YOUNG THAI MEN DRIVING DANGEROUSLY: A CROSS-CULTURAL VALIDATION STUDY OF THE MOTIVES FOR DANGEROUS DRIVING SCALE (MDDS)

CHINARAT NAKHASATHIEN

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
MASTER OF SCIENCE IN COUNSELING PSYCHOLOGY

Graduate School of Psychology
ASSUMPTION UNIVERSITY
THAILAND

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The present study was designed to cross-validate the Australian-developed MDDS Scale in Thailand by (1) testing its factor structure when applied to a sample of young Thai male drivers in Bangkok, Thailand, and (2) investigating the motives underlying dangerous driving among young Thai drivers (age 18 – 28 years), and (3) comparing these motives with the motives identified for young Australian drivers.

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ABSTRACT

The present study was conducted to investigate the cross-cultural reliability and validity of the Motives for Dangerous Driving Scale (MDDS) as a multidimensional measurement tool that can tap into different motives underlying dangerous driving among young Thai male drivers (age 18-28 years). The sample consisted of 300 participants. Exploratory factor analysis yielded a three-factor structure underlying the Thai-based MDDS. These three factors represent three major motives for dangerous driving among young Thai male drivers: 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws. 'It should also be noted that these three factors extracted from the Thai-based MDDS are highly similar to the three-factor structure identified for the original Australian-based MDDS. Reliability analysis indicated that the three motives for dangerous driving and their 31 representative items are internally consistent based on their computed Cronbach's alphas and their items' IT correlations. Tests of both convergent and criterion-related validity support the conclusion that the Thai-based MDDS is valid by these two criteria.

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CHAPTER I

Introduction

"Every day thousands of people are killed and injured on our roads. Men, women or children walking, biking, or riding to school or work, playing in the streets or setting out on long trips, will never return home, leaving behind shattered families and communities. Millions of people each year will spend long weeks in hospital after severe crashes and many will never be able to live, work or play as they used to do" (Peden, 2004, p. 10).

Injuries and deaths resulting from road traffic crashes are a major and rising worldwide public health problem. Indeed, the present trend shows that the third leading global burden of disease and injury will be road traffic injuries by 2020 (Murray & Lopez, 1996). Moreover, the International Federation of Red Cross and Red Crescent have stated that the road traffic burden is "a worsening global disaster destroying lives and livelihoods, hampering development and leaving millions in greater vulnerability" (Cater & Walker, 1998, p. 20). This is not surprising as road traffic injuries cause an estimated 1.24 million deaths each year worldwide and some 50 million people are injured or disabled every year. Moreover, road traffic deaths are the most significant cause of death among those aged 15-29 years (World Health Organization, 2013). On average, 3,242 people die daily from road accidents (Peden, 2004). Unless there is new commitment in prevention, the number of road traffic deaths and injuries are predicted to increase over the next 20 years by about 65% (Murray & Lopez, 1996).

Road traffic injuries are not shared equally around the world with low-and middle-income countries showing significant increases in road traffic fatality rates while higher-income countries, such as Australia, Canada, France, the Netherlands, Sweden and the United Kingdom are evidencing lower road traffic fatality rates (Toroyan, 2013). For example, the Asia and Pacific zone, despite it is home to only 16% of the world's motorized vehicle fleet accounted for 44% of global road deaths (Ono, Silcock, & Gerilla-Teknomo, 2013). In addition, road traffic injuries cost low-income and middle-income countries in this zone between 1% and 2% of their gross national product which is more than the total development aid received by these countries (Jacobs, Aeron-Thomas, & Astrop, 2000).

Thailand has not been spared and the mortality rate caused by traffic accidents in the kingdom was 44 per 100 000 population per year in 2010 which ranks second highest in world-wide road traffic deaths (Sivak & Schoettle, 2014). Namibia has the highest absolute number of recorded road traffic deaths, followed by Thailand and Iran (Sivak & Schoettle, 2014). According to the Thai Health Promotion Foundation (2008), from 1989 to 2007, the rate of road traffic crashes is ranked second among the top three leading causes of death in Thailand after cancer and heart disease. In 2011, a total of 14,033 deaths due to vehicle-related crashes in Thailand were reported, and more than 500,000 people suffered injuries from traffic crashes each year, with over 3,000 resulting in permanent disabilities (Bureau of Policy and Strategy Ministry of Health, 2013). The economic burden placed on the country as a result of traffic accidents, deaths, and injuries is estimated to be around 254,935 million Baht in both direct and indirect costs, accounting for approximately 2.36% of the country gross domestic product. The cost of road traffic deaths is an estimated 2.85 million Baht per person according to the Asian Development Bank (2004). The adverse economic

impact of road traffic accidents on Thailand's economy and public health is confirmed in a study conducted by Luathep and Tanaboriboon (2005). In their study, the researchers reported that road traffic crashes are one of the crucial health issues facing Thailand, with the country's healthcare services and economy bearing excessive burden from road traffic crashes.

Statement of the Problem

In line with the World Health Organization's declaration that 2011-2020 be the decade of action for road safety, the Thai government announced a 10-year national policy to reduce the number of road traffic crashes and deaths to a minimum during this period (Bureau of Policy and Strategy Ministry of Health, 2013). Nevertheless, while the policy had been announced and measures had been implemented to reduce traffic-related accidents, road traffic deaths in the country still remain high. The number of road traffic crashes in Thailand has been increasing steadily (Thai Roads Foundation and Thailand Accident Research center, 2013). The data from Road Safety Thailand showed that during the 10 years from 2000 to 2009, road traffic crashes occurred 983,076 times leading to 124,855 deaths and 151,286 people were seriously injured (Road Safety Thailand, 2011). The National Statistic Office Thailand (2010) conducted a survey of people aged 18 and over throughout the country and found that of the 50,272,371 subjects interviewed, 1,546,337 people reported that they had been involved in road traffic crashes. The study also revealed that 1,189,133 people were injured and 11,386 people lost a limb (National Statistical Office, 2011). These grim statistics corroborate the latest data from the Bureau of Policy and Strategy Ministry of Public Health (2013) which indicated that in 2011, the number of people who died from road traffic crashes amounted to 14,033.

This staggering figure equates to an average of 38 deaths per day or 3 deaths every 2 hours. Over the last 10 years, 130,000 Thai people have died annually from road traffic crashes. More than a 500,000 have been seriously injured or disabled (Health Information System Development Office, 2013).

Interestingly, the Royal Thai Police claimed that road traffic death rates have actually declined in 2011with the number of fatalities being lower than 10,000 for the first time in decades (Bureau of Highway Safety, 2012). This claim however, is in direct contrast to the most recent statistics presented by the Bureau of Policy and Strategy Ministry of Public Health which shows an increase (not a decrease) in the number of road traffic deaths (Thai Roads Foundation and Thailand Accident Research Center, 2013). When researchers peruse road traffic deaths from death certificates since 2009 and compared these with the deceased's identification cards, they found that the number of deaths from road traffic crashes is significantly higher than that reported by the Royal Thai Police by about 30-40 percent and is likely to increase steadily. The number of road traffic deaths and injuries reported by the Royal Thai Police clearly underestimated the actual number of deaths.

Similar to many countries around the world, research into the demographic characteristics of motor vehicle crash victims in Thailand has shown that more than 40% of people killed in traffic crashes are young adults aged between 15-29 years, of whom 80% of them are male (Thai Health Promotion Foundation, 2009). Males account for almost three times the overall rate of road traffic deaths than females. Various studies found that age and gender are the major predictors of motor vehicle crashes resulting from a range of different causes. For example, Iglesias, Fraguela, and Martin (2012) found that males are prone to disobeying traffic regulations and

have the highest number of accidents and traffic fines. The interaction between age and gender points to "young males" as the most at-risk group when it comes to motor vehicle accidents. The gender differential in road traffic death rates appears to be associated with both risk-taking behaviors by male drivers and their driving experience (Peden, 2004).

The present study proposes to investigate the motives underlying the intention to drive dangerously among young males in Bangkok, Thailand. A considerable body of literature has examined the underlying factors that may contribute to risky driving by young males. These factors include personality (sensation seeking) (Zuckerman, 1994), attitude (attitudes toward safe driving) (Zimbardo, Keough, & Boyd, 1997), risk acceptance (high level of risk acceptance) (Deery, 1999), overconfidence (optimism and overconfidence bias) (Guerin, 1994), and mood (road rage) (Dukes, Clayton, Jenkins, Miller, & Rodgers, 2001). While these factors may predispose some young male drivers to engage in risky driving, a review of the literature showed a paucity of assessment tools that tap into the motives for dangerous driving. Although there are a number of measures such as Zuckerman's (1994) Sensation Seeking Scale, which measures sensation-seeking and risk taking behaviors, and the Driver Anger Scale, which measures a driver's level of anger in a variety of driving situations (Deffenbacher, Oetting, & Lynch, 1994), these scales are essentially personality and emotive-based scales that do not tap directly into the motives underlying dangerous driving and risk-taking. Moreover, these scales are uni-dimensional and each identifies only one major facet of driving practices. In order to provide a clearer understanding of the multi-dimensional motives that underlie dangerous driving among young males, Ho and Yong Gee (2008) developed the multi-dimensional *Motives for Dangerous Driving Scale* (MDDS) that can reliably and validly tap into

different motives simultaneously. However, this scale was developed in Australia and as such its utility as a measurement tool to identify the motives for dangerous driving among males in other cultural context is unknown. The present study proposes to examine the cross-cultural reliability and validity of the MDDS as a multi-dimensional measurement tool that can tap into different motives underlying dangerous driving among young Thai males in Bangkok, Thailand.

Purpose of the Study

The main objectives of this study include the following:

1. To investigate the motives underlying the intention for as well as the engagement in dangerous driving among young Thai drivers (age 18 – 28 years).
2. To compare these motives with the motives identified for young Australian drivers, via the cross-cultural validation of the MDDS. This will involve the testing of the MDDS's factor structure when applied to a sample of young Thai male drivers in Bangkok, Thailand.

Significance of the Study

The findings from this study may provide the following benefits:

1. Inferences drawn from the findings of this study may be particularly useful to government as well as non-government agencies that are involved in the planning and implementation of strategies in support of the Decade of Action for Road Safety, with a view to reducing the number of road traffic deaths in Thailand.
2. The study's findings may benefit the Road and Transportation Department through their use of the Thai-validated MDDS to identify the motives underlying young males' driving behavior prior to granting them their

driver's license. Identification of specific motives underlying the tendency to drive dangerously will allow the relevant authorities to demand further education of as well as participation in driving study programs that focus on building awareness of traffic rules and compliance with traffic laws.

3. The findings from this study may prove useful to young Thai men by providing them with a clearer understanding of the motives underlying their dangerous driving, and in particular, how these motives may impact on their health risk behaviors.
4. The findings will provide a database as well as a point of reference for future researchers who may be interested in the same area of research.
5. The results of the study will contribute to the understanding of the similarities and differences in the motives underlying the tendency to drive dangerously between young Thai and young Australian drivers.

Definitions of Terms

Overconfidence in one's driving skills

Drivers' overconfidence is defined as the perception of possessing better skills and being at lower risk than the average driver (Brown & Groeger, 1988; Dejoy, 1989, 1992; Delhomme, 1991; Guppy, 1993; Mckenna, Stanier, & Lewis, 1991). For the present proposed study, confidence in one's driving skills will be measured by the *Motives for Dangerous Driving Scale* (MDDS) (Ho & Yong Gee, 2008).

Cross Cultural

Cross cultural is the interaction between individuals from different cultures. The term cross cultural is generally used to describe comparative studies of cultures. Inter cultural is also used for the same meaning (Lavenda, Robert, & Schultz, 2003).

Danger assessment

'Danger assessment' refers to a systematic approach to danger identification and control. It is a process that helps to identify what elements of an activity can cause injury or illness to people and to propose control measures that will eliminate or control the risk of injury (Health and Safety Authority, 2015). For the present proposed study, danger assessment will be measured by the Danger Assessment Questionnaire (Franken, Gibson, & Rowland, 1992).

Dangerous driving/risk-taking

'Dangerous driving/risk-taking' has been defined as driving in a manner which falls far below that of a competent and careful driver in circumstances where it would be obvious to a competent driver that there was a serious risk of either serious damage to property or personal injury to others or both. For the present proposed study, dangerous driving/risk-taking will be measured by the *Motives for Dangerous Driving Scale* (MDDS) (Ho & Yong Gee, 2008).

Disrespect for traffic laws

Traffic laws and the presence of road signs are to ensure the roads are safe for all users including pedestrians. They control traffic flow and contribute guidance on road and driving conditions. For the present proposed study, disrespect for traffic laws will be measured by the *Motives for Dangerous Driving Scale* (MDDS) (Ho & Yong Gee, 2008).

Sensation-seeking

A disposition or personality trait which involves a readiness to take social and physical risks for the sake of unconventional or novel experiences (Zuckermann & Neeb, 1980). For the present proposed study, sensation seeking will be measured by the *Sensation Seeking Scale (SSS) (Form V)* (Zuckerman, 1994).

Self-Esteem

Self–esteem reflects how individuals value and view the self at the most fundamental levels of psychological experiencing. It is an enduring sense of realistic self approval and subjective satisfaction (Bednar & Peterson, 1995). For the present proposed study, self-esteem will be measured by the Rosenberg Self-Esteem Scale (SES) (Rosenberg, 1965).

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CHAPTER II

Literature Review

In order to present a coherent review of the related literature, the following variables will be presented and reviewed as follows: (a) The seven deadliest days: Thai New Year and Songkran Holidays, (b) attitude, (c) drink driving, (d) driver not wearing seat belts, (e) emotion regulation, (f) fast drivers, (g) inexperience driver, (h) overconfidence, and (i) sensation seeking.

The seven deadliest days: Thai New Year and Songkran Holidays

The two most dangerous periods of the year for road traffic accidents unfortunately are during the Thai festive and holiday seasons. It is during the Thai New Year (12th – 15^{th}April) as well as the Gregorian New Year (1st January) that are witness to extreme levels of injuries and deaths throughout the country. These periods see the rate of fatalities in Thailand double to 52 per day which is equivalent to approximately 2 deaths every hour. It is for this reason these holiday periods are known as "the seven deadliest days" given the several thousand injuries that occur during these times.

For the New Year period of 30th December 2014 to 5th January 2015, an astonishing total of 341 road traffic fatalities and 3,117 injuries were recorded. Furthermore, during the Thai New Year festival period from the 9^{th}to15^{th} April 2015, a total of 364 road traffic fatalities and 3,559 injuries were reported (Ministry of Public Health Thailand, 2015). Clearly this is not a trend for Thai people to celebrate.

The present government has placed a high emphasis on road safety as part of its national agenda. The government has set the period of 2011 - 2020 as the "Decade for

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Road Safety" according to the United Nations plan. Several government agencies are working together towards a reduction of alcohol consumption during the festive events and to improve conduct on the roads. This campaign has five measures that it seeks to implement: road safety travel, safe vehicles, management, use of roads for transportation safety and post-accident response.

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The Thai government has set a target of less than 10 road fatalities per 100,000 of the population by 2020. Unfortunately since the onset of the campaign in 2011, the numbers of road traffic fatalities and injuries have remained consistently high (Thai Death Certificate Issuance 2013). In 2011, a staggering14,033 Thais died from road accidents compared to 14,059 in 2012. The recorded number of fatalities between 2013 and 2014 was approximately 14,000 per year or 38 deaths per day and this figure doubled during both the Thai New Year and the Gregorian New Year (Road Safety Centre, 2015). The Department of Disaster Prevention and Mitigation have also set a target of reducing the road toll by 80% in the next five years. There are many ways to achieve a goal of 80% reduction in road traffic accidents such as through the serious enforcement of existing traffic laws including wearing seat belts, banning children under 12 years of age from sitting in the front of the car and the use of international standard child seats. Taking cars that are not roadworthy, dangerous, as well as old rattling buses off the roads are other ways to reduce the road toll. Motorcyclists must be taught not to slip in and out between lanes and tuk-tuk vehicles should be limited to tourist attractions only. The fines and penalties for breaking road traffic laws should also be tougher, and must be seen to be applied fairly and equally to all rule-breakers. Eliminating risk factors by campaigning for Thai drivers to refrain from reckless speeding, drink-driving, not wearing seat belts or

helmets, while at the same time promoting proper etiquette while driving should go some way in reducing the road toll. Such campaigns should be promoted continuously throughout the entire year and should be supported with the installation of more surveillance cameras, as well as with the assignment of more police officers to risky areas.

In the quest to reduce the annual road toll, it is also important that the police set high standards so the general public can follow by example. Former Bangkok bureau Chief Srivara Ransibrahmanakul went unpunished for repeatedly refusing to take a breath test at a checkpoint when he was off duty and out of uniform. Under the current law, anyone else would be facing jail time as this is tantamount to drink-driving. Pol Lt Gen Srivara was later promoted and is now an assistant national police chief. Given this one example of how the Thai Police force deals with one of its own, it is highly unlikely that the Royal Police force will reform itself into a team of incorruptible crime fighters who enforces the law without prejudice, such as when confronted with drunk drivers who are in positions of authority.

Attitude

Attitudes have often been defined as the tendencies to evaluate an object with some degree of favor or disfavor, expressed in affective, cognitive or behavioral responses (Eagly & Chaiken, 1993). In terms of attitudes toward driving, most young drivers consider driving knowledge and driving skills are all that is needed to be safe on the road. However, attitude towards driving is one of the most important influences on driving ability and the resultant behavior on the road. Poor driving attitudes, which include disrespect toward authority, aggressiveness, disregard for others, and

impulsiveness, are common among drivers designated as high road-accident-prone individuals (Grey, Triggs, & Haworth, 1989). A number of studies have shown that the relationship between poor attitude and driving behavior is an important determinant of risky driving behavior (Ulleberg & Rundmo, 2003). More specifically, young drivers are emotionally and physically less mature, and thus have different attitudes toward safe driving in comparison to older drivers. For example, young male drivers often drive for recreation giving them a sense of freedom and control over their lives unlike older drivers who drive to get from point A to point B (Zimbardo, Keough, & Boyd, 1997). Young male drivers' attitude toward traffic law enforcement also differs from those of other groups (Ho & Yong Gee, 2008). Young male drivers have less self-control when committing traffic offences, they foresee lower negative outcomes after breaking traffic laws, and perceive such offences as socially acceptable (Parker, Manstead, Stradling, Reason, & Baxter, 1992). The link between non-compliance with law enforcement, lack of self-control, and perceived social acceptability appears to be related to their attitudes toward speed and a desire for danger (Ho & Yong Gee, 2008).

The effective application of road traffic rules and regulations enforcement is dependent on the attitudes of road drivers themselves and on the actions of related enforcement agencies. However, it is extremely difficult to change the long term attitudes of road drivers (Elliott, Armitage, & Baughan, 2004). According to Elliott et al. (2004), focusing on young novice and newly qualified drivers before they develop unsafe attitudes and behaviors may be most beneficial in terms of road safety improvements.

Drink Driving

The World Health Organization (WHO) noted that more than 38 percent of global populations drink alcohol regularly. In terms of its deleterious effects on driving, many studies have found progressive deterioration of driving performance (that is, the ability for drivers to focus their attention on their driving) with increasing blood alcohol concentration (BAC) level of over 0.05 g/dl (grams per deciliter) (Carscadden, 2002; Peden, 2004). The estimated number of deaths due to harmful use of alcohol worldwide is 3.3 million each year; this figure represents 5.9 percent of all deaths (Peden, 2004). In the United States, nearly one-third (31 percent or 10,076 people) of all traffic-related deaths in 2013 was due to alcohol-impaired driving crashes (Department of Transportation US, 2013). Indeed, over 1.4 million road drivers under the influence of alcohol were arrested in 2010 (Department of Justice US, 2010). Clearly, alcohol consumption is one of the main indirect causes of road traffic crashes and injury. The annual cost of alcohol-related crashes is more than US$59 billion in total (Blincoe, Miller, Zaloshnja, & Lawrence, 2010).

In the United Kingdom, there were 280 fatalities and 1,200 people seriously injured in drink-drive accidents in 2012. The number of drink driving accidents accounted for 16 percent of all reported road traffic fatalities in 2012. In particular, men are more likely to be casualties than women in drink-drive accidents. While males made up around two thirds of all drink-drive casualties, young males in the 16-24 year age range accounted for one third of those killed or seriously injured (Department of Transportation UK, 2012).

Interestingly, socio-economic status (SES) also appears to play a role in contributing to rate of drink-driving related accidents. Statistics show that in most high-income countries about 20 percent of fatally injured drivers have excess alcohol concentration in their blood. In contrast, between 33 percent and 69 percent of fatally injured drivers and between 8 percent and 29 percent of non-fatally injured drivers in low-and middle-income countries had consumed alcohol before their crash (Peden, 2004).

Thailand has not been spared the scourge of drink-driving based accidents. In 2007, alcohol was involved in 46,899 cases of road traffic crashes in the Kingdom. The figures showed that in 2007, there were 671 fatalities, 1,742 seriously injured, and 18,855 slightly injured as a result of drink drive accidents. Road traffic crashes have not only caused fatalities and disability to Thai citizens, disrupting their families' life and livelihood, but also significant damage to the country's economy. The estimated economic losses due to drink drive accidents were over 369.83 million Baht (The Royal Thai Police, 2007).

Gender and age appear to play important roles in contributing to high crash risk notably for the young male drivers (Peck, Gebers, Voas, & Romano, 2008). The latest Global Status Report on Alcohol and Health (2014) clearly shows a gender difference in alcohol-attributable deaths: men accounted for 7.6 percent of all global deaths whereas only 4.0 percent of all deaths were accounted for by women. In 2010, the total alcohol per capita consumption among male and female drinkers worldwide was approximately 21.2 liters of alcohol for males and 8.9 liters for females. In Thailand, the number of people who died from road traffic crashes amounted to 14,033 in 2011 and 80.44 percent

of road traffic deaths were male. It is well established that young male novice drivers aged 20-29 year accounted for 25.92 percent of fatal and road traffic injury crashes from drink-driving (Bureau of Policy and Strategy Ministry of Public Health, 2013).

Drink-driving among young males has also been found to be associated with other anti-social high risk behaviors such as fighting, skipping class, driving fast, racing cars, and taking chances (Lastovicka et al., 1987). Sommers et al. (2000) found that young drinking drivers are less likely than the general population to use seat belts (16.5 percent as compared to the national norm of 68 percent), and are more likely to use at least one tobacco product (84 percent as compared to the national norm of 47 percent), including the use of marijuana (58 percent as compared to the national norm of 24 percent). Arnett (1990) suggested that drink driving is also significantly related to the psychological traits of sensation seeking, boredom susceptibility, egocentrism and lack of inhibition. He argued that a primary motivation to drink-drive is the need for sensation seeking, a desire for novel and exciting experiences regardless of its danger. Research also suggests that young drivers who drink-drive also have higher concurrent traffic violations and accidents, and higher levels of risk taking when compared to other groups (Mc Millen, Pang, Wells-Parket, & Anderson, 1992).

Driver not wearing seat belts

A properly fastened safety belt is the most effective protection and least costly way to reducing death and serious injuries by absorbing the impact force during road traffic collision (Dinh-Zarr et al., 2001). Research has shown that seat belts dramatically decrease risk of death and serious injury among front seat passengers by up to 50 percent and among rear seat car passengers by up to 75 percent (Peden, 2004). Seat belts are

estimated to reduce the risk of serious injury to the head and chest by 50 percent to 83 percent (National Highway Traffic Safety Administration US, 1999). Research has found that seat belts reduce injury by preventing drivers and passengers from hitting the interior parts of the vehicle. Moreover, there are 30 times more likely that drivers and passengers who were not wearing seat belts will be ejected from the vehicle during road traffic crashes (Lee, Conroy, Coimbra, Tominaga, & Hoyt, 2010). Three out of four people who are ejected during deadly crash die from their injuries (Department of Transportation US, 2010-a).

In the U.S., the use of seat belts has increased from 11 percent in 1981 (Centers for Disease Control and Prevention, 1999) to nearly 85 percent in 2010 (Department of Transportation US, 2010-a). This increase has been due to mass media campaigns, education, law, and technology. Yet, surprisingly, about one in four road drivers and passengers continue to ride unbuckled (Glassbrenner, 2002). Those most resistant to the use seat belts are also more likely to exhibit other high-risk behaviors (e.g., alcohol use, speeding) and to be more regularly engaged in road traffic crashes (Blincoe et al., 2002). Worse still, 53 percent of road drivers and passengers killed in road traffic crashes in 2009 were not wearing seat belts (Department of Transportation US, 2010-b).

Research suggests that the reasons for not using seat belts may be rooted in a complex mix of attitudinal, habitual, and situational factors (Transportation Research Board of the National Academies US, 2004). For example, a study by Block (2000) showed that the use of seat belts is situational depending on the perceived risks of the road trip taken. There is the tendency for drivers to buckle up when they are taking longer trips (Fockler & Cooper, 1990), on high-speed roads, and when driving in bad weather

conditions (rain, fog or snow) (Fhaner & Hane, 1973; Jonah & Dawson, 1982; Knapper, Cropley, & Moore, 1976). Other reasons for not using seat belts include being in a hurry, discomfort from the belt, driving short distances, or forgetting.

Emotion Regulation

Emotion regulation refers to an individual's efforts to control their emotions and to express these feelings in a relatively automatic or controlled way; consciously or unconsciously (Parrott, 1993). It has been widely accepted that emotions often exert a profound influence on behavior. Simply, a fundamental requirement for effective human functioning is emotion regulation (Gross, 1998; Koole, 2009). For example, research has found that maladaptive behaviors such as binge eating, substance abuse and risky behaviors are related to poor self-regulation and emotion regulation (Cooper, Shaver & Collins, 1998; Haves, Wilson, Gifford, Follette, & Strosahl, 1996; Whiteside et al., 2007). In relation to driving behavior, maladaptive driving behaviors such as aggressive and risky driving appear to be rooted in difficulties with emotion regulation, i.e., the failure of the driver to control their emotions when driving. Feldman, Greeson, Renna, and Robbins-Monteith (2011) also found that the excessive use of text-messaging while driving is related to difficulties in emotion regulation. Similarly, Arnau-Sabates, Sala-Roca, and Jariot-Garcia (2012) concluded that the risky driving behaviors associated with alcohol and drug use, distraction, driving when fatigued, risk-taking tendency, and speeding were negatively related to emotion regulation abilities.

Fast Drivers

Speed is the main determinant of road traffic accidents and the severity of the resultant injuries. Interestingly, in high-income countries, 30 percent of road deaths are

speed related, whereas in low- and middle-income countries, speed is the main factor in approximately 50 percent of all road deaths. Low-income and middle-income countries have only half of the world's vehicles but represent 91percent of the world's road traffic deaths (World Health Organization, 2003).

In a study conducted by Sabey (1993), the most common cause of road traffic accidents in rural area (approximately 20 percent) involved vehicles going too fast, with a further 25 percent due to speed related factors. In urban areas, approximately 4 percent of road traffic accidents have a direct relationship to excessive speed; the other 21 percent is due to the speed related factors (Carsten, Plows, Southwell, & Tight 1989). Clearly, the research evidence points to the fact that driving at a lower speed results in a lower rate of vehicle collisions and fewer severe injuries (Finch, Kompfner, Lockwood, & Maycock, 1994; Taylor, Lynam, & Baruya, 2000). The research findings therefore suggest that one effective way in reducing road traffic injuries is setting road speed limits based on specific areas and road characteristics (World Health Organization, 2013).

Inexperienced Drivers

The Centers for Disease Control and Prevention reported that in 2011 in the U.S., approximately 2,650 teenage drivers aged 16-19 years old were killed and 292,000 suffered major injuries. This means that seven teenagers aged 16-19 years old died every day from road traffic crashes. In the U.S., young people aged 15-24 years old comprise only 14 percent of the U.S. population, however, they account for around 30 percent (US$19 billion) of the total costs of road traffic injuries among males and 28 percent (US$7 billion) of the total costs of road traffic injuries among females (Insurance Institute for Highway Safety, 2012). In 2009 in Australia, 17-25 years old comprise 12

percent of Australia's population but represent 24 percent of all driver deaths (Department of Transport and Main Roads (DTMR), 2010).

It is clear that full licensure at younger age is related to higher risky driving and greater crash and offence rates (Rhodes & Pivik, 2011). Driving is one of the complex, skilled behaviors which need good judgment and good perceptual skills that are developed and improved gradually over a period of several years. The skills include changing gears, correctly assessing distances, taking into account road conditions, assessing images from the rear-view mirror, and reacting appropriately. These actions become automated with time and extensive practice before the novice driver can reach a sufficient competence level. Furthermore, these actions increase overall mental workload and can often distract the attention of the novice driver (Rismark & Solvberg, 2007).

Gusfield (1991) argued that the two main factors that contribute to the high motor accident rates are age and inexperience. Research on skilled driving performance suggests that novice drivers' performance is inferior in many ways to the experienced drivers' (Mayhew & Simpson, 1995) with both immaturity and lack of driving experience being the two major factors contributing to high road traffic crashes among teens. Adolescent driver's lack of experience affects the most critical skills needed to avoid vehicle crashes, including hazard perception skills, attention control, calibration and time-sharing (Romer, Lee, McDonald, & Winston, 2014).

Sense of Invulnerability

It is believed that both adolescents and emerging adults tend to engage in risk behaviors due in part to their sense of invulnerability to harm, injury and danger. There is however, no consensus on how invulnerability is understood as its role in adolescent

development is controversial with regards to its implication for adaptation (Elkind, 1985; Lapsley & Murphy, 1985).

One approach argues that belief in one's invulnerability could be linked to a problem of cognitive development, a type of adolescent egocentrism that predisposes some adolescents to believe that harmful outcomes are more likely to affect others than for the self (Elkind, 1967). Fables of invulnerability may impair judgment in critical situations so apart from predicting risk behavior, invulnerability may also predict coping, resilience and adaptation (Hill & Lapsley, 2009; Lapsley, 2003).

There are other approaches to invulnerability that do not involve developmental assumptions such as the pervasive cognitive bias that can affect adults' decision-making (Jacobs-Quadrel, Fischoff, & Davis, 1993; Millstein & Halpern-Felsher , 2002; Weinstein, 1980). It is the biased sense of optimism that leads to risk appraisal, assuming more favorable outcomes for the self than for others (Lapsley & Hill, 2010).

Overconfidence

Past research has shown higher levels of confidence among young drivers compared with older drivers in their driving skills (Dejoy, 1992; Guerin, 1994; Guppy, 1993). Moreover, Kramer, Newton, and Pommerenke (1993) and Ifcher and Zarghamee (2014) found that high self-esteem and positive mood lead to distorted evaluation of performance. More specifically, their evidence suggests that happier males with higher self-esteem are more confident in their driving ability than their lower esteemed and less happier counterparts. Moreover, young male drivers have been found to perceive themselves as being less at risk and better than other drivers of the same age and sex (Bragg & Finn, 1982; Matthews & Moran, 1986). The abundance of research evidence

clearly points to younger drivers being more overconfident than older drivers, as well as clearly overestimating their safe driving ability and their driving skill. The relationship between overconfidence and increased crash rates is aptly captured by the Swedish Road and Transport Research Institute which quoted that "*It is obvious that there is a relationship between estimated risk and estimated ability. If a driver believes that he is a skilled driver able to handle a dangerous situation, the situation is not interpreted to be as dangerous*" (Gregersen, 1996, p. 244).

Sensation Seeking

Sensation seeking is "a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences and the willingness to take physical, social, legal, and financial risks for the sake of such experiences" (Zuckerman, 1994, p. 27; see also Zuckerman, 1979). Sensation seeking individuals seem to have a greater socio-biological need for stimulation than others and tend to engage in high risk behaviors that stimulate their thrill experience, such as dangerous driving (Zuckerman & Neeb, 1980; Arnett, 1990), high risk sexual experiences (Zuckerman, Tushup, & Finner, 1976), alcohol abuse (Schwarz, Burkhart, & Green, 1978), drug abuse (Satinder & Black, 1984), and minor criminality (Perez & Torrubia, 1985). Sensation seeking has been found to be the strongest predictor of high risk driving in a study conducted by Iversen and Rundmo (2002). Jonah (1997) reported in his review and synthesis of the literature related to risky driving and sensation seeking that sensation seeking traits are highest among males between 16-19 years of age. More specifically, he found that sensation seeking is highly correlated with risky behaviors such as aggressive driving, drink driving, non-use of seat belts, and speeding.

Motives for Dangerous Driving Scale (MDDS) (Ho & Yong Gee, 2008)

In order to clarify why so many young Australian males engage in high risk driving, Ho and Yong Gee (2008) conducted a study to identify some of the motives/factors that influence young Australian males to engage in such dangerous driving. The development of the Motives for Dangerous Driving Scale (MDDS) employed both qualitative and quantitative methodologies. The qualitative part of the study involved the use of interviews in which 15 males between the ages of 18 to 28 years and who held a current driver's license were requested to consider their own driving behavior, to think of some of the reasons why they would engage in high risk dangerous driving, and to list down as many of these reasons as possible. The procedure yielded 94 reasons for dangerous driving. Inspection of these reasons showed extensive overlapping in meaning, and these were grouped. Grouping according to identicalness of meaning reduced the total number of reasons to 72. These reasons were then content-analyzed and those reasons which were listed at least four times were retained. This procedure resulted in a final total of 54 reasons for dangerous driving. Forty representative statements were then written by the authors to be included in the MDDS.

The quantitative part of the study involved the use of exploratory factor analysis to identify the factor structure of the MDDS. A total of 200 male participants filled in the MDDS inventory. Factor analysis of the respondents' endorsement of the 40 reasons for dangerous driving yielded three distinct motives for dangerous driving, namely: driving fast/risk-taking, confidence in one's driving skills, and disrespect for traffic laws. Test of construct validity (via confirmatory factor analysis) confirmed the 'fit' of this 3-factor model. Test of criterion-related validity showed that the three motives for dangerous

driving were negatively correlated with experiences with traffic accidents and traffic offences, and positively correlated with their frequency of occurrences.

The development of the MDDS points to its utility in identifying dangerous driving motives that can assist in the development of effective treatment strategies. However, it must be noted that the MDDS was developed in Australia based on samples of Australian male drivers. As such, its cross-cultural validity when applied to Thai male drivers is unknown.

The Current Investigation

As stated in Chapter 1, the primary purpose of the present research is to examine the cross-cultural reliability and validity of the MDDS as a multidimensional measurement tool that can tap into different motives underlying dangerous driving among young Thai males in Bangkok, Thailand. Figure 1 presents the study's conceptual framework.

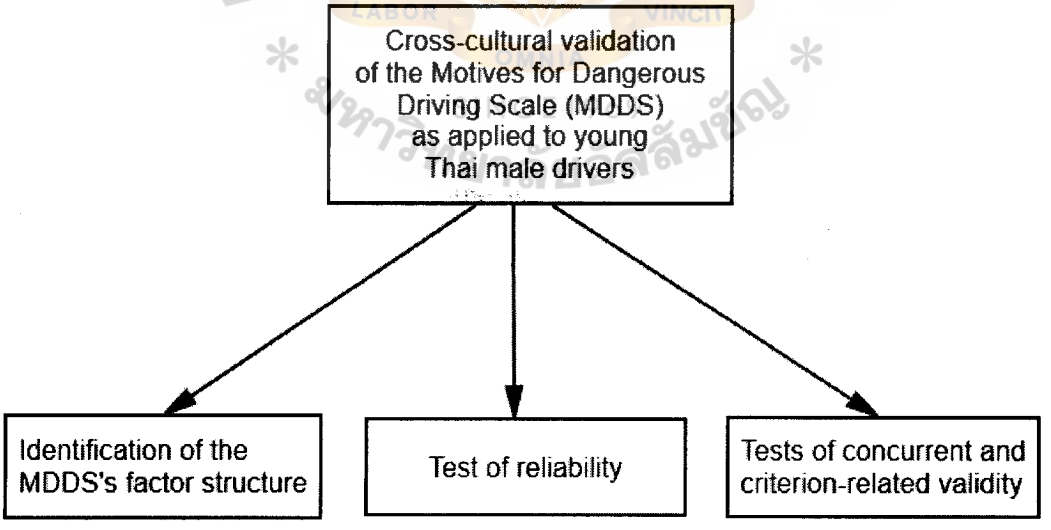

Figure 1

Cross-cultural validation of the Motives for Dangerous Driving Scale

Research Questions

Based on the literature review and conceptual framework of the study, the following research questions were generated:

1. What is the factor structure of the MDDS as applied to Thai young male drivers?
2. How reliable are the dangerous driving motives identified in the MDDS?
3. How valid is the MDDS as applied to the Thai context?

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CHAPTER III

Research Methodology

The present study examined the cross-cultural reliability and validity of the *Motives for Dangerous Driving Scale* (MDDS) as a multidimensional measurement tool that can tap into different motives underlying dangerous driving among young Thai male drivers in Bangkok, Thailand. This chapter describes in detail the research methodology applied in the conduct of the study and comprises the following: (a) Research Design; (b) Participants of Study; (c) Research Instrumentation; (d) Data Collection Procedure; and (e) Data Analysis.

Research Design

To meet its objectives, this quantitative study employed the multivariate techniques of exploratory factor analysis and reliability analysis. The current investigation made use of a survey questionnaire for the purposes of gathering data for statistical analysis.

Participants of the Study

The participants of this study consisted of young Thai men aged 18 to 28 years who were recruited through convenience sampling. As exploratory factor analysis is a 'large scale' analytic technique, the sample size required was determined to be approximately 300 participants.

Research Instrumentation and its translation into Thai

To meet its objectives, the present study employed a self-administered survey questionnaire (see Appendix A for the English version). As not all Thais read and write

English proficiently, it was deemed necessary to translate the original English version of the questionnaire into the local language. The questionnaire was translated into Thai and back-translated into English by two bilingual (English-Thai) experts in order to check for the consistency of meaning in the translated Thai version. These two bilingual experts were from the Faculty of Humanities at Chiang Mai University (CMU) and from the Faculty of Arts at Silpakorn University (SU). The two translators worked together and any inconsistencies between the 'forward translation' and 'back translation' were discussed within the Thai cultural context and resolved by the two translators (see Appendix B for the Thai version).

The following presents the different sections of the questionnaire in more detail.

Section 1: Personal Information.

The first part of the questionnaire is a researcher-constructed section written to tap the participants' age, level of education, personal income, employment status, and how long they have held a driver's license.

Section 2: Motives for Dangerous Driving Scale (MDDS).

Section 2 consisted of the 40-item Australian-developed *Motives for Dangerous Driving Scale*, representing the three identified motives of driving fast/risk taking, confidence in one's driving skills, and disrespect for traffic laws. The items were to be rated on 6-point Likert scales from 1 (strongly disagree) to 6 (strongly agree), with high scores indicating strong endorsement of the driving motives.

The reliability and validity of MDDS were demonstrated in the study by Ho and Yong Gee (2008). In terms of its reliability, the three driving motives had Cronbach's alpha ranging from 0.82 to 0.94. In terms of its validity, confirmatory factor analysis

showed that the scale has adequate construct validity via its goodness-of-fit indices. The fit indices indicated that the model provided a good fit relative to a null or independence model (i.e., the posited model represented over 90% improvement in fit over the null or independence model), and supports the hypothesized structure of the posited three-factor model for dangerous driving.

Section 3: Sensation Seeking Scale (SSS) (Form V).

Section 3 consisted of Zuckerman's (1994) Sensation Seeking Scale (SSS) (Form V). The 10-item scale required participants to rate each item on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). The 10 items, when summed together, provide and overall index of the sensation seeking trait, with high scores indicating high sensation seeking.

Section 4: Danger Assessment Questionnaire.

Section 4 consisted of the 18-item Danger Assessment Questionnaire (Franken, Gibson, & Rowland, 1992). This measurement tool measures the extent to which a variety of activities are considered to be dangerous. Each item was to be rated on a 6-point Likert scale from 1 (not at all dangerous) to 6 (very dangerous), with high scores indicating strong endorsement of that activity as being dangerous.

Section 5: Traffic accidents questions.

Section 5 consisted of two sets of questions which asked whether (1) the participant had been involved in any traffic accidents (regardless of whether or not he was responsible for the accident) while driving a car in the past two years, and if 'Yes', approximately how many accidents he had been involved in as a driver and (2) whether the participant had been charged or stopped by the police for any traffic offences in the

past two years, and if 'Yes': (a) approximately how many traffic offences he had been charged or stopped by the police for, and (b) the **type** of traffic offences he had been charged or stopped by the police for, and their **frequency** in the past two years.

Pre-test

A pretest of the Thai version of the survey questionnaire was conducted with 30 participants who met all the inclusion criteria from different areas in Bangkok such as universities, business offices, shopping malls, and the Department of Land Transport Office. The objectives of the pre-test were to check for errors in the questionnaire items and to test for their readability as well as to test the respondents' comprehension of the questionnaire directions and item statements, prior to the actual study. Modifications were made accordingly and upon verifying that the questionnaire was free from errors and comprehension problems, the researcher proceeded to conduct the actual study with 300 participants in the designated study locations.

Data Collection Procedure

Data collection procedure was carried out according to the following steps:

1. Upon approval of the research proposal, the researcher obtained written permission from the Dean of the Graduate School of Education and Psychology, Assumption University that allowed her to proceed with the data collection process.
2. The researcher conducted the research and also monitored the authenticity of the research data as well as helped explain the scale directions and answered questions in the process of gathering information.

3. The distribution of questionnaires took place in various areas in Bangkok such as universities, business offices, shopping malls, and the Department of Land Transport Office, in order to obtain the required number of suitable participants.
4. Screening questions were verbally asked by the researcher upon approaching a prospective participant. Those who agreed to participate voluntarily were given the survey questionnaire to fill in. The purpose was explained and informed consent was, likewise, obtained from the participants prior to their filling in the questionnaire. Participants were assured of strict confidentiality in the handling of the completed questionnaire. The whole process of data gathering took about 5-6 weeks.
5. Upon collection of the completed questionnaires, this researcher individually inspected each completed questionnaire to check for possible errors of commission and omission. Only valid questionnaires were subjected to statistical analysis.

Data Analysis

Data analysis was accomplished through the following statistical treatments:

1. Exploratory factor analysis
2. Reliability analysis
3. Test of convergent validity

CHAPTER IV

Results

As stated in Chapter 1, the primary purpose of the present research is to examine the cross-cultural reliability and validity of the *Motives for Dangerous Driving Scale* (MDDS) as a multidimensional measurement tool that can tap into different motives underlying dangerous driving.

Demographic Profile of Respondents

A total of 300 male participants from the Bangkok metropolitan area volunteered to fill the in the study's questionnaire. Their ages ranged from 18 to 28 years, with a mean age of 24.95 years. The participants held a current driver's license for an average of 4.7 years. The majority of the participants (80.6%) were employed at the time of the study, and had a mean income ranging from Baht 20,001 to Baht 40,000 per month. (See Appendix 1)

Results

Step 1: Exploratory Factor Analysis

Participants' responses to the 40-item questionnaire were subjected to a principal components analysis, followed by oblique rotation. Inspection of the results revealed that 10 factors had eigen-values greater than 1.00. However, examination of the items that loaded on these 10 factors indicated that only three factors were interpretable, as well as containing the fewest number of cross-correlated items. In conjunction with results obtained from the scree-plot, these findings suggested a three factor solution. These three

factors accounted for 24.08, 7.88, and 5.34% of the total variance respectively, for a combined total of 37.30%. Oblique rotation, limited to three factors was then conducted.

From the obtained pattern matrix, a total of 31 items were retained, using the criteria of selecting items with factor structure coefficients greater than or equal to 0.40 and no significant cross-correlations. The use of the 0.40 value as a criterion for selecting items is based on the logic that squaring the correlation coefficient (0.40^2) yields approximately 16% of the variance explained (Hair, Anderson, Tatham, & Black, 1997). Of the 31 items, 16 correlated with Factor 1, nine correlated with Factor 2, and six correlated with Factor 3. Examination of the items that correlated with these three factors indicated that Factor 1 consisted of items that reflected a desire to drive fast and/or to take risks while driving (e.g., I get a thrill from driving fast.; I take out my frustrations by driving fast). Factor 2 consisted of items that reflected confidence in one's driving skills (e.g., I am a skilful driver and am always in control of my driving; my driving skills allow me to negotiate traffic hazards safely). Factor 3 comprised of items that reflected a negative attitude (disrespect) toward traffic laws (e.g., It is okay to drink and drive as long as I know I am in control of my car; When driving at night, it is okay to drive through red lights or stop signs as long as I am careful). (See Appendix 2)

It should be noted that these three factors extracted from the Thai-based MDDS (representing three major motives for driving dangerously among young Thai male drivers) are highly similar to the three-factor structure identified for the Australian-based MDDS. Thus, it seems that for both Australian and Thai young male drivers, their driving habit is motivated primarily by the three major motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws.'

Step 2: Reliability Analysis

In order to maximize the internal consistency of the MDDS derived factor solution, as well as the Sensation Seeking Scale and the Danger Assessment Questionnaire, the items representing each of these five factors were item analyzed. Two criteria were used to eliminate items from these factors. First, an item was eliminated if the inclusion of that item resulted in a substantial lowering of Cronbach's alpha (Walsh & Betz, 1985). Second, an item was considered to have an acceptable level of internal consistency if its corrected item-total (IT) correlation was equal to or greater than 0.33 (Hair, Anderson, Tatham, & Black, 1997). Table 1 presents the three-factor multidimensional Motives for Dangerous Driving Scale (MDDS), the Sensation Seeking Scale, and the Danger Assessment Questionnaire, together with their corrected item-total correlations and Cronbach's alphas. (See Appendix 3)

Table 1
Scale Items Together with Their Corrected Item-Total Correlations and Cronbach's Alphas

Driving fast/taking risk	Corrected Item-Total Correlations
• I get frustrated when I'm driving in heavy traffic.	.50
• I get annoyed when someone speeds up as I am trying to overtake.	.52
• I get annoyed at drivers who drive slowly in the right hand lane on motorways.	.54
• I often become impatient when I have a run of red lights.	.47
• Playing loud music in the car makes me drive faster.	.59
• I tend to drive fast so I can get to my destination sooner.	.57
• I get a thrill from driving fast.	.51
• I often sound my horn or make obscene gestures at other drivers if they cut in front of me.	.52
• I tend to drive faster when I am angry.	.56

• I like to drive close behind slower drivers.	.61
• I would rather drive a car that is powerful than one that is comfortable.	.58
• I often drive through traffic lights when the light is amber.	.52
• It is okay to violate traffic laws.	.53
• I take out my frustrations by driving fast.	.55
• Exceeding the speed limit by 10 km per hour is no big deal.	.51
• I often like to change lanes even in heavy traffic.	.53
Cronbach's alpha = 0.87	

Confidence in one's driving skills	Corrected Item-Total Correlations
• I feel I am in control when I'm driving.	.55
• I adjust my driving style according to the road conditions.	.43
• I am a skilful driver and am always in control of my driving.	.42
• My driving skills allow me to negotiate traffic hazards safely.	.50
• I often pay attention to other road users.	.38
• I react quickly when faced with unexpected traffic hazards.	.46
• I am fluent in changing lanes in heavy traffic.	.48
• It is highly unlikely that my driving will ever cause an accident.	.40
• I am able to judge accurately the speed of an oncoming car.	.46
Cronbach's alpha = 0.77	

Disrespect for traffic laws	Corrected Item-Total Correlations
• I like to "race" other cars at the traffic light.	.62
• When driving at night, it is okay to drive through red lights or stop signs as long as I am careful	.46
• Driving fast is one way of showing my friends that I am a skilful driver.	.45
• Driving fast calms me down.	.57
• It is okay to drink and drive as long as I know I am in control of my car.	.51
• I often pull out into on-coming traffic.	.34
Cronbach's alpha = 0.75	

Sensation Seeking Scale	Corrected Item-Total Correlations
• While I do not deliberately seek out situations or activities that society disapproves of, I find that I often end up doing things that society disapproves of.	.52
• I often do things that I know my parents would disapprove of.	.53
• I often think about doing things that are illegal.	.42
• I do not let the fact that something is considered immoral stop me from doing it.	.49
• I often think about doing things that I know my friends would disapprove of.	.48
• I like the feeling that comes with taking physical risks.	.62
• I consider myself a risk taker.	.55
• The greater the risk the more fun the activity.	.53
• I like to do things that almost paralyze me with fear.	.66
Cronbach's alpha = 0.83	

Danger Assessment Questionnaire	Corrected Item-Total Correlations
• Exploring a strange city by yourself.	.44
• Smoking marijuana.	.56
• Using hallucinogenic drugs.	.67
• Water skiing.	.67
• Scuba diving.	.63
• Parachute jumping.	.61
• Going on a blind date.	.70
• Heavy drinking.	.73
• Sailing across the ocean.	.72
• Smoking cigarettes.	.73
• Eating fatty foods.	.69
• Skiing fast down a mountain.	.77
• Jumping or diving off a high board at a swimming pool.	.64
• Using stimulants.	.67
• Traveling in a strange country with no preplanned itinerary.	.66
• Being sexually promiscuous.	.69
• Using cocaine.	.50
Cronbach's alpha = 0.94	

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Examination of the Cronbach's alphas for the three dangerous driving motives and their items' IT correlations showed that all items were acceptable based on the aforementioned two criteria. As such, all 31 items were retained to represent their respective factors. Examination of the computed corrected IT correlation coefficients for the Sensation Seeking Scale and the Danger Assessment Questionnaire indicated that one item from the Sensation Seeking Scale (SS8: *Being afraid of doing something new often makes it more fun in the end*) had a very low corrected I-T correlation of .05 and that its deletion would increase the overall scale's Cronbach's alpha substantially. This item was deleted. After discarding this 'unreliable' item, each of the five factors of 'driving fast/taking risk,' 'confidence in one's driving skills,' 'disrespect for traffic laws,' 'sensation seeking,' and 'danger assessment' was then computed by summing across the (internally consistent) items that make up that factor and their means calculated. The following Table 2 presents the means and standard deviations for the five computed factors. (See Appendix 4)

Table 2

Means and standard deviations for the computed factors of 'driving fast/taking risk,' 'confidence in one's driving skills,' 'disrespect for traffic laws,' 'sensation seeking,' and 'danger assessment'

	Mean	*SD*	Mid-point
• Driving fast/taking risk	3.92	.80	3.50
• Confidence in one's driving skills	4.08	.62	3.50
• Disrespect for traffic laws	2.83	.90	3.50
• Sensation seeking	3.10	.71	3.50
• Danger assessment	3.40	1.05	3.50

As can be seen from Table 2, the driving motives of 'driving fast/taking risk' and 'confidence in one's driving skills' were rated above the mid-point on their respective

scales, while the driving motive of 'disrespect for traffic laws' was rated below the mid-point on its scale. Thus, overall, the male Thai drivers in the present study reported that they were motivated to drive fast and to take risk, as well as possessing a high level of confidence in their driving skills. Surprisingly, they reported low disrespect for traffic laws. In terms of the participants' reported levels of sensation seeking and danger assessment, both these factors were rated below their respective mid-points. Thus, the study's Thai male drivers did not perceived themselves as high sensation seekers, and generally assessed many life situations as low in danger.

Step 3: Validity Analysis

Test of convergent validity

To establish convergent validity, it is necessary to show that measures that should be related are in fact related. For example, the identified three dangerous driving motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws,' should theoretically be related to the attitudinal variables of 'sensation seeking,' and 'danger assessment.' That is, those male drivers who score high on the motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws,' should also score high in 'sensation seeking,' and low in' danger assessment.' To the extent that the significance and directions of these predicted relations are demonstrated, convergent validity is established. Thus, to establish convergent validity for the MDDS, Pearson product-moment correlations were conducted between the three identified dangerous driving motives and the measures of sensation seeking and danger assessment. Table 3 presents the correlation coefficients between these constructs. (See Appendix 5)

Table 3

Correlations between the dangerous driving motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws' with the attitudinal variables of 'sensation seeking' and 'danger assessment'

	Sensation seeking	Danger assessment
• Driving fast/taking risk	0.49***	-.46***
• Confidence in one's driving skills	0.16**	-.06
• Disrespect for traffic laws	0.62***	-.50***

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

Examination of the correlations coefficients indicated that all three dangerous driving motives are significantly and positively related to the variable of sensation seeking. Thus, the more the male participants endorsed the dangerous driving motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws', the higher their reported need for sensation seeking. The results also indicated that the dangerous driving motives of 'driving fast/taking risk' and 'disrespect for traffic laws' are significantly and negatively related to the variable of danger assessment. Thus, the more the male participants endorsed the dangerous driving motives of 'driving fast/taking risk' and 'disrespect for traffic laws', the lower their assessment of danger. The dangerous driving motive of 'confidence in one's driving skills' was also found to be negatively related to the variable of danger assessment, although this relationship is not statistically significant. Overall, these findings indicate convergent validity for the MDDS.

Test of criterion-related validity

Criterion-related validity is denoted by the degree of effectiveness with which the

performance on the MDDS predicts performance in real life. Test of criterion-related validity for the MDDS was demonstrated by correlating the summated scales for the three identified dangerous driving motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws,' with the participants' reported (1) number of traffic accidents they were involved in the past two years and (2) the number of traffic offences charged or stopped by the police within the past two years. It is hypothesized that the three identified dangerous driving motives will be positively correlated with the participants' reported frequency of traffic accidents and traffic offences. Pearson's product-moment correlation analysis was conducted to investigate the direction and strength of the relationships between the three dangerous driving motives and the participants' reported number of traffic accidents and traffic offences experienced in the past two years. The results of this analysis are presented in Table 4. (See Appendix 5)

Table 4

Correlations between the three identified dangerous driving motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws,' with the number of traffic accidents and traffic offences reported in the last two years

	Traffic accidents	Traffic offences
• Driving fast/taking risk	0.30***	.13*
• Confidence in one's driving skills	0.02	.19**
• Disrespect for traffic laws	0.28***	.13*

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

Examination of the correlations coefficients indicated that all three dangerous driving motives of 'driving fast/taking risk', 'confidence in one's driving skills,' and 'disrespect for traffic laws,' are correlated positively and significantly with the number of traffic offences reported in the last two years. Thus, the more the male participants

endorsed the dangerous driving motives of 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws', the higher the number of traffic offences charged or stopped by the police within the past two years. The results also indicated that the dangerous driving motives of 'driving fast/taking risk' and 'disrespect for traffic laws' are significantly and positively related to the number of traffic accidents the participants were involved in the past two year. Thus, the more the male participants endorsed the dangerous driving motives of 'driving fast/taking risk' and 'disrespect for traffic laws', the higher the number of traffic accidents the participants were involved in the past two year. Together, these findings indicate criterion-related validity for the MDDS.

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CHAPTER V

Discussion

This chapter consists of the following six sections: (1) Overview of the study, (2) Summary and discussion of findings, (3) Limitations of the study, (4) Implications of the Study, (5) Recommendations, and (6) Conclusions.

Overview of the Study

The present study investigated the cross-cultural reliability and validity of the Motives for Dangerous Driving Scale (MDDS) as a multidimensional measurement tool that can tap into different motives underlying dangerous driving among young Thai male drivers (age 18-28 years). Exploratory factor analysis yielded a three-factor structure underlying the Thai-based MDDS. These three factors represent three major motives for dangerous driving among young Thai male drivers: 'driving fast/taking risk,' 'confidence in one's driving skills,' and 'disrespect for traffic laws. 'It should also be noted that these three factors extracted from the Thai-based MDDS are highly similar to the three-factor structure identified for the original Australian-based MDDS. Reliability analysis indicated that the three motives for dangerous driving and their 31 representative items are internally consistent based on their computed Cronbach's alphas and their items' IT correlations. Tests of both convergent and criterion-related validity support the conclusion that the Thai-based MDDS is valid by these two criteria.

Summary and Discussion of Findings

Road traffic crashes constitute the leading cause of death among young male drivers around the world. Indeed, research has shown that 40 youngsters die from road

traffic crashes every hour of every day (Mathers, Fat, & Boerma, 2008). Thailand is ranked number two in the world in terms of road fatalities, with 44 road deaths per 100,000 people in 2010. This statistic is second only to Namibia, which had 45 road deaths per 100,000 people (Sivak & Schoettle, 2014). One reason for the high fatality rate appears to lie with the number of cars on the road. In Southeast Asian countries for example, the number of registered vehicles average 124.7 cars per 1,000 people. Thailand has the highest number of registered vehicles with approximately 36.6 million vehicles on the road with an average of 412.1 cars per 1,000 people (Toroyan, 2013). This situation was exacerbated by the previous government's first-car scheme which added an additional 1.5 million cars on Thai roads in 2013 (Department of Land Transport, 2015).

However, the number of cars on the road alone is not sufficient to explain the high motor vehicle fatality rate in Thailand. From a psychological perspective, it would be more fruitful to investigate the cognition of the drivers and in particular the psychological motives that impact on their decision to drive dangerously. The interesting question then becomes: '*What are the antecedent motives that impact on young male Thai drivers to drive dangerously*?' Exploratory factor analysis of the MDDS identified the following three primary motives for dangerous driving among young Thai male drivers.

A desire to drive fast and or to take risks while driving

Without exception, the bulk of the research into motor vehicle accidents has shown that men have higher rates of accidents than women (Waylen & McKenna, 2002) with the ratio between the sexes being rather substantial. According to Chipman et al. (1992) for example, men have twice the number of crashes than women (per 1,000

drivers). This higher level of crash-proneness has been attributed to driving at higher speeds along with the disregard for traffic laws among men (Norris et al, 2000).

Research has shown a substantial difference between the sexes in risk-taking and sensation-seeking behaviors. Almost all the studies conducted point to the tendency of young men to engage in sensation-seeking and high-risk behaviors (including driving) far more frequently than young women (Oetting et al, 1998; Deery & Fildes, 1999; Fromme et al, 1999). Early investigations into the relationships between risk taking, sensation-seeking and levels of male testosterone found a positive relationship between testosterone levels and sensation-seeking. Thus, it appears that one reason why men are more prone to engage in high-risk behaviors is their need for sensation seeking which is tied to their high levels of testosterone (Daitzman et al., 1978; Daitzman & Zuckerman, 1980; Dabbs & Morris, 1990); Bogaert & Fisher, 1995; Gerra et al., 1999). Neurotransmitters such as serotonin and dopamine have also been found to act as significant mediators in the decision to engage in risk-taking and sensation-seeking behaviors (Gerra et al, 2000; Netter et al, 1996). Cortisol, the stress hormone, has also been found to be associated with higher levels of sensation-seeking (Rosenblitt et al, 2001).

Another possible reason why young people, especially young males, have the tendency to engage in high-risk-behaviors is that the engagement in a particular high-risk behavior has a multiplier effect. That is, it appears that those who frequent a single risk taking behavior have a greater propensity to engage in other forms of risky behaviors too (Dryfoos, 1990). For example, reckless or dangerous driving among young people tends to accompany a number of other risk-taking behaviors such as social deviance, delinquency, drug abuse, smoking, unsafe sexual practices, frequent alcohol consumption

and driving while under the influence of alcohol (Jessor, Donovan, & Costa, 1991). Reckless or dangerous driving also tends to accompany other dangerous driving behaviors such as dangerous overtaking, tailgating and failing to allow sufficient time when traffic lanes merge (Gullone & Moore, 2000). Most of these behaviors are associated with increased risk and thrill-seeking that accompany emerging adulthood.

Detailed analysis of mortality statistics suggests that road traffic accidents are the leading cause of death for persons aged 15 to 29 years (Peden, McGee & Krug, 2002). However, irrespective of driving experience and age, driving at speeds inappropriate to the road condition is the strongest predictor of severe road traffic accidents (Elliot, Armitage, & Baughan, 2005). Excessive speeding is particularly frequent among young drivers despite being identified as the primary cause of road accidents with all ages of the driving population (Janke, Masten, McKenzie, Gebers, & Kelsey, 2003; Williams, Kyrychenko, & Retting, 2006). Research has clearly shown that speeding is the most common type of driving offence committed by young drivers (Cooper, 1997; Clarke, Ward, & Truman, 2005).

In Thailand male drivers are far more likely than female drivers to be killed or injured in road traffic accidents. More specifically, being male and young accounted for over 80% of all driver fatalities in 2009. This figure has remained consistent since 1975 (National Statistics Office, 2011) with 70% of all deaths due to dangerous driving behavior, excessive and/or inappropriate speeding on the roads. This dramatic upward trend in road traffic related deaths and injuries parallels the rapid economic development in Thailand over the past 30 years and the emergence of an affluent middle-class with the financial power for family members, including adolescents, to each purchase a car. The

exponential increase in the number of cars on the road has led to a commensurate increase in the injury rate from road traffic accidents in the population from 17 per 100,000 in 1984 to 152 per 100,000 in 2005 and 112 per 100,000 in 2008 (Wibulpolprasert, 2008; Thailand Health Profile Report, 2008). Traffic-related injuries among Thais aged between 15 and 45 years represent a leading cause of death in Thailand with over 5,000 young adults dying each year. Moreover, road traffic accidents also led to the highest level of permanent disability in Thailand (Sitthi-amorn et al., 2007). The relationship between speeding and traffic accidents was aptly demonstrated by Aarts and Van Schagen, (2006) who showed that an increase of only 1 km/h is associated with an average of 3% of accidental risks when associated with driving on minor roads and 1.7% on major roads.

Confidence in one's driving skills

Overconfidence in one's driving skills is a major factor in contributing to the incidence of traffic accidents. Delhomme (1991) found that some 60% of drivers rated themselves as better drivers than the average population. This sense of confidence was most evident among young male drivers in the 18 to 22 year old range despite their lack of driving experience. These findings are in line with those obtained from other studies which have also found that drivers rated themselves as being more skillful and safer than other drivers (DeJoy, 1989; Horswill, Waylen & Tofield, 2004). Commensurate with this sense of over-confidence is the findings by Delhomme (1991) that people on average maintain that they commit fewer traffic offences than others. It can be concluded from these findings that it is important for people to have accurate perceptions of their own driving skills in order to calibrate their perceptions and actual capabilities while driving.

When compared to females, males reported higher levels of confidence in their driving skills (Job, 1990; McKenna, Stanier & Lewis, 1991). When asked to rate their driving skills, young drivers rated themselves similar to that of older drivers but greater than that of drivers in their own age group (Matthews & Moran, 1986; MacDonald, 1994). In a study on people's perception of other drivers, Walton and Bathurst (1998) found that drivers who claimed to be safer than the average driver exaggerated the average drivers' speed when compared to drivers who had not claimed to be safer than the average driver.

Walton and McKeown (2001) found that drivers who incorrectly perceived others to drive faster than themselves were also more likely to think that advertisements on speeding laws were aimed at other drivers and not themselves. This tendency to attribute traffic accidents to the poor driving skills of others is consistent with Job's (1990) discussion of the mistake the media makes in reporting on the confidence of individual drivers. The media has a tendency to immunize the individual driver from potential high-risk behavioral messages and reinforces the drivers' own confidence in their ability to drive as the advert tends to show other drivers crashing due to their poor driving skills.

This type of bias appears to be consistent with the 'positive-self' bias described by McKenna et al. (1991) who found in their study that drivers rated the average other driver below 5 on a 10-point driving-skill scale. Walton and Bathurst (1998) argued that these results actually favored a 'negative-other' bias, where people are more confident in their driving as they perceive other drivers as far worse. This bias was confirmed in their study in that a majority of the drivers interviewed claimed to drive slower than the average driver and that the perception of the average driver's speed was exaggerated.

These perceptual confidence biases are most common among young drivers who despite the road statistics showing them to have the highest probability of accident risk they themselves feel that they are an exception to this statistics (Finn & Bragg, 1986). Despite evidence to the contrary, most people perceive they have a lower chance of being involved in an accident than the other driver (McKenna, 1993).

The paradox with over-confidence in one's driving skills is that while young drivers have not yet mastered the skills to drive safely they nevertheless possess the confidence in their abilities to do so. Certain skills such as hazard perception and negotiating a winding slippery road require a lot more experience than the mere simple practical skills of driving (Isler, Starkey & Sheppard, 2011). It is for this reason that young drivers may believe they are in control when they are probably driving unsafely and taking greater risks (Clarke, Ward, Bartle & Truman 2006; Wundersitz, 2012). Research has demonstrated that within the first two years of driving, it is the over-confident driver who is more likely to have a road traffic accident than the driver who is insecure about the skills of driving (De Craen, 2010).

Negative attitude (disrespect) toward traffic laws

Rule-breaking behavior is significantly higher for men than for women. This increase level of deviant rule-breaking behavior manifests itself in a greater number of traffic offences including drink driving among young male drivers (Evans & Wasielewski, 1983). Younger male drivers were found to give much lower ratings of seriousness for road traffic offences when compared to older males (Brown & Copeman, 1975). Parker, Manstead, Stradling, and Reason (1992) suggested that young male drivers are more likely to view the positive aspects of committing driving offences when

compared to older drivers. For example, a less than masculine young male may compensate for his lack of masculinity by driving fast; one can enhance one's social standing among one's peers by thumbing one's nose at the traffic rules; one can arrive faster at one's destination by driving fast and disregarding traffic rules. Apart from the tendency to disregard traffic rules, young drivers also seem to be less aware of the negative consequences of rule-breaking and more prone to committing the offences (Parker et al., 1995).

In terms of how drivers regard traffic rules, Parker et al. (1992) found that people tend to view speeding less negatively when compared to other traffic offences. Vanlaar and Yannis (2006) found that people perceived the behavior of talking on a phone while driving carried only a small risk despite evidence that shows that it is equal to driving under the influence of alcohol in terms of risk potential. Research also showed that drivers who were involved in road traffic accidents also reported more past violations than non-accident drivers (Trimpop & Kirkcaldy, 1997).

Drink-driving is one of the most important traffic rules disregarded most regularly. In Thailand, over half of the male drivers (56.1%) interviewed reported driving after consuming three or more glasses of alcohol when compared to only 17.2% of females. Drink-driving is attributed to 26% of all road fatalities in Thailand and it is widely believed that the Thai macho image is to blame for these statistics: Drink driving is a way to prove manhood among Thai Teenagers. A cross-sectional study of blood alcohol content (BAC) with 4,778 Thai drivers found that 8.7% of these drivers to have a blood alcohol level greater than 50mg/dl, illustrating the high prevalence of drink-driving among Thai male drivers (Chongsuvivatwong et al., 1999).

Recklessness behind the wheel in Thailand claims thousands of lives each year and this is made worse by the impunity and bribery practiced by the rich and influential. The disrespect for road traffic regulations is part and parcel of a deeply rooted corruption and bribery culture that permeates right through the driving population. Especially among the rich and influential, traffic rules are like any commodity that can be bought and whitewashed with impunity. One of the most high-profile cases involved the grandson of the late billionaire founder of Red Bull, Vorayuth Yoovidhya, who escaped jail time despite killing a policeman in a hit-and-run offence in Bangkok. In a similar fashion, Orachorn "Praewa" Thephasadin Na Ayudhya, the daughter of an elite Thai family, crashed her car into a mini-bus killing nine people. Despite causing the death of nine people, driving underage and driving without a license, the punishment was only a suspended two-year prison sentence. It is not only the rich and famous in Thailand who are able to bypass the law, Worapong Sangkhawat, a 25-year old smashed his pick-up truck into British cyclists Peter Root and Mary Thompson who were attempting to break the world record for cycling around the world and was fined a mere 1,000 Baht and given a two-year suspended sentence.

In recent years, prosecutors and police have faced criticism over notorious cases when the criminal who is wealthy and influential escaped justice despite causing death on the roads. The peddling of influence which allows the 'privileged few' to kill with impunity on the road is an attitude that many ordinary Thai citizens believe is wrong and requires changing. Such a sea-change in one's attitude toward bribery and corruption is a first major step in cultivating a greater respect for the basic code of law. Simply, if people

perceive the judicial system is biased toward the privileged then there will never be the kind of respect for the rule of law that is sorely needed in this country.

The Thai authorities have started to take some action by threatening people with large fines if caught offering bribes to the police and have also began to crack down on drink-driving in Bangkok. If these measures are to be successful in lowering the road toll, then they need to be strictly adhered to and implemented nationwide. Perhaps some high profile convictions would not go amiss in convincing the general public that no one, no matter how influential or rich he/she may be, is above the law. Once the law is seen to apply to all members of the public equally, Thailand is more likely to become a more compliant country where the populace respects the laws of the land and holds the country's rules and regulations, such as traffic laws, to be sacrosanct. Failure to do so will only exacerbate a worsening situation that promotes more deaths and injuries on the roads.

The relationships between the three driving motives and the participants' need for sensation seeking and their assessment of danger

Research has shown that males tend to be higher in sensation seeking than females (Dahlen, Martin, Ragan & Kuhlman, 2005) and that young males when compared to females at the same age, have more dangerous thought patterns (Harré et al., 1996). Trimpop and Kirkcaldy (1997) noted that thrill and adventure seeking, two sub dimensions of sensation seeking, were significant predictors of driving offences. The motives of drivers to drive dangerously are strongly related to their willingness to take risks. McKenna and Horswill (2006) noted that in a study when speed limits were removed, drivers willing to take risks would drive faster to reduce their driving time and

focused on the thrill of the speed, whereas less risky drivers would be more concerned about being involved in an accident and would focus on fuel consumption instead.

Dahl (2004) described adolescence as a point in time when individuals begin to show an increase in risk taking, sensation seeking, novelty and emotional intensity. Naturally one should be especially concerned if the emotional changes begin to regulate driving behavior. McKenna and Horswill (2006) found that drivers who had the most risk taking behaviors seemed to allow their driving experiences to be affected by their mood. Dahl (2004) suggested that it is under intense emotional arousal that poor decisions are made by adolescent drivers who otherwise would be capable of making correct decisions under low levels of arousal.

According to Problem Behavior Theory (PBT; Jessor & Jessor, 1977), the high risk behaviors that adolescents engage in are interrelated; in that engagement in one problematic behavior will most likely lead to the engagement of other problematic behaviors. It would seem from this that risky driving is therefore part of a larger issue that is best characterized by problem behaviors. Jessor (1987) found that risky driving was related to other individual problem behaviors such as drug use or problem drinking. It seems that adolescents are willing to engage in risky behavior to fulfill a number of purposes such as gaining approval from peers, countering feelings of inadequacy or failure, or simply as a means for having fun. Problem Behavior Theory suggests that focusing on separate problem behaviors, such as high-risk driving, does not encompass the entire issue and that it is better to incorporate them into something that represents an overall risk-taking lifestyle.

The findings of the present study indicate that young Thai male drivers' engagement in high risk driving is motivated by the three motives of the desire to drive fast and to take risks, disrespect for traffic laws, and a high confidence in their driving ability. Nevertheless, only the driving motives of the desire to drive fast and to take risks, and a high confidence in their driving ability were rated highly (above their respective mid-points on their scales) whereas the driving motive of disrespect for traffic laws was rated below its mid-point on its scale. These findings suggest that while Thai male drivers are motivated to drive fast and appear to have confidence in their driving ability, they are also ambivalent about adherence to traffic laws and in particular in their attitude toward the police officers who are tasked with enforcing the law. This is in line with the common negative opinion that many Thai drivers have of the traffic police force as authority figures that can be easily bought to look the other way.

Similarly, the finding that the study's young male drivers did not rate themselves as high sensation seekers may reflect the Thai attitude of 'easy going' (mai pen rai, sabai sabai attitude) and the feeling that life in general is non-dangerous. Perhaps this manifestation of the laid back Thai attitude is reflective of their well-known ability to remain positive in the face of adversities and to brush off bad situations with a smile; hence the phrase 'mai pen rai.' Unfortunately 'mai pen rai' is not good enough when the issue concerns road traffic deaths. It is one thing to have a positive outlook on life but it is another matter when such an attitude leads to the blind-faith belief that 'it won't happen to me.' Such a biased positive outlook may well be fatal.

In terms of the assessment of danger, the study's findings indicate that the study's young male drivers rated their danger assessment as low (below the scale's mid-point).

Thus, they did not assess life as overly dangerous or threatening. This is in line with the views of Dr. Kunnawee Kanitpong, Director of Thailand Accident Research Centre (TARC) who posited that *"Thai people don't see the inherent dangers of driving and they are unable to understand the potential danger or consequences of their actions if something goes wrong - hence they take risks"* (Claxton, 2015, p.14).

As a result, they tend to drive fast, ignore traffic rules, and the consequence is the increased likelihood of being involved in road traffic accidents.

Cross-cultural differences in survey response patterns

Cross-cultural studies may involve comparison of theoretical models based on responses to multi-item rating scales across various cultural groups. A distortion in findings may result if the response styles are not controlled for. A comparison of aggregated mean scores to Likert-scale questions have been used for studies of attitudes across countries.

Questionnaire responses have shown cultural differences in numerous studies. East-Asian responses tend to be more moderate and ambivalent compared to those of European-heritage (Stening & Everett, 1984). Such differences may contaminate substantive conclusions about cultural differences and thus warrant attention.

In past cross-cultural research conducted, there are indications of cross cultural group response styles. Extreme response styles (preference for the highest and lowest response options), which is contrasted with a moderate response style (preference for middle response options) have been observed in African-Americans (Bachman & O'Malley, 1984) along with Latino Americans (Hui & Triandis, 1989). East Asians tend to be more moderate than samples involving European-heritage (Chen, Lee, & Stevenson, 1995).

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Studies involving different countries on attitude have tended to use a comparison of aggregated mean scores to Likert-scale questions. When people complete a questionnaire, this presupposes their answers are entirely based on the substantive meaning of the items to which they respond (Baumgartner & Steenkamp, 2001). Individuals' responses can also be influenced by their response style. The response style is related to a respondent's tendency to systemically respond to items within the questionnaire regardless of item content (Baumgartner & Steenkamp, 2001). The examples of response styles most commonly cited are acquiescence (ARS) and dis-acquiescence (DRS), (i.e., the tendency to disagree or agree with an item no matter the content), and middle response styles (MRS) against extreme response styles (ERS), (i.e the tendency to use the middle or extreme response categories on ratings scales).

Smith (2004) argued that individualistic countries (such as those in the West) are represented by an acceptance of confrontation together with lower emphasis on harmony and conformity, where as in-group harmony found in collectivistic cultures leads some respondents to provide acquiescent answers. In individualistic countries, speaking one's mind and having individual initiative is expected and encouraged along with a higher willingness to disagree.

Watkins and Cheung (1995) reported greater extreme responding from Australians when compared to those from Nepal, Nigeria, China and the Philippines. Hence, a middle response style (MRS) is probably more suited to respondents in collectivistic countries given their expected cultural norms (Chen et al., 1995). Persons

in collectivistic cultures could possibly be *"more sensitive to the social pressures emanating from the questionnaire"* (Hofstede, 2001, p. 218).

According to Hofstede (2001), Thais and Australians are different in their degrees of individualism/collectivism, uncertainty avoidance and power distance. Australians are individualistic, have low power distance and low uncertainty avoidance, where as Thais are collectivistic, have high uncertainty avoidance and high power distance.

The similarity between the dangerous driving motives identified for Thai drivers and those identified for the original Australian sample.

In terms of the factors extracted from MDDS, the dangerous driving motives identified for Thai drivers are highly similar to the driving motives identified for the original Australian sample. Thus, it seems that regardless of culture, the motives to drive dangerously among young men are driven by the motives of driving fast/taking risk, confidence in one's driving skills, and disrespect for traffic laws. The only difference observed between the Australian and Thai samples is that the Thai young male drivers did not rate themselves as high sensation seekers with may denote a cultural difference reflecting the Thai 'easy going' attitude (sabai sabai, mai pen rai) as well as a feeling that life in general is not dangerous.

There seems to be a global consensus about male drivers in terms of their high-risk driving behaviour and accident rates which has long been recorded in the UK, Europe, Australia and the United States as well as in many other countries. Without exception, in all the studies carried out, male drivers have been shown to have high rates of road traffic accidents and high levels of sensation seeking with low danger perception

(Evans, 1991; McKenna et al, 1998; Parker et al, 1995; Abdel-Aty & Abdelwahab, 2000; Waller et al 2001; Waylen & McKenna, 2002; & Lancaster & Ward, 2002). These characteristics are noted especially in the under-25 year category. There is also strong evidence to suggest that males are more likely to exceed speed limits as well as commit other road traffic offences than females (Storie 1977). According to Norrris et al. (2000), the greater tendencies among male drivers to be associated with traffic violations could be due to behavioural and situational risk factors, along with differences in character and a tendency to overestimate their driving abilities.

As stated earlier, the major cultural difference between Australian and Thai young male drivers appears not to be in their driving motives but in their attitudes toward life adversities. 'Mai-pen-rai' in English means, 'it doesn't matter' or 'it's not a problem'. The expression reflects the attitude of Thai people towards themselves as well as the world around them and their daily contacts. In short, most things are acceptable to the Thai person. Unlike Australians, it is deemed normal to avoid conflicts and objections in Thailand. People in general endeavor to be tolerant and a have a compromising attitude toward life adversities (Vongvipanond 2009).

Limitations of the Study

Before discussing avenues for future research, some limitations of this study must be noted. First, this study was conducted with a restrictive sample involving only young Thais in Bangkok, Thailand. As such no comparative conclusions can be made between the driving motives of these Bangkok drivers with those of Thai rural drivers. In other words, given the life situations (e.g., extreme poverty) that characterize up-country living, the motives that motivate young male rural drivers to drive dangerously may be different

from those identified for the Bangkok young male drivers. This suggestion is supported by the finding that the majorities of the participants (80.6%) were employed at the time of the study and had a mean income ranging from Baht 20,000 to Baht 40,000 per month. The higher education and income levels could have resulted in a decreased injury rate relative to the general population. As such, the validity of the study's findings may be questionable and caution should be taken when generalizing the findings from this study to young Thai male drivers in other areas in Thailand.

Second, the employment of self-report type questionnaires to operationalize the driving behavior of individuals carries with it a set of validity issues. That is, one cannot be certain that the responses provided by the respondents reflect one hundred percent accurately how they behave in real life.

Third, it is impossible to obtain complete and accurate figures on road traffic accidents from statistical sources within the country, the main sources of road traffic collisions data come from different sources such as; hospitals and police data which does not have a standardized recording system. The Traffic Engineering Division, Department of Highways covers only a quarter of national roads and primarily relies on police reports (Suriyawongpaisal & Kanchanasut, 2003). Worse of all, the accident data published by the Royal Thai Police and the Thai Department of Highways are not reliable as they are often under-reported. It should also be noted that statistics in Thailand only publish accidents where victims die at the scene of the accident unlike the WHO statistics which include data up to 30 days after the initial incident. Consequently, many fatalities, major and minor injuries have been missed from the data.

Implications of the Study

With the above limitations in mind, the findings from the present study carry a number of important implications relative to the motivation of young Thai male drivers to drive dangerously. First, the finding that the Australian developed Thai-based Motives for Dangerous Driving Scale (MDDS) is both reliable and valid measurement tool provides practitioners with a diagnostic tool for measuring the motives that underlie the decision of Thai young male drivers to drive dangerously. The Thai-based MDDS may also be used by government or non-government agencies that are involved in the 'Decade of Action for Road Safety in Thailand' to identify the high-risk driving motives among young Thai drivers, and to employ these findings to tailor intervention strategies aimed at lowering the road toll.

Second, the Thai-based multidimensional MDDS may be an important contribution to the understanding of the dynamics of risk-taking behaviors among young Thai male drivers. The identification, measurement and eventually, the understanding of the motives for high-risk driving may provide the basis for predicting high-risk drivers and to help develop tools and strategies to evaluate and to provide an appropriate response in tackling the problem. Driver training and safety programs could be developed having clearly understood the motives behind high-risk driving practices.

Third, an important implication of the cross-cultural validation of the Thai-based MDDS is the identification of the motives that underlie such dangerous driving by young Thai male driver. Through the development of both reliable and valid assessment tools, researchers and program planners may be able to focus on specific motives for dangerous driving practices. The MDDS is able to discriminate between motives for dangerous

driving and therefore could be used as a predictive marker for identifying at risk individuals and thus allowing for the tailoring of intervention programs that incorporate these motives.

Recommendations

While the MDDS was originally developed in Australia based on a sample of Australian male drivers, the findings from the present study confirmed the cross-cultural reliability and validity of the Thai-based MDDS within the Thai context. As such, the MDDS can be used as a quick screening tool by future researchers to evaluate driving behaviors of young Thai males. Effective interventions that incorporate these identified motives can be designed to identify high risk individuals and situations once the high-risk driving motives for young drivers are understood. While the present study's findings contribute to the overall understanding of the decision-making process underlying risky driving choices, it is important that continued research in this area be carried out to ensure continual effective intervention programs are designed to help lower the high road injury and fatality rates of this group of drivers.

To enable the public to use the roads in a safer way, action is needed from not just safety-directed campaigns but from stricter driving education programs that require passing more stringent driving tests before driver licenses are issued. Thailand has a lot more to do in order to improve road safety standards and until the government places greater pressure on agencies to act, more lives will be lost. Plans are necessary but they must be translated into real actions and implemented successfully.

It is recommended that future studies incorporate a wide range of measures from a holistic standpoint given the numerous factors that contribute to high-risk driving

behavior. Interventions based solely on improvements in road awareness and driving may not be sufficient if there are overriding factors related to the adolescent lifestyle where peers reward high-risk behaviors such as driving fast and disrespecting traffic laws.

Conclusions

The overall findings from the present study fit well with the growing body of evidence in the literature that support the idea of males as high risk takers, over-confident in their driving ability, and low in their danger perception, and as such represent the group that is most at risk of motor vehicle accidents. More than this, male drivers are particularly at risk due partly to the entire social system of norms and media-driven images that equate masculinity with fast driving and performing difficult driving maneuvers (Berardelli, 2008). The cross validation of the Thai-based MDDS provides future researchers with an instrument that can act as a quick screening tool to evaluate the motives underlying the driving behaviors of young Thai male drivers. While the present study has been successful in identifying the high-risk driving motives that typify the driving behaviors of young Thai male drivers, continued research in this area is crucial if effective programs are to be developed that can effectively lower the high road fatality and injury rates of this group of drivers (Ho & Yong Gee, 2008).

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APPENDICES

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APPENDIX A-1

Informed Consent (English Version)

ASSUMPTION UNIVERSITY

GRADUATE SHOOL OF PSYCHOLOGY

Thank you for accepting to participate in a research study conducted by Ms. Chinarat Nakhasathien, a Master's Degree student at the Graduate School of Psychology, Assumption University.

The purpose of this study is to explore the reasons why young men engage in high risk dangerous driving. In this study you will be asked to respond to a questionnaire in which you will provide information about your beliefs/attitudes towards issues related to your driving behavior. The information gained from this study may help us to better understand the underlying reasons and decision-making processes that lead people to drive dangerously.

All information collected will be kept confidential and secure, no names will be recorded and participants may withdraw from filling in the questionnaire at any time. The data collected will only be used for the purpose of this study and only by the researcher and her advisor. **By voluntarily filling in this questionnaire, it will be assumed that you have consented to participate in this research study.**

This study may trigger some unpleasant memories (eg. being involved in a past accident). If that happens please contact the researcher who will refer you to an appropriate counselor.

If you have any questions regarding this study, please contact the researcher Ms. Chinarat Nakhasathien on her email address: c_chinarat@yahoo.com

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If you would like a summary of this study's findings, please provide either your email address or your postal address and a copy of the findings will be sent to you once it is available. Please tear off this section and hand it to the researcher.

E-mail address: _____

Postal address: _____

_____

_____

_____

APPENDIX A-2
Survey Questionnaire (English Version)

SECTION 1: Personal Information

a) Age _____ in years.

b) What is the highest level of education you have attained?

1. _____ Primary or lower
2. _____ 1 – 3 years secondary
3. _____ 4 – 6 years secondary
4. _____ Diploma
5. _____ Bachelor's degree
6. _____ Master's degree or higher

c) What is your personal income per month?

1. _____ Less than THB10,000
2. _____ THB10,001 - THB20,000
3. _____ THB20,001 - THB30,000
4. _____ THB30,001 - THB40,000
5. _____ THB40,001 - THB50,000
6. _____ THB50,001 - THB60,000
7. _____ THB60,001 or more

d) What is your employment status?

1. _____ Full time paid employment
2. _____ Part time paid employment
3. _____ Household duties
4. _____ Unemployed
5. _____ Student (study only)
6. _____ Student (study and work)

e) How long have you held your driver's license? _____ Years _____ Months

SECTION 2

Below are a number of statements that relate to your attitudes toward driving. Please consider each statement carefully, and then decide whether you **STRONGLY DISAGREE, MODERATELY DISAGREE, BARELY DISAGREE, BARELY AGREE, MODERATELY AGREE,** or **STRONGLY AGREE** with the statement. Please indicate your level of agreement with each of the following statements by recording your rating (number) on the space next to each statement.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Disagree

1. I get a sense of excitement when I drive. _____
2. I take out my frustrations by driving fast. _____
3. It is okay to violate traffic laws. _____
4. I am a skillful driver and am always in control of my driving. _____
5. I often feel pressured by my passengers to drive fast in order to get to our destination sooner. _____
6. I often like to change lanes even in heavy traffic. _____
7. I often sound my horn or make obscene gestures at other drivers if they cut in front of me. _____
8. I like to drive close behind slower drivers. _____
9. Playing loud music in the car makes me drive faster. _____
10. I would rather drive a car that is powerful than one that is comfortable. _____
11. Exceeding the speed limit by 10 km per hour is no big deal. _____
12. I get annoyed when someone speeds up as I am trying to overtake. _____
13. I tend to drive fast so I can get to my destination sooner. _____

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1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

14. I feel I am in control when I'm driving. _____

15. Driving fast is one way of showing my friends that I am a skillful driver. _____

16. I adjust my driving style according to the road conditions. _____

17. I get frustrated when I'm driving in heavy traffic. _____

18. It is okay to drink and drive as long as I know I am in control of my car. _____

19. I get a thrill from driving fast. _____

20. I often become impatient when I have a run of red lights. _____

21. My driving skills allow me to negotiate traffic hazards safely. _____

22. I often drive faster than the speed limit on the open road. _____

23. I tend to drive faster when I am angry. _____

24. I am a more skillful driver than most other drivers on the road. _____

25. I often overtake on the solid line on my side of the lane. _____

26. I often drive through traffic lights when the light is amber. _____

27. I often pay attention to other road users. _____

28. The present traffic laws are too harsh. _____

29. I can easily re-gain control of my car if it skids in wet weather. _____

30. It is highly unlikely that my driving will ever cause an accident. _____

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1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

31. I have no problems exceeding the speed limit because I know I am a good driver. _____

32. I like to "race" other cars at the traffic light. _____

33. When driving at night, it is okay to drive through red lights or stop signs as long as I am careful. _____

34. Driving fast calms me down. _____

35. I get annoyed at drivers who drive slowly in the right hand lane on motorways. _____

36. I am able to judge accurately the speed of an oncoming car. _____

37. I am fluent in changing lanes in heavy traffic. _____

38. I try my best not to violate traffic laws. _____

39. I often pull out into on-coming traffic. _____

40. I react quickly when faced with unexpected traffic hazards. _____

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SECTION 3

Below are a number of statements that relate to your attitudes toward life in general. Please consider each statement carefully, and then decide whether you **STRONGLY DISAGREE, MODERATELY DISAGREE, BARELY DISAGREE, BARELY AGREE, MODERATELY AGREE,** or **STRONGLY AGREE** with the statement. Please indicate your level of agreement with each of the following statements by recording your rating (number) on the space next to each statement.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Barely Disagree	Barely Agree	Moderately Agree	Strongly Agree

1. While I do not deliberately seek out situations or activities that society disapproves of, I find that I often end up doing things that society disapproves of. _____
2. I often do things that I know my parents would disapprove of. _____
3. I often think about doing things that are illegal. _____
4. I do not let the fact that something is considered immoral stop me from doing it. _____
5. I often think about doing things that I know my friends would disapprove of. _____
6. I like the feeling that comes with taking physical risks. _____
7. I consider myself a risk taker. _____
8. Being afraid of doing something new often makes it more fun in the end. _____
9. The greater the risk the more fun the activity. _____
10. I like to do things that almost paralyze me with fear. _____

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SECTION 4

Please consider each of the activities listed below carefully, and then decide whether you consider that activity to be **NOT AT ALL DANGEROUS, SOMEWHAT DANGEROUS, FAIRLY DANGEROUS, MODERATELY DANGEROUS, DANGEROUS** or **VERY DANGEROUS**. Please indicate your decision regarding each of the following activities by recording your rating (number) on the space next to each statement.

1	2	3	4	5	6
Not at all Dangerous	Somewhat Dangerous	Fairly Dangerous	Moderately Dangerous	Dangerous	Very Dangerous

1. Mountain climbing. _____
2. Exploring a strange city by yourself. _____
3. Smoking marijuana. _____
4. Using hallucinogenic drugs. _____
5. Water skiing. _____
6. Scuba diving. _____
7. Parachute jumping. _____
8. Going on a blind date. _____
9. Heavy drinking. _____
10. Sailing across the ocean. _____
11. Smoking cigarettes. _____
12. Eating fatty foods. _____
13. Skiing fast down a mountain. _____
14. Jumping or diving off a high board at a swimming pool. _____
15. Using stimulants. _____
16. Traveling in a strange country with no preplanned itinerary. _____
17. Being sexually promiscuous. _____
18. Using cocaine. _____

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SECTION 5

1. Have you been involved in any traffic accidents (regardless of whether or not you were responsible for the accident) while driving a car in the past two years?

_____ Yes _____ No

If 'Yes', approximately how many accidents have you been involved in as a driver?

_____ number of traffic accidents involved in the past two years.

2. Have you been charged or stopped by the police for any traffic offences in the past two years?

_____ Yes _____ No

If 'Yes':

(a) Approximately how many traffic offences have you been charged or stopped by the police for?

_____ number of traffic offences charged or stopped by the police within the past two years.

(b) Please specify the **type** of traffic offences you have been charged or stopped by the police for, and their **frequency** in the past two years.

Type of traffic offence	Frequency (number of times)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

THANK YOU FOR YOUR CO-OPERATION

APPENDIX B-1

Informed Consent (Thai Version)

มหาวิทยาลัยอัสสัมชัญ

บัณฑิตวิทยาลัยคณะจิตวิทยา

ข้อมูลสำหรับผู้ตอบแบบสอบถาม

ขอเรียนแจ้งให้ทราบ:

ขอขอบพระคุณที่กรุณาร่วมการตอบแบบสอบถามสำหรับการทำวิทยานิพนธ์ระดับปริญญาโทของ คุณชินรัตน์ นาคะเสถียร นักศึกษาของคณะจิตวิทยา มหาวิทยาลัยอัสสัมชัญ เราขอเรียนเชิญท่านเข้าร่วมการตอบแบบสอบถามนี้เพื่อสำรวจทัศนคติของท่านในการขับรถยนต์ในประเทศไทย

คำถามโดยรวมเกี่ยวข้องกับทัศนคติและความเชื่อในการขับรถของท่าน โดยข้อมูลที่ได้จากงานวิจัยนี้ อาจช่วยให้ทราบถึงเหตุผลพื้นฐานและกระบวนการตัดสินใจที่อาจนำไปสู่การเกิดอุบัติเหตุทางถนน

ในระหว่างการตอบแบบสอบถาม หากท่านรู้สึกว่าคำถามส่งผลรบกวนทางอารมณ์หรือจิตใจ ท่านสามารถหยุดการตอบแบบสอบถามได้และสามารถติดต่อผู้วิจัยเพื่อรับคำแนะนำในการติดต่อผู้เชี่ยวชาญเพื่อช่วยให้คำปรึกษาเกี่ยวกับความไม่สบายใจนั้น ข้อมูลจะถูกนำมารวบรวมเป็นข้อมูลกลุ่มและใช้ในงานวิจัยเท่านั้นเท่านั้น จะไม่มีการเปิดเผยชื่อและจะเก็บรักษาข้อมูลเป็นความลับ ท่านไม่จำเป็นต้องเขียนชื่อ และโปรดทราบว่าไม่มีคำตอบที่ถูกหรือผิด ดังนั้น กรุณาตอบอย่างตรงไปตรงมา

หากท่านมีคำถามเกี่ยวกับงานวิจัยนี้ กรุณาติดต่อสอบถามได้ที่ คุณชินรัตน์ (อีเมล์: chinarat_n@yahoo.com)

ขอขอบพระคุณอย่างสูงในความร่วมมือและเวลาของท่าน

หากท่านต้องการบทสรุปของงานวิจัยนี้ โปรดเขียนอีเมล์และที่อยู่ของท่านในส่วนนี้ และฉีกให้ผู้ดำเนินงานวิจัย เพื่อนำส่งผลสรุปของงานวิจัยเมื่อเสร็จสมบูรณ์แล้วในคราวต่อไป

อีเมล์: _____

ที่อยู่: _____

_____

_____

_____

APPENDIX B-2

แบบสอบถาม

<u>ส่วนที่1 : ข้อมูลส่วนตัว</u> กรุณากาเครื่องหมาย ✓ ลงในคำตอบที่ตรงกับท่านที่สุด

ก) อายุ _____ ปี

ข) ระดับการศึกษาสูงสุดที่ท่านได้รับ

7. _____ ประถมศึกษาหรือต่ำกว่า
8. _____ มัธยมศึกษาตอนต้น
9. _____ มัธยมศึกษาตอนปลาย
10. _____ ปวช. / ปวส. หรือเทียบเท่า
11. _____ ปริญญาตรี
12. _____ ปริญญาโท หรือสูงกว่า

ค) รายได้ต่อเดือน

8. _____ น้อยกว่า 10,000 บาท
9. _____ 10,001 – 20,000 บาท
10. _____ 20,001 – 30,000 บาท
11. _____ 30,001 – 40,000 บาท
12. _____ 40,001 – 50,000 บาท
13. _____ 50,001 – 60,000 บาท
14. _____ 60,001 บาทขึ้นไป

ง) สถานภาพการทำงานของท่าน

7. _____ ทำงานเต็มเวลา
8. _____ ทำงานไม่เต็มเวลา
9. _____ ทำงานบ้าน
10. _____ ว่างงาน
11. _____ นักเรียน (ศึกษาเท่านั้น)
12. _____ นักเรียน (ศึกษาและทำงานไปด้วย)

จ) คุณถือใบอนุญาตขับขี่เป็นเวลานานเท่าไหร่ _____ ปี _____ เดือน

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ส่วนที่ 2

คำถามส่วนนี้สอบถามเกี่ยวกับทัศนคติในการขับขี่ยานพาหนะ กรุณาเขียนหมายเลขลงในท้ายของแต่ละหัวข้อที่ตรงกับความเป็นจริงมากที่สุด

1 ไม่เห็นด้วยอย่างยิ่ง 2 ไม่เห็นด้วย 3 ไม่แน่ใจ 4 เห็นด้วยเล็กน้อย 5 เห็นด้วย 6 เห็นด้วยอย่างยิ่ง

1. รู้สึกตื่นเต้นเวลาขับรถ ____
2. รู้สึกว่าได้ปลดปล่อยความเครียดเมื่อได้ขับรถด้วยความเร็ว ____
3. รู้สึกว่าขับรถผิดกฎจราจรบ้างก็ไม่เป็นไร ____
4. ท่านมีความชำนาญในการขับรถและมักจะควบคุมรถได้เสมอ ____
5. ท่านรู้สึกถึงความกดดันจากผู้ที่โดยสารในรถ ให้ขับรถเร็วเพื่อจะได้ไปถึงที่หมายเร็วขึ้น ____
6. ท่านมักจะชอบเปลี่ยนเลนขณะขับรถ ถึงแม้การจราจรจะหนาแน่น ____
7. มักจะบีบแตร หรือส่งสัญญาณมือ รู้สึกอารมณ์เสียเมื่อถูกขับรถตัดหน้า ____
8. ท่านมักจะขับรถจี้ท้ายคันข้างหน้าที่ขับช้า ____
9. การเปิดเพลงจังหวะสนุกเสียงดังในรถทำให้ท่านขับรถเร็วขึ้น ____
10. ท่านชอบขับรถที่มีกำลังเครื่องยนต์แรง มากกว่ารถที่ให้ความสะดวกสบาย ____
11. การขับขี่รถด้วยความเร็วสูงกว่าความเร็วที่จำกัดไว้ซัก10 กม.ต่อชม. เป็นครั้งคราวก็ไม่เป็นไร ____
12. รู้สึกหงุดหงิดเมื่อรถข้างหน้าเร่งความเร็วสูงขึ้น เมื่อท่านกำลังพยายามที่จะขับแซง ____
13. ท่านมักจะขับรถเร็วเพื่อที่จะไปถึงจุดหมายปลายทางได้เร็วขึ้น ____

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1	2	3	4	5	6
ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วยเล็กน้อย	เห็นด้วย	เห็นด้วยอย่างยิ่ง

14. ท่านรู้สึกว่าสามารถควบคุมรถได้ตลอดเวลาขณะขับรถ ____

15. การขับรถเร็วทำให้เพื่อนๆเห็นว่าท่านมีทักษะและมีความชำนาญในการขับรถ ____

16. ท่านสามารถปรับการขับรถให้เหมาะสมกับทุกสภาพถนน ____

17. ท่านรู้สึกหงุดหงิดขณะขับรถในสภาพการจราจรที่ติดขัดอย่างหนัก ____

18. ท่านสามารถดื่มเครื่องดื่มมึนเมาและขับรถ เมื่อท่านรู้ตัวว่ายังสามารถควบคุมรถได้ ____

19. การขับรถเร็วทำให้ท่านรู้สึกตื่นเต้น ____

20. เมื่อขับรถติดสัญญาณไฟแดง ท่านรู้สึกอยากให้เปิดสัญญาณไฟเขียวไวๆ ____

21. ทักษะการขับรถของท่าน ช่วยให้สามารถขับขี่บนท้องถนนได้อย่างปลอดภัย ____

22. ท่านมักจะขับรถเร็วกว่าความเร็วที่จำกัดไว้บนท้องถนน ____

23. ท่านมักขับรถเร็วขึ้นเมื่อรู้สึกโกรธ ____

24. ทักษะและความชำนาญในการขับรถของท่าน สูงกว่าคนส่วนมากที่ขับขี่รถบนถนน ____

25. ท่านมักจะขับแซงรถคันอื่นในบริเวณเส้นทึบห้ามแซง ____

26. ท่านมักจะเร่งความเร็วรถเพื่อขับผ่านสัญญาณไฟจราจรสีเหลือง ____

27. ท่านให้ความสนใจกับผู้ใช้รถใช้ถนนคนอื่นๆเสมอ ____

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1 2 3 4 5 6

ไม่เห็นด้วยอย่างยิ่ง ไม่เห็นด้วย ไม่แน่ใจ เห็นด้วยเล็กน้อย เห็นด้วย เห็นด้วยอย่างยิ่ง

28. กฎหมายจราจรในปัจจุบันมีความเข้มงวดมากเกินไป _____

29. ท่านสามารถควบคุมรถได้อย่างง่ายดาย หลังจากรถลื่นไถลบนถนนเปียก _____

30. เป็นไปได้ยากที่การขับรถของท่านจะก่อให้เกิดอุบัติเหตุ _____

31. ถึงแม้ท่านจะขับรถเร็วกว่าความเร็วที่จำกัดไว้ก็ไม่มีปัญหา เพราะท่านเป็นนักขับที่ดี _____

32. ท่านชอบที่จะขับรถแข่งกับรถคันอื่นบริเวณสัญญาณไฟจราจร _____

33. ท่านสามารถขับรถฝ่าสัญญาณไฟแดงหรือป้ายหยุดรถได้ขณะขับรถในเวลากลางคืน หากท่านระมัดระวังเป็นอย่างดี _____

34. การขับรถเร็วทำให้จิตใจของท่านรู้สึกสงบ _____

35. ท่านรู้สึกรำคาญ รถคันอื่นที่ขับช้าและอยู่บนเลนขวาบนทางด่วน _____

36. ท่านสามารถที่จะคะคำนวนความเร็วของรถที่กำลังขับเข้ามาใกล้ได้อย่างแม่นยำ _____

37. ท่านสามารถขับรถเปลี่ยนเลนได้อย่างคล่องแคล่วในสภาพการจราจรที่ติดขัด _____

38. ท่านพยายามอย่างที่สุดที่จะไม่ฝ่าฝืนกฎจราจร _____

39. ท่านมักจะขับรถออกมาจากไหล่ทางขณะที่กำลังมีรถขับสวนมาเสมอ _____

40. ท่านสามารถแก้ปัญหาได้อย่างรวดเร็ว เมื่อต้องเผชิญกับอันตรายที่ไม่คาดคิดขณะขับรถ _____

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ส่วนที่ 3

คำถามส่วนนี้สอบถามเกี่ยวกับทัศนคติของท่านที่มีต่อการใช้ชีวิตโดยทั่วๆไป กรุณาเขียนหมายเลขลงในท้ายของแต่ละหัวข้อที่ตรงกับความเป็นจริงมากที่สุด

1_____2_____3_____4_____5_____6

ไม่เห็นด้วยอย่างยิ่ง ไม่เห็นด้วย ไม่แน่ใจ เห็นด้วยเล็กน้อย เห็นด้วย เห็นด้วยอย่างยิ่ง

1. หลายครั้งที่ท่านไม่ได้ตั้งใจทำในสิ่งที่สังคมไม่ยอมรับ แต่กลับพบว่าท่านมักจะทำสิ่งนั้นเสียเอง _____

2. ท่านมักจะทำสิ่งต่างๆที่ท่านทราบเป็นอย่างดีว่าพ่อแม่ไม่ชอบ _____

3. ท่านมักจะคิดถึงการกระทำสิ่งต่างๆที่ไม่ชอบด้วยกฎหมาย _____

4. ท่านมักจะกระทำสิ่งนั้นต่อไป แม้ว่าจะเป็นสิ่งที่ผิดศีลธรรมก็ตาม _____

5. ท่านมักจะนึกถึงการกระทำต่างๆ ที่ตนเองรู้ว่าเพื่อนๆอาจไม่เห็นด้วย _____

6. ท่านชอบความรู้สึกต่างๆ ที่เกิดขึ้นพร้อมๆ กับการเสี่ยงภัยทางกายภาพ _____

7. ท่านมักคิดว่าตัวเองเป็นคนที่ชอบความท้าทายและการเสี่ยงภัย _____

8. ท่านไม่กล้าที่จะลองทำสิ่งอะไรใหม่ๆแม้สิ่งนั้นจะให้ความสนุกสนานแก่ท่านในภายหลัง _____

9. กิจกรรมใดที่มีความเสี่ยงมาก ก็ยิ่งสนุกเร้าใจมาก _____

10. ท่านชอบทำสิ่งต่างๆ ที่มักจะทำให้ตนเองต้องตกตะลึงเพราะความกลัว _____

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ส่วนที่ 4

โปรดพิจารณากิจกรรมในแต่ละข้อต่อไปนี้อย่างรอบคอบ และกรุณาระบุระดับของความอันตราย ในกิจกรรมแต่ละข้อโดยเขียนหมายเลขลงในท้ายของแต่ละหัวข้อที่ตรงกับความคิดของท่านมากที่สุด

1_____2_____3_____4_____5_____6

ไม่เป็นอันตราย ค่อนข้างอันตราย อันตรายพอสมควร อันตรายปานกลาง อันตราย อันตรายมาก

1. ปีนเขา _____
2. เที่ยวสำรวจเมืองที่ไม่เคยไปมาก่อนคนเดียว _____
3. สูบกัญชา _____
4. การใช้ยาเสพติดชนิดหลอนประสาท _____
5. สกีน้ำ _____
6. ดำน้ำลึก _____
7. กระโดดร่มชูชีพ _____
8. นัดไปเที่ยวกับคนแปลกหน้า _____
9. ดื่มเครื่องดื่มแอลกอฮอล์ปริมาณมากๆ _____
10. การแล่นเรือใบข้ามมหาสมุทร _____
11. การสูบบุหรี่ _____
12. การรับประทานอาหารที่มีไขมันปริมาณมากๆ _____
13. การเล่นสกีลงเขาด้วยความเร็วสูง _____

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1_____2_____3_____4_____5_____6

ไม่เป็นอันตราย ค่อนข้างอันตราย อันตรายพอสมควร อันตรายปานกลาง อันตราย อันตรายมาก

14. การกระโดดลงน้ำจากกระดานกระโดดสูงที่สระว่ายน้ำ _____

15. การใช้สารเสพติดประเภทกระตุ้นประสาท _____

16. การเดินทางไปยังประเทศแปลกๆ โดยไม่ ได้การวางแผนก่อนการเดินทาง _____

17. การมีคู่นอนหลายคน _____

18. การเสพโคเคน _____

ส่วนที่ 5

1. ท่านเคยประสบอุบัติเหตุทางถนนหรือมีส่วนเกี่ยวข้องในอุบัติเหตุขณะขับรถ ในระยะเวลาสองปีที่ผ่านมา

_____ เคย _____ ไม่เคย

ถ้าตอบว่า "เคย" ท่านประสบอุบัติเหตุทางถนน หรือมีส่วนเกี่ยวข้องในอุบัติเหตุกี่ครั้งขณะขับรถ

_____ จำนวนการเกิดอุบัติเหตุทางถนนในระยะเวลาสองปีที่ผ่านมา

2. ท่านเคยโดนเรียกให้จอดรถ หรือโดนตั้งข้อหาโดยตำรวจจราจร ในการกระทำความผิดวินัยจราจรใดๆ ในเวลาสองปีที่ผ่านมาบ้างหรือไม่

_____ เคย _____ ไม่เคย

ถ้าตอบว่า "เคย"

(ก) ท่านเคยโดนเรียกให้จอดรถ หรือโดนตั้งข้อหาโดยตำรวจราจรในการกระทำความผิดวินัยจราจรกี่ครั้ง

_____ จำนวนครั้งของการกระทำความผิดวินัยจราจร โดยการเรียกให้จอดรถ หรือโดนตั้งข้อหาโดยตำรวจจราจรในเวลาสองปีที่ผ่านมา

(ข) โปรดระบุ **ประเภท** ของการกระทำความผิดวินัยจราจรที่คุณได้รับการเรียกเก็บ, เรียกจอด หรือตั้งข้อหาโดยตำรวจจราจร และ **จำนวนครั้ง** ในช่วงสองปีที่ผ่านมา

ประเภทของความผิดจราจร	ความถี่ (จำนวนครั้ง)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

ขอขอบพระคุณอย่างสูงในความร่วมมือและเวลาของท่าน

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APPENDIX C

Introduction Letter to Organizations from the University

มหาวิทยาลัยอัสสัมชัญ
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Ref. 194/2015

September 25, 2015

Dear Sir/Madam,

This letter is to introduce Ms. Chinarat Nakhasathien (ID. 5129434), a Master's Degree student at the Graduate School of Psychology, Assumption University of Thailand. She is conducting a research for her final thesis, which concern young Thai male drivers in Bangkok and driving motives. This study is being conducted under the supervision of Assoc. Prof. Dr. Robert Ho.

We are hereby seeking your permission to allow her to carry out a survey with her questionnaire for the members of your organization.

If you require any further information, please do not hesitate to contact her by phone at (083) 198 1898, or by email at chinarat_n@yahoo.com. Alternatively you may contact our program at the school office by calling 02 300 4543 ext. 3636 or by emailing counseling@au.edu.

Thank you for your kind attention, any help or suggestions would be much appreciated.

Yours sincerely,

Assoc.Prof.Dr. Suwattana Eamoraphan
Acting Program Director of M.S.CP & Ph.D.CP
Graduate School of Psychology

APPENDIX 1

Frequencies

Statistics

		age	educ	income	employ	license
N	Valid	300	300	299	299	300
	Missing	0	0	1	1	0
Mean		24.9467	4.3933	3.1739	1.5786	4.7167
Median		25.0000	5.0000	3.0000	1.0000	5.0000
Std. Deviation		2.50428	1.02410	1.42715	1.40577	2.28483

Frequency Table

age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19.00	11	3.7	3.7	3.7
	20.00	8	2.7	2.7	6.3
	21.00	12	4.0	4.0	10.3
	22.00	28	9.3	9.3	19.7
	23.00	19	6.3	6.3	26.0
	24.00	37	12.3	12.3	38.3
	25.00	46	15.3	15.3	53.7
	26.00	36	12.0	12.0	65.7
	27.00	48	16.0	16.0	81.7
	28.00	55	18.3	18.3	100.0
	Total	300	100.0	100.0	

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educ

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-2 years secondary	19	6.3	6.3	6.3
	3-4 years secondary	44	14.7	14.7	21.0
	5-6 years secondary	57	19.0	19.0	40.0
	technical-trade	160	53.3	53.3	93.3
	tertiary	20	6.7	6.7	100.0
	Total	300	100.0	100.0	

income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than $10,000 per year	21	7.0	7.0	7.0
	10,001-$20,000 per year	98	32.7	32.8	39.8
	$20,001-$30,000 per year	69	23.0	23.1	62.9
	$30,001-$40,000 per year	60	20.0	20.1	82.9
	$40,001-$50,000 per year	31	10.3	10.4	93.3
	$50,001-$60,000 per year	10	3.3	3.3	96.7
	$60,001 or more per year	10	3.3	3.3	100.0
	Total	299	99.7	100.0	
Missing	System	1	.3		
Total		300	100.0		

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employ

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	full time paid employment	241	80.3	80.6	80.6
	part-time paid employment	23	7.7	7.7	88.3
	Household duties	2	.7	.7	89.0
	unemployed	2	.7	.7	89.6
	student (study only)	15	5.0	5.0	94.6
	student (study and work)	16	5.3	5.4	100.0
	Total	299	99.7	100.0	
Missing	System	1	.3		
Total		300	100.0		

license

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	26	8.7	8.7	8.7
	2.00	34	11.3	11.3	20.0
	3.00	33	11.0	11.0	31.0
	4.00	45	15.0	15.0	46.0
	5.00	56	18.7	18.7	64.7
	6.00	46	15.3	15.3	80.0
	7.00	22	7.3	7.3	87.3
	8.00	17	5.7	5.7	93.0
	9.00	14	4.7	4.7	97.7
	10.00	7	2.3	2.3	100.0
	Total	300	100.0	100.0	

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APPENDIX 2

Factor Analysis

Communalities

	Initial	Extraction
m1	1.000	.333
m2	1.000	.416
m3	1.000	.419
m4	1.000	.384
m5	1.000	.149
m6	1.000	.392
m7	1.000	.344
m8	1.000	.515
m9	1.000	.439
m10	1.000	.444
m11	1.000	.313
m12	1.000	.417
m13	1.000	.394
m14	1.000	.457
m15	1.000	.371
m16	1.000	.413
m17	1.000	.456
m18	1.000	.521
m19	1.000	.367
m20	1.000	.425
m21	1.000	.469
m22	1.000	.338
m23	1.000	.368
m24	1.000	.431

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m25	1.000	.144
m26	1.000	.347
m27	1.000	.303
m28	1.000	.101
m29	1.000	.255
m30	1.000	.333
m31	1.000	.380
m32	1.000	.598
m33	1.000	.356
m34	1.000	.506
m35	1.000	.457
m36	1.000	.409
m37	1.000	.453
m38	1.000	.123
m39	1.000	.221
m40	1.000	.319

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.632	24.080	24.080	9.632	24.080	24.080	8.241
2	3.151	7.877	31.957	3.151	7.877	31.957	4.063
3	2.097	5.244	37.200	2.097	5.244	37.200	5.523
4	1.538	3.846	41.046				
5	1.310	3.275	44.321				

6	1.259	3.146	47.468				
7	1.187	2.967	50.434				
8	1.158	2.895	53.330				
9	1.062	2.655	55.985				
10	1.033	2.582	58.567				
11	.980	2.451	61.018				
12	.952	2.379	63.397				
13	.920	2.301	65.698				
14	.857	2.142	67.841				
15	.847	2.118	69.958				
16	.811	2.026	71.985				
17	.744	1.860	73.845				
18	.701	1.753	75.598				
19	.664	1.660	77.258				
20	.652	1.631	78.889				
21	.630	1.576	80.465				
22	.622	1.556	82.021				
23	.571	1.428	83.449				
24	.548	1.370	84.819				
25	.533	1.332	86.151				
26	.500	1.251	87.402				
27	.489	1.223	88.624				
28	.459	1.146	89.771				

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29	.426	1.064	90.835				
30	.420	1.050	91.884				
31	.404	1.011	92.895				
32	.389	.973	93.868				
33	.373	.933	94.801				
34	.349	.873	95.674				
35	.332	.831	96.505				
36	.316	.791	97.296				
37	.298	.745	98.041				
38	.284	.709	98.750				
39	.277	.694	99.443				
40	.223	.557	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

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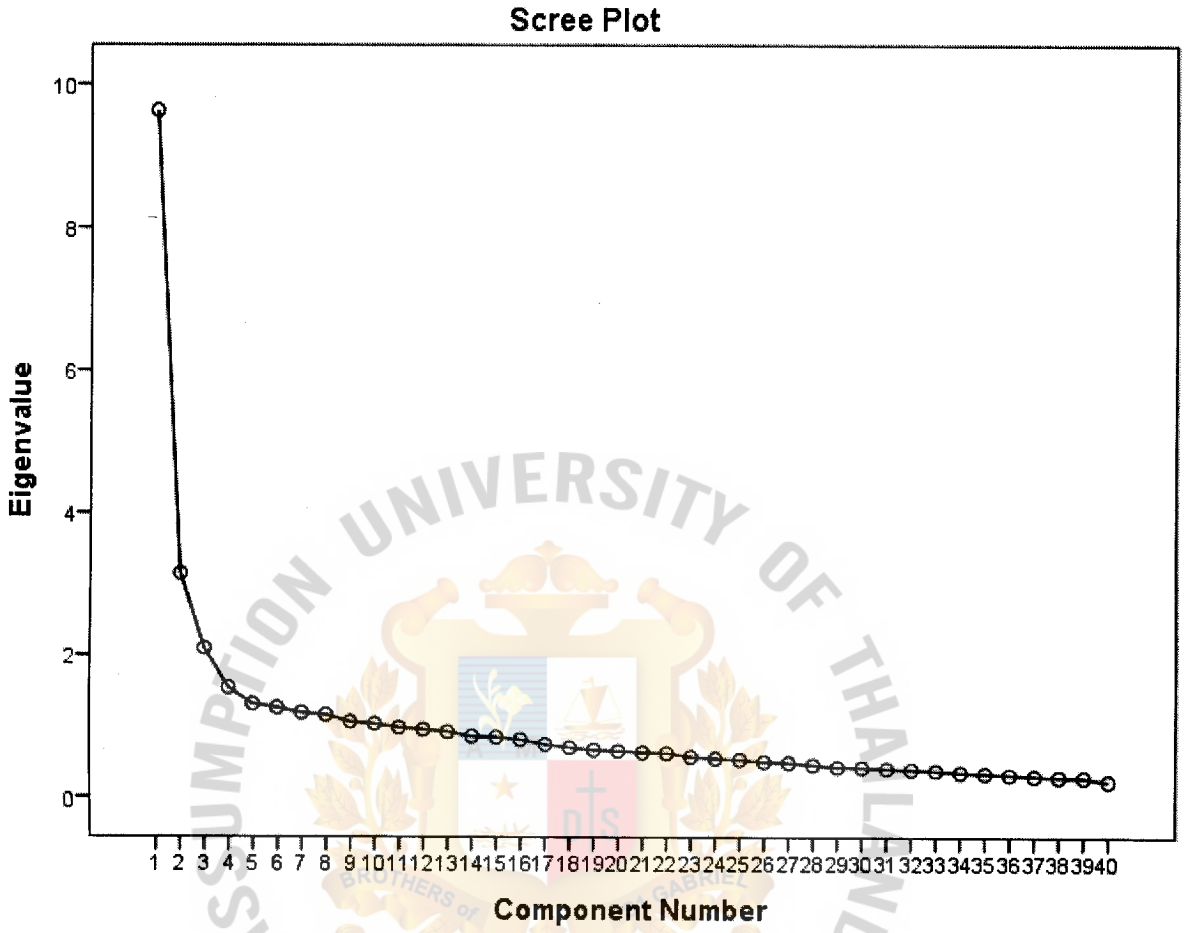

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Component Matrix[a]

	Component		
	1	2	3
m8	.672		
m34	.655		
m10	.651		
m2	.641		
m24	.633		

m6	.609		
m9	.606		
m32	.600		
m3	.578		
m23	.577		
m22	.576		
m31	.574		
m26	.572		
m18	.562	-.438	
m13	.556		
m37	.556		
m35	.556		
m11	.555		
m36	.551		
m19	.547		
m7	.532		
m12	.490		-.420
m15	.487		
m17	.478		-.472
m30	.462		
m20	.452		-.440
m1	.446		
m29	.414		

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m33			
m40			
m5			
m28			
m21		.629	
m4		.598	
m16		.591	
m14		.581	
m27		.531	
m39			
m38			
m25			

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Pattern Matrix[a]

	Component		
	1	2	3
m17	.709		
m12	.689		
m35	.669		
m20	.653		
m9	.627		
m13	.619		

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m19	.605		
m7	.577		
m23	.559		
m8	.535		
m10	.520		
m26	.518		
m3	.490		
m2	.485		
m11	.460		
m6	.417		
m1			
m22			
m5			
m14		.670	
m16		.655	
m4		.629	
m21		.615	
m27		.541	
m40		.483	
m37		.477	
m30		.439	
m36		.428	
m32			.698

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m33			.590
m15			.543
m34			.499
m18			.491
m39			.451
m24			
m25			
m29			
m38			
m31			
m28			

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 17 iterations.

Structure Matrix

	Component		
	1	2	3
m35	.647		
m9	.646		
m17	.628		
m8	.628		.521
m12	.622		
m13	.619		

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m10	.611		.454
m19	.605		
m23	.597		
m2	.588		.439
m20	.586		
m7	.581		
m26	.572		
m3	.555		.455
m6	.539		
m11	.532		
m22	.489		.440
m5			
m14		.672	
m21		.636	
m16		.617	
m4		.608	
m37		.540	
m27		.537	
m40		.515	
m36	.415	.498	
m30		.495	
m32	.400		.754
m34	.533		.621

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m18	.485		.597
m33			.594
m15			.592
m24	.500		.504
m39			.449
m31	.439		.439
m1	.419		.427
m29			
m25			
m28			
m38			

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2	3
1	1.000	.212	.333
2	.212	1.000	.074
3	.333	.074	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

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APPENDIX 3

Reliability

Scale: Drive_fast_risk_taking

Case Processing Summary

		N	%
Cases	Valid	297	99.0
	Excluded[a]	3	1.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.886	16

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
m17	57.8990	150.240	.504	.881
m12	58.4209	146.596	.516	.880
m35	58.1549	146.550	.540	.879
m20	57.8788	151.276	.466	.882
m9	58.9394	142.544	.592	.877
m13	58.6195	147.662	.567	.878
m19	58.8182	147.284	.510	.880
m7	59.0471	144.011	.523	.880
m23	58.9596	144.802	.558	.878

m8	59.5623	140.686	.606	.876
m10	58.8519	142.174	.580	.877
m26	59.0774	146.768	.522	.880
m3	59.5455	147.465	.526	.880
m2	59.2054	143.995	.550	.879
m11	58.8721	149.693	.511	.880
m6	59.3603	146.981	.525	.880

Reliability

Scale: confidence

Case Processing Summary

		N	%
Cases	Valid	297	99.0
	Excluded[a]	3	1.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.769	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
m14	32.3704	24.572	.546	.733
m16	32.6566	25.415	.426	.751

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m4	32.3401	25.644	.415	.752
m21	32.1414	25.406	.499	.740
m27	32.3535	25.858	.376	.758
m40	32.7609	25.730	.455	.746
m37	33.2256	24.479	.476	.743
m30	32.9562	25.562	.400	.755
m36	33.0673	25.043	.464	.745

Reliability

Scale: disrespect

Case Processing Summary

		N	%
Cases	Valid	297	99.0
	Excluded[a]	3	1.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.754	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted

m32	14.2054	19.475	.624	.680
m33	14.6061	21.638	.463	.726
m15	13.7778	22.714	.452	.729
m34	13.7710	19.576	.571	.695
m18	14.1347	20.637	.513	.713
m39	14.4209	23.441	.338	.756

Reliability

Scale: sensation_seeking

Case Processing Summary

		N	%
Cases	Valid	300	100.0
	Excluded[a]	0	.0
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.827	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ss1	24.54333	40.965	.515	.811
ss2	24.66667	39.293	.534	.809
ss3	25.32000	40.325	.421	.824
ss4	25.73333	40.751	.487	.814

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ss5	24.65000	41.004	.480	.815
ss6	25.15333	39.267	.620	.799
ss7	24.84000	39.600	.553	.806
ss9	24.71333	40.212	.532	.809
ss10	25.10000	38.699	.655	.795

Reliability

Scale: danger

Case Processing Summary

		N	%
Cases	Valid	299	99.7
	Excluded[a]	1	.3
	Total	300	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.937	18

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
d1	57.6254	320.765	.661	.934
d2	58.9064	338.763	.439	.938
d3	57.1973	321.823	.561	.936
d4	56.2040	323.995	.672	.934

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d5	58.4649	326.646	.671	.934
d6	57.9498	322.927	.634	.934
d7	56.9599	325.576	.608	.935
d8	58.4415	313.509	.701	.933
d9	58.0870	311.341	.729	.932
d10	57.4515	317.658	.719	.933
d11	58.2943	311.510	.731	.932
d12	58.4448	319.026	.686	.933
d13	57.0334	316.348	.777	.931
d14	58.4950	323.526	.638	.934
d15	56.0769	328.655	.674	.934
d16	58.6555	321.770	.663	.934
d17	57.9866	311.067	.692	.933
d18	55.8060	337.580	.503	.937

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APPENDIX 4

Frequencies

Statistics

		drive_fast_risk_taking	confidence	disrespect	sensation_seeking	danger
N	Valid	300	300	300	300	300
	Missing	0	0	0	0	0
Mean		3.9206	4.0822	2.8256	3.1010	3.3950
Median		4.0000	4.1111	2.8333	3.1000	3.3333
Std. Deviation		.80296	.61708	.89848	.70779	1.05251

Frequency Table

drive_fast_risk_taking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.81	1	.3	.3	.3
	1.88	1	.3	.3	.7
	2.00	1	.3	.3	1.0
	2.06	1	.3	.3	1.3
	2.13	1	.3	.3	1.7
	2.19	3	1.0	1.0	2.7
	2.25	2	.7	.7	3.3
	2.31	1	.3	.3	3.7
	2.38	3	1.0	1.0	4.7

2.44	4	1.3	1.3	6.0
2.50	3	1.0	1.0	7.0
2.56	3	1.0	1.0	8.0
2.63	3	1.0	1.0	9.0
2.69	2	.7	.7	9.7
2.75	4	1.3	1.3	11.0
2.81	2	.7	.7	11.7
2.88	2	.7	.7	12.3
2.94	5	1.7	1.7	14.0
3.00	5	1.7	1.7	15.7
3.06	7	2.3	2.3	18.0
3.13	2	.7	.7	18.7
3.19	4	1.3	1.3	20.0
3.25	6	2.0	2.0	22.0
3.31	6	2.0	2.0	24.0
3.38	1	.3	.3	24.3
3.44	8	2.7	2.7	27.0
3.50	8	2.7	2.7	29.7
3.56	3	1.0	1.0	30.7
3.63	10	3.3	3.3	34.0
3.69	6	2.0	2.0	36.0
3.75	8	2.7	2.7	38.7
3.81	9	3.0	3.0	41.7
3.88	12	4.0	4.0	45.7
3.94	6	2.0	2.0	47.7
4.00	10	3.3	3.3	51.0
4.06	11	3.7	3.7	54.7
4.13	9	3.0	3.0	57.7

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4.19	7	2.3	2.3	60.0
4.25	8	2.7	2.7	62.7
4.31	5	1.7	1.7	64.3
4.38	9	3.0	3.0	67.3
4.44	10	3.3	3.3	70.7
4.50	13	4.3	4.3	75.0
4.56	7	2.3	2.3	77.3
4.63	12	4.0	4.0	81.3
4.69	5	1.7	1.7	83.0
4.75	10	3.3	3.3	86.3
4.81	10	3.3	3.3	89.7
4.88	6	2.0	2.0	91.7
4.94	7	2.3	2.3	94.0
5.00	2	.7	.7	94.7
5.06	3	1.0	1.0	95.7
5.13	5	1.7	1.7	97.3
5.19	3	1.0	1.0	98.3
5.31	1	.3	.3	98.7
5.38	1	.3	.3	99.0
5.56	1	.3	.3	99.3
5.69	1	.3	.3	99.7
5.81	1	.3	.3	100.0
Total	300	100.0	100.0	

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confidence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.11	1	.3	.3	.3
	2.22	1	.3	.3	.7
	2.44	1	.3	.3	1.0
	2.56	1	.3	.3	1.3
	2.78	2	.7	.7	2.0
	2.89	7	2.3	2.3	4.3
	3.00	5	1.7	1.7	6.0
	3.11	7	2.3	2.3	8.3
	3.22	6	2.0	2.0	10.3
	3.33	8	2.7	2.7	13.0
	3.44	11	3.7	3.7	16.7
	3.56	8	2.7	2.7	19.3
	3.67	13	4.3	4.3	23.7
	3.78	27	9.0	9.0	32.7
	3.88	1	.3	.3	33.0
	3.89	26	8.7	8.7	41.7
	4.00	13	4.3	4.3	46.0
	4.11	25	8.3	8.3	54.3
	4.22	23	7.7	7.7	62.0
	4.33	24	8.0	8.0	70.0
	4.44	15	5.0	5.0	75.0
	4.56	18	6.0	6.0	81.0
	4.67	15	5.0	5.0	86.0

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	4.78	18	6.0	6.0	92.0
	4.89	2	.7	.7	92.7
	5.00	4	1.3	1.3	94.0
	5.11	8	2.7	2.7	96.7
	5.22	2	.7	.7	97.3
	5.33	2	.7	.7	98.0
	5.44	3	1.0	1.0	99.0
	5.56	1	.3	.3	99.3
	5.67	1	.3	.3	99.7
	5.89	1	.3	.3	100.0
	Total	300	100.0	100.0	

disrespect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	.7	.7	.7
	1.17	7	2.3	2.3	3.0
	1.33	10	3.3	3.3	6.3
	1.50	16	5.3	5.3	11.7
	1.67	11	3.7	3.7	15.3
	1.83	10	3.3	3.3	18.7
	2.00	14	4.7	4.7	23.3
	2.17	16	5.3	5.3	28.7
	2.33	13	4.3	4.3	33.0
	2.50	23	7.7	7.7	40.7
	2.67	15	5.0	5.0	45.7

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	2.83	20	6.7	6.7	52.3
	3.00	22	7.3	7.3	59.7
	3.17	16	5.3	5.3	65.0
	3.33	18	6.0	6.0	71.0
	3.50	17	5.7	5.7	76.7
	3.67	17	5.7	5.7	82.3
	3.83	17	5.7	5.7	88.0
	4.00	11	3.7	3.7	91.7
	4.17	8	2.7	2.7	94.3
	4.33	11	3.7	3.7	98.0
	4.50	3	1.0	1.0	99.0
	4.67	2	.7	.7	99.7
	4.83	1	.3	.3	100.0
	Total	300	100.0	100.0	

sensation_seeking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.30	1	.3	.3	.3
	1.40	2	.7	.7	1.0
	1.50	1	.3	.3	1.3
	1.60	2	.7	.7	2.0
	1.70	3	1.0	1.0	3.0
	1.80	4	1.3	1.3	4.3
	1.90	2	.7	.7	5.0
	2.00	7	2.3	2.3	7.3
	2.10	5	1.7	1.7	9.0
	2.20	5	1.7	1.7	10.7

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2.30	15	5.0	5.0	15.7
2.40	12	4.0	4.0	19.7
2.50	11	3.7	3.7	23.3
2.60	11	3.7	3.7	27.0
2.70	14	4.7	4.7	31.7
2.80	16	5.3	5.3	37.0
2.90	13	4.3	4.3	41.3
3.00	16	5.3	5.3	46.7
3.10	14	4.7	4.7	51.3
3.20	16	5.3	5.3	56.7
3.30	19	6.3	6.3	63.0
3.40	19	6.3	6.3	69.3
3.50	12	4.0	4.0	73.3
3.60	16	5.3	5.3	78.7
3.70	8	2.7	2.7	81.3
3.80	7	2.3	2.3	83.7
3.90	6	2.0	2.0	85.7
4.00	10	3.3	3.3	89.0
4.10	15	5.0	5.0	94.0
4.20	5	1.7	1.7	95.7
4.30	4	1.3	1.3	97.0
4.40	2	.7	.7	97.7
4.50	1	.3	.3	98.0
4.60	4	1.3	1.3	99.3
4.70	1	.3	.3	99.7
5.00	1	.3	.3	100.0
Total	300	100.0	100.0	

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danger

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.33	1	.3	.3	.3
	1.44	1	.3	.3	.7
	1.50	4	1.3	1.3	2.0
	1.56	3	1.0	1.0	3.0
	1.61	1	.3	.3	3.3
	1.67	1	.3	.3	3.7
	1.72	5	1.7	1.7	5.3
	1.78	5	1.7	1.7	7.0
	1.89	3	1.0	1.0	8.0
	1.94	6	2.0	2.0	10.0
	2.00	3	1.0	1.0	11.0
	2.06	3	1.0	1.0	12.0
	2.11	2	.7	.7	12.7
	2.17	3	1.0	1.0	13.7
	2.22	8	2.7	2.7	16.3
	2.28	9	3.0	3.0	19.3
	2.33	6	2.0	2.0	21.3
	2.39	5	1.7	1.7	23.0
	2.44	4	1.3	1.3	24.3
	2.50	1	.3	.3	24.7
	2.56	3	1.0	1.0	25.7
	2.61	5	1.7	1.7	27.3
	2.67	7	2.3	2.3	29.7
	2.72	4	1.3	1.3	31.0

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2.78	5	1.7	1.7	32.7
2.83	4	1.3	1.3	34.0
2.89	5	1.7	1.7	35.7
2.94	10	3.3	3.3	39.0
3.00	2	.7	.7	39.7
3.06	6	2.0	2.0	41.7
3.11	6	2.0	2.0	43.7
3.17	5	1.7	1.7	45.3
3.22	4	1.3	1.3	46.7
3.28	8	2.7	2.7	49.3
3.33	5	1.7	1.7	51.0
3.39	3	1.0	1.0	52.0
3.44	4	1.3	1.3	53.3
3.50	2	.7	.7	54.0
3.56	4	1.3	1.3	55.3
3.61	5	1.7	1.7	57.0
3.67	9	3.0	3.0	60.0
3.72	5	1.7	1.7	61.7
3.78	6	2.0	2.0	63.7
3.83	7	2.3	2.3	66.0
4.00	8	2.7	2.7	68.7
4.06	3	1.0	1.0	69.7
4.11	4	1.3	1.3	71.0
4.17	5	1.7	1.7	72.7
4.18	1	.3	.3	73.0
4.22	4	1.3	1.3	74.3
4.28	9	3.0	3.0	77.3
4.33	2	.7	.7	78.0

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4.39	3	1.0	1.0	79.0
4.44	5	1.7	1.7	80.7
4.50	2	.7	.7	81.3
4.56	6	2.0	2.0	83.3
4.61	1	.3	.3	83.7
4.67	6	2.0	2.0	85.7
4.72	6	2.0	2.0	87.7
4.78	4	1.3	1.3	89.0
4.83	4	1.3	1.3	90.3
4.89	3	1.0	1.0	91.3
4.94	8	2.7	2.7	94.0
5.00	3	1.0	1.0	95.0
5.06	1	.3	.3	95.3
5.11	4	1.3	1.3	96.7
5.17	2	.7	.7	97.3
5.28	2	.7	.7	98.0
5.44	4	1.3	1.3	99.3
5.50	*1	.3	.3	99.7
5.56	1	.3	.3	100.0
Total	300	100.0	100.0	

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APPENDIX 5

Correlations

Correlations

		sensation_seeking	danger	freqenc	times
drive_fast_risk_taking	Pearson Correlation	.488	-.457	.296	.133
	Sig. (2-tailed)	.000	.000	.000	.021
	N	300	300	300	300
confidence	Pearson Correlation	.162	-.063	.019	.187
	Sig. (2-tailed)	.005	.274	.748	.001
	N	300	300	300	300
disrespect	Pearson Correlation	.615	-.504	.275	.128
	Sig. (2-tailed)	.000	.000	.000	.026
	N	300	300	300	300

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