0, 0, 0, 0, 0, 0, 8, 2, 1
0, BARL, 5860, 0, 0, 0, 0, 0, 0, 0, 8.5, 2, 1
0, BARL, 5850, 0, 0, 0, 0, 0, 0, 0, 9, 2, 1
0, BARL, 5840, 0, 0, 0, 0, 0, 0, 0, 9.5, 2, 1
0, BARL, 5820, 0, 0, 0, 0, 0, 0, 0, 10, 2, 1
0, BARL, 5810, 0, 0, 0, 0, 0, 0, 0, 10.5, 2, 1

9000, ES