Seat Belt Use Intention among Brazilian Undergraduate Students

Intención de Uso del Cinturón de Seguridad en Estudiantes Universitarios Brasileños

Intenção de Uso do Cinto de Segurança em Estudantes Universitários Brasileiros

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Abstract

The objectives of this study were to explore self-reported seat belt use and group differences in different scenarios in a Brazilian sample and research the variables related to it. 120 college students answered a questionnaire with variables from the *theory of planned behavior* in order to evaluate the intention of seat belt use among car occupants. Results indicated that attitude and intention were the variables that most contributed to explaining seat belt use. Intention was highly correlated with seat belt use, and attitude was correlated with intention. Seat belt use was more frequent among drivers and taxi passengers, but not among front and rear seat passengers. The article discusses the implications of the findings for possible interventions to encourage the use of seat belts among drivers and passengers.

***Keywords*:** seat belt use, traffic behavior, safety behavior, drivers, traffic psychology.

Resumen

Los objetivos de este estudio fueron explorar el uso del cinturón de seguridad y su diferencia entre varios escenarios (e. g. conductor, pasajero de taxi, etc.), e investigar las variables relacionadas con dicho uso. Para tal fin, 120 estudiantes universitarios, procedentes de Brasil, respondieron un cuestionario que evaluó las variables propuestas por la *teoría del comportamiento planeado* sobre la intención de uso del cinturón. Los resultados indicaron que las variables actitud e intención contribuyeron en gran medida a la explicación del uso del cinturón de seguridad. La intención estuvo altamente correlacionada con el uso del cinturón de seguridad, y la actitud con la intención. El uso del cinturón de seguridad fue más frecuente en conductores y pasajeros de taxi, que en pasajeros en la silla delantera y trasera. Se discuten las implicaciones de los resultados en intervenciones orientadas a fomentar su uso entre conductores y pasajeros.

***Palabras clave*:** uso del cinturón de seguridad, comportamiento en el tráfico, comportamiento de protección, conductores, psicología del tráfico.

Resumo

Os objetivos deste estudo foram explorar o uso do cinto de segurança e sua diferença entre vários cenários (por exemplo motorista, passageiro de táxi, etc.), e pesquisar as variáveis relacionadas com o uso. Para tal fim, 120 estudantes universitários, procedentes do Brasil, responderam a um questionário que avaliou as variáveis propostas pela *teoria do comportamento planejado* sobre a intenção de uso do cinto. Os resultados indicaram que as variáveis atitude e intenção contribuíram em grande medida para a explicação do uso do cinto de segurança. A intenção esteve altamente correlacionada com o uso do cinto de segurança e com a atitude com a intenção. O uso do cinto de segurança foi mais frequente em motoristas e passageiros de táxi que em passageiros do banco da frente e traseiro. Discutem-se as implicações dos resultados em intervenções orientadas a fomentar seu uso entre motoristas e passageiros.

Palavras-chave: uso do cinto de segurança, comportamento no tráfego, comportamento de proteção, motoristas, psicologia do tráfego.

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TRAFFIC CRASHES are one of the major causes of deaths and injuries around the world, especially in developing countries (Toroyan & Peden, 2007). In Brazil, the mortality rate was 30.1 per 100,000 inhabitants in 2008, where car occupants comprised 48% of traffic deaths (Confederação Nacional de Municípios, 2009). With the main goal of reducing injury risks in traffic crashes, and consequently death, protective measures such as seat belts have been made compulsory.

Seat belts are one of the most effective passive protection car equipment for all occupants. In the moment of a collision, car occupants without seat belts continue moving at the speed of the vehicle before the crash. They could be thrown out of the vehicle or hit vehicle structures or, if traveling in the rear seat, they could hit the back of the front seat (Elvik, Høye, Vaa, & Sørensen, 2009). Being thrown out of the vehicle or hitting vehicle structures increases the likelihood of serious injuries and death (Elvik et al., 2009; FIA Foundation for the Automobile and Society, 2009). Reports reveal that three quarters of those who are thrown out of the vehicle die (FIA Foundation, 2009).

International studies have demonstrated the effectiveness of seat belts to reduce injuries and fatalities in traffic crashes (Cummings, Rivara, Olson, & Smith, 2006; Elvik et al., 2009; Evans, 1996). They reduce the probability of death from 40 to 50% for drivers and front seat passengers, and around 25% for rear seat passengers (Elvik et al., 2009; Evans, 1996). Seat belt use by rear seat passengers not only reduces the possibility and severity of injuries for themselves, but also for the driver and front seat passenger (FIA Foundation, 2009), thus justifying the importance of its use even in the rear seats. An epidemiological study conducted in the city of São Paulo, Brazil showed a decrease in the rate of facial trauma since seat belts were made compulsory in 1997, demonstrating the benefit of the law even 15 years later (Barros, Campolongo, Zanluqui, & Duarte, 2010).

Studies about seat belt use have revealed that some variables such as gender, age and place occupied in the car could be related to compliance with the law and to use of seat belts (Factor, Mahalel, & Yair, 2007). However, studies conducted in different countries may present different results, showing the importance of taking into account demographic aspects when analyzing seat belt use. Results presented by Dee (1998) in the United States showed that women were 11% more likely to use seat belts, when compared to men, and that young male drivers were less likely to use seat belts in comparison to other groups. As for older drivers, they were less likely to use seat belts, probably due to the habit of not putting them on or forgetting to. In Turkey, Simsekoglu and Lajunen (2008) did not find significant differences between gender and age in the self-reported frequency of seat belt use. In a Brazilian study among college students, no associations were found between seat belt use by driver, front, and rear passengers and gender, suggesting that its use was not a habit for most students of both genders (Labiak, Leite, Filho, & Stocco, 2008).

Low frequency of seat belt use has been also associated with other violations committed by drivers. Studies showed that young male drivers were less likely to use seat belts, especially in situations where there is higher crash risk, such as drunk-driving or driving at night (Dee, 1998; Toroyan & Peden, 2007). Also, drivers classified as "high sensations seekers" were more likely to report that they do not always use seat belts, drive faster, and drive even when suspecting that their blood alcohol concentration was above the legal limit (Jonah, Thiessen, & Au-Yeung, 2001). In a study conducted in Mexico by Híjar-Medina, Flores-Aldana, and López-López (1996), alcohol consumption and speeding were significantly associated with non-use of seat belts. High speed and non-use of seat belts were also found by Vaa, Glad, Sagberg, Bjørnskau, and Berge (2002), who showed that drivers who reported never using seat belts drove faster

than those who reported always using them. Results by Iversen (2004) showed that negligent driving, drunk-driving, and non-use of seat belts were common behaviors among drivers who drove in a dangerous way. Simsekoglu and Lajunen (2009) researched seat belt use and health-related behaviors, and found that its use was positively correlated with some health-promoting behaviors such as a healthy diet and regular exercise. Thus, seat belt use could be explained as a general concern of health preservation (Simsekoglu & Lajunen, 2009) and a behavior associated with a safer driving style (Iversen, 2004).

There are many beliefs and reasons why drivers do not use seat belts. A study by the FIA Foundation (2009) pointed out that the most frequent were: inconvenience and discomfort; the presumption that one can prevent crashes by being skilled; worries that seat belts could trap one inside the car in case the car catches on fire or sinks under water; the belief that it is better to be thrown out of the car in the event of a crash than to be trapped inside; and the idea that it is unnecessary to use seat belts during short trips or at low speeds. Reasons pointed out by Chliaoutakis, Gnardellis, Drakou, Darviri, and Sboukis (2000) were discomfort and movement restriction. In a study among taxi drivers in Norway, Sagberg, Fosser, and Sktermo (1997) found that some drivers in cars with airbags and ABS brakes underestimated the importance of seat belts. They believed that seat belt use was not important if the car had airbags.

In addition to car occupants' characteristics and beliefs, social factors such as attitudes seem to affect seat belt use. Therefore, psychological theories have been used to explain how attitudes, norms, and intention could predict and influence it (Simsekoglu & Lajunen, 2008).

One theory that has been receiving empirical support in studies on traffic behavior is the *theory of planned behavior* (TPB) (Ajzen, 1985, 1991). TPB has been used to understand the influence of attitudes and intention, for example, in traffic violations behavior (e.g. Parker, Manstead, Stradling, Reason, & Baxter, 1992) and in seat belt use (Simsekoglu & Lajunen, 2008).

According to TPB, the stronger the intention to execute a behavior, the more probable its performance will be, where the intention is influenced by attitudes, social norms and perceived behavioral control (Ajzen, 1991). The implications for traffic safety are clear: If campaigns or educational programs intend to change behavior, they should focus on attitudes, social norms and the perceived control people have over a particular behavior, to thus influence the behavior itself. Ajzen (1991) affirms that understanding different aspects of a behavior could be a valuable tool in developing more targeted campaigns, since different behaviors are influenced by different aspects.

TPB was used by Simsekoglu and Lajunen (2008) to investigate seat belt use intention in different travel types. TPB model explained 30% of total variance of seat belt use intention in urban areas and 50% of total variance on rural roads. Attitude and subjective norms showed a positive relationship with intention to use seat belts in both scenarios, suggesting that those who believed that seat belts provided protection and perceived more social pressure to use it, were more likely to do so.

According to the World Health Organization (WHO, 2009), the rate of seat belt use in Brazil is barely 60%, even though the legislation mandates its use. Data on Brazilian federal road crashes have shown that 1.6% of the drivers that died in traffic crashes were not using seat belts. Nonetheless, it should be noted that such information was not heeded in all crash reports, so it is possible that this number could be higher (Instituto de Pesquisa Econômica Aplicada, Ministério do Planejamento, Orçamento e Gestão -IPEA/MPOG, Departamento Nacional de Trânsito -DENATRAN e Associação Nacional de Transportes Públicos - ANTP, 2006).

Although it is important to investigate seat belt use, only few studies conducted in Latin America are available on electronic databases. For this reason, the importance of the present study is justified since its purpose is to examine self-reported seat belt use and variables that could influence seat belt use in different scenarios (as drivers, front and rear seat passengers and taxi passengers). The objectives of this study were to: (a) explore self-reported seat belt use and group differences in different scenarios in a Brazilian sample and (b) analyze the influence of TPB variables to explain self-reported seat belt use.

Method

Participants

A group of 120 undergraduate students in Curitiba, Brazil, answered the questionnaire. 74% were males and 26% were females, with an age range of 18 to 51 years (M=22.12 years, SD=4.33). 72.4% had driver's licenses and answered the questionnaire for all the scenarios. The participants without a driving license answered the questionnaire from the second scenario (as front and rear seat passengers, and taxi passengers).

Instruments

A pilot study was conducted to identify the behavioral beliefs and referent modals to originate the final TPB questionnaire, as suggested by Ajzen (1991).

The final questionnaire had 60 items measuring TPB variables and 4 items about self-reported seat belt use frequency. Examples of the items used and reliability of the scales are displayed in Table 1.

All respondents answered items about seat belt use: (a) as drivers (only those who had driver's licenses answered this part of the questionnaire); (b) as front seat passengers; (c) as rear seat passengers, and (d) as taxi passengers. Each part had items with measures of TPB, that is, attitude, subjective norms, perceived behavioral control and intention, to be answered in a seven point scale ranging from 1=*bad/ unsafe/ disagree* to 7=*good/ safe/ agree*.

Table 1
Example of Items Used in this Study

Variable	Items in each scenario	α	Item example	Scoring (from/to)
Attitude	9	a=0.77 b=0.82 c=0.91 d=0.86	Using a seat belts as driver/ front seat passenger/ rear seat passenger/ taxi passenger is something	1=Bad/ unsafe/ disagree 7=Good/ safe/ agree
Subjective norms	4	a=0.68 b=0.76 c=0.86 d=0.81	People who are important to me approve the using seat belts when I travel as driver/ front seat passenger/ rear seat passenger/ taxi passenger	1=unlikely 7=likely
Perceived behavioral control	1	*	I have the power to decide whether I want to use seat belts as driver/ front seat passenger/ rear seat passenger/ taxi passenger	1=Disagree 7=Agree
Intention	1	*	I intend to use seat belts next time I travel as driver/ front seat passenger/ rear seat passenger/ taxi passenger	1=Disagree 7=Agree
Self-reported use	1	*	How often do you use seat belts as driver/ front seat passenger/ rear seat passenger/ taxi passenger	1=Never 6=Always

Note: a= as driver; b= as front seat passenger; c= as rear seat passenger; d= as taxi passenger. * Not possible to calculate Conbachs' alpha because it had only one item, in each scenario.

Attitude, that is, individuals' evaluations in relation to a behavior, was measured by calculating the mean of nine items from each scenario. Likewise, the subjective norms were measured through the mean of four items. Subjective norms are the individuals' perceptions regarding the pressure of social norms or what other important persons for the individual think about the action to be performed. Perceived behavior control and intention were measured only through one item each. Perceived behavior control is about how the individual thinks that he or she is able to control the target behavior. Finally, intention refers to an individual availability to perform the behavior.

Finally, items about seat belt use frequency were presented in different scenarios (as drivers, as front and rear seat passengers and as taxi passengers). The socio-demographics collected were gender, age, and possession of a driving license.

Procedures

The data were collected in the classroom, during class hour, at a university campus in Curitiba, Brazil. After the professor's approval, the researchers introduced themselves and asked for the students' voluntary participation. The research topic and the ethical procedures were explained. Since it was a self-reported questionnaire, anonymity and confidentiality were ensured to avoid social desirability bias. If the participant agreed to take part in the study, they signed the terms of consent and answered the questionnaire. Answering time for the questionnaire was about 20 minutes.

Statistical Analyses

To test whether there was a mean difference between genders in self-reported seat belt use, independent samples *t*-tests were conducted. The relationship between age and self-reported seat belt use was tested using Pearson's correlation coefficient. Missing cases were excluded pairwise from the analyses. A one-way repeated measure ANOVA was conducted to compare means of the TBP variables for each scenario (as driver, as front passenger, as rear passenger, and as taxi passenger). Pearson's correlation was used to calculate the correlation between the TPB variables and self-reported seat belt use for each scenario. Linear regression analysis was used to explore the contribution of TPB and demographic variables to explain self-reported seat belt use for each scenario. The self-reported mean scores were regressed in two blocks. The first block contained demographic variables (gender, age and driver's license possession) and the second block contained the TBP variables (attitudes, subjective norms, perceived behavioral control and intention) for each scenario.

Results

Seat belt use frequency was more frequent in taxi passengers (M=5.74) and drivers (M=5.66). It was less frequent in front seat passengers (M=3.82) and rear seat passengers (M=4.46).

No significant mean difference was found between males and females in self-reported seat belt use frequency among drivers ($t(81)$=-0.94, p=.34), front seat passengers ($t(114)$=-0.43, p=.66) and taxi passengers ($t(81)$=-0.94, p=.34). However, a significant mean difference was found in rear seat passengers ($t(108)$=2.89, p=.01), where females reported using it less frequently (M=3.60) than males (M=4.82).

Age was not related to seat belt use frequency, whether in front seat passengers (r=0.10, p=.28), drivers (r=0.05, p=.60), taxi passengers (r=0.04, p=.69) or rear seat passengers (r=0.02, p=.80).

Means and standard deviations of all TPB variables are presented in Table 2. There was a significant mean difference in attitude and subjective norms within the scenarios (Wilks' Lambda=0.65, p<.001 and Wilks' Lambda=0.52, p<.001, respectively). Attitude towards seat belts and subjective norms means were higher for

drivers and front seat passengers, compared to other passengers. Perceived behavioral control had a significant mean difference within the scenarios (Wilks' Lambda=0.80, p=.001) where the mean for rear seat and taxi passengers was higher than for driver and front seat passengers. Finally, there was a significant mean difference in intention within the scenarios (Wilks' Lambda=0.55, p<.001). Intention to use seat belts was higher among drivers and front seat passengers and lower among rear seat passengers.

Pearson's correlation was calculated for each scenario (Table 3). In drivers, self-reported seat belt use was significantly correlated only with intention (r=0.26). Intention was significantly correlated with attitude (r=0.45) and subjective norms (r=0.30). Among front seat passengers, attitude and intention were significantly correlated with self-reported seat belt use (r=0.34 and r=0.33, respectively). Intention was significantly correlated with all TBP variables, where the highest correlation was with attitude (r=0.58). Among rear seat passengers, self-reported seat belt use was significantly correlated with perceived behavioral control (r=-0.24) and intention (r=0.21). Intention was highly correlated with attitude (r=0.78) and subjective norm (r=0.65). Attitude was highly correlated with subjective norm (r=0.64). Among taxi passengers self-reported seat belt use was not significantly correlated with any TPB variables. Intention was significantly correlated with subjective norms (r=0.61) and attitude (r=0.56). Attitude was significantly correlated with subjective norms (r=0.57).

Results of the regression analysis can be seen in Table 4. Among drivers, the variables in the model were able to explain 10% of the total variance of self-reported seat belt use; however, the model was not statistically significant ($F(2, 73)$=1.32, p=.25). The only variable that contributed significantly to predict seat belt use by drivers was intention (β=0.26).

Among front seat passengers, the model was statistically significant and explained 23% of the total variance of self-reported seat belt use ($F(7, 105)$=0.49, p=.001). Attitude (β=0.38), subjective norms (β=-0.31) and intention (β=0.26) were the variables that contributed significantly in the model.

Among rear seat passengers, 20% of the total variance was explained ($F(7, 99)$=3.57, p<.01). Gender (β=-0.29) and perceived behavioral control (β=0.08) were the only variables that contributed significantly to explain self-reported use.

Table 2
Means and Standard Deviations of TPB Variables for all Scenarios

	Driver (n=84)	Front seat passenger (n=120)	Rear seat passenger (n=120)	Taxi passenger (n=118)
Attitude	6.52[a] (0.55)	6.48[a] (0.60)	5.82[b] (1.13)	6.24[c] (0.80)
Subjective norms	6.52[a] (0.62)	6.40[a] (0.60)	4.99[b] (1.59)	5.72[c] (1.32)
Perceived behavioral control	4.34[a] (2.48)	4.30[a] (2.51)	5.15[b] (2.16)	4.88[b] (2.35)
Intention	6.88[a] (0.47)	6.72[a] (0.73)	5.04[b] (1.99)	6.04[c] (1.58)

Note: Means with different superscripts are significantly different at the p<.05 based on Bonferroni post hoc multiple comparisons. Standard deviations are presented under the means, in parenthesis.

Table 3
Correlation among TPB Variables and Self-reported Seat belts Use

Variable	1	2	3	4
As driver				
1. Attitude				
2. Subjective norms	0.35**			
3. Perceived behavioral control	-0.14	-0.03		
4. Intention	0.45**	0.30**	-0.04	
5. Self-reported use	0.09	0.11	0.13	0.26*
As front seat passenger				
1. Attitude				
2. Subjective norms	0.55**			
3. Perceived behavioral control	-0.06	-0.09		
4. Intention	0.58**	0.47**	-0.19*	
5. Self-reported use	0.34**	0.01	-0.11	0.33**
As rear seat passenger				
1. Attitude				
2. Subjective norms	0.64**			
3. Perceived behavioral control	-0.12	-0.06		
4. Intention	0.78**	0.65**	-0.10	
5. Self-reported use	0.16	0.11	-0.24*	0.21*
As taxi passenger				
1. Attitude				
2. Subjective norms	0.57*			
3. Perceived behavioral control	-0.18*	-0.05		
4. Intention	0.56**	0.61**	-0.04	
5. Self-reported use	0.13	-0.09	-0.20	0.00

*Note: * $p<.05$. ** $p<.01$*

Finally, among taxi passengers, variables explained 11% of the total variance; however, the model was not statistically significant ($F(7, 71)=1.33$, $p=.024$). None of the variables contributed to predicting self-reported scores by taxi passengers.

Table 4
Regression Analysis for Predicting Seat belts Use

		R^2	ΔR^2	β
As driver				
Block 1	Gender			0.09
	Age	0.01	0.01	0.04
Block 2	Attitude			-0.03
	Subjective norms			0.03
	Perceived behavioral control			0.14
	Intention	0.09	0.08	0.26*
As front seat passenger				
Block 1	Gender			0.03
	Age			0.09
	Driver's license	0.01	0.01	-0.02
Block 2	Attitude			0.38**
	Subjective norms			-0.31**
	Perceived behavioral control			-0.08
	Intention	0.23	0.21	0.26*
As rear seat passenger				
Block 1	Gender			-0.29**
	Age			0.04
	Driver's license	0.08	0.08	0.01
Block 2	Attitude			0.07
	Subjective norms			-0.01
	Perceived behavioral control			0.08*
	Intention	0.20	0.11	0.17
As taxi passenger				
Block 1	Gender			0.09
	Age			0.04
	Driver's license	0.01	0.01	0.03
Block 2	Attitude			0.24
	Subjective norms			-0.28
	Perceived behavioral control			-0.21
	Intention	0.11	0.10	0.07

Note: * $p<.05$; ** $p<.001$.

Discussion

This study sought to investigate seat belt use among Brazilian students and the contributions of TPB variables to explain its use in different scenarios (as drivers, front, rear and taxi passengers). Participants reported a high attitude towards seat belt use, indicating a positive evaluation of its use. Attitude towards seat belt use was higher among drivers and front seat passengers, indicating the necessity to increase awareness among rear seat

and taxi passengers about the benefits of seat belts. Subjective norms were higher among drivers and front seat passengers, in other words, they were more likely to believe other people would think they should use seat belts. This is probably because their use is more visible in those seats. It is worth mentioning that subjective norms were less frequent among rear seat passengers. Perceived behavioral control was not high as the other variables. This could be explained by the fact that people already take into account the control they have over the target behavior. Intention to use seat belts was high in all scenarios, but lower among rear seat passengers. Traffic campaigns need to focus on seat belt use among passengers, pointing out the positive effects of its use and exerting social pressure to increase intention to its use, especially among rear seat passengers. The results point out the importance of exploring the determinants of this behavior among different car occupants, since it varied within the scenarios.

The models with TPB variables were able to explain between 10 and 23% of the total variance of self-reported seat belt use, where the attitude and intention variables were the main contributors to explaining the variance in seat belt use. TBP variables did not contribute to explaining seat belt use among taxi passengers. In Brazil, it is quite common for taxis not to have seat belts in the rear seats. Hence, we can hypothesize that, in this scenario, use of seat belts depends on their availability rather than on a positive attitude and intention to use them.

According to TPB, intention is determined by attitudes, subjective norms, and perceived behavioral control. The relationship between TBP variables and intention to use seat belts had been previously demonstrated by Simsekoglu and Lajunen (2008). In this study, attitude and intention were highly correlated in all the scenarios (from r=0.45 to r=0.78). Intention was significantly correlated with self-reported use by drivers, front, and rear seat passengers (from r=0.21 to r=0.33).

The results showed that intention was a significant variable to explain seat belt use, demonstrating its applicability in interventions. Using attitudes and subjective norms to increase intention would consequently influence seat belt use rates. Campaigns for seat belt use should reinforce positive attitudes to seat belts, focusing on the benefits of seat belts use. Since subjective norms were highly correlated with intention, campaigns should emphasize opinions to stimulate social disapproval of non-use of seat belts.

No gender differences were found in self-reported seat belts use by drivers, front seat passengers, and taxi passengers. The same results were found in a Brazilian study among college students by Labiak et al. (2008), suggesting that use of seat belts is not influenced by gender. Among rear seat passengers, women reported using seat belts less frequently than men. This could be due to a smaller number of participants in the female group compared to the male group.

Seat belt use among rear seat passengers is important because it not only reduces the possibility and severity of injuries for themselves, but also for the driver and the front seat passenger (FIA Foundation, 2009). Hence, traffic campaigns and education should emphasize its use by rear seat passengers as well.

No difference between seat belt use and age was found, probably due to the homogeneity of the sample. Furthers studies could explore the contribution of other variables such as habits and the influence of age and gender on seat belt use. Other studies aimed at providing a deeper understanding of seat belt use could employ variables such as perceived risk of not using seat belts or differences between self-reported and actual seat belt use.

This study presents some limitations that need to be taken into account. The sample size and gender distribution was not representative of the Brazilian population and, therefore, generalizations should be made carefully. Another limitation arises from the use of self-reports.

Although anonymity was ensured, response bias could have influenced the results. However, since research about social desirability and its influence on self-reported traffic behaviors suggests that people do not see traffic offences as socially undesirable (Sullman & Taylor, 2010), we assume that the participants in this study were quite honest in their responses. Self-reported rates of seat belt use in this research project were not ideal; in other words, people reported always using seat belts, which is another indicator that response bias, if present, was very small.

As the results showed, unlike variables contribute to explaining seat belt use among different car occupants. It is necessary to research intention and self-reported use of seat belts among different car occupants in order to provide data that helps outline more targeted interventions to increase its use (FIA Foundation, 2009). Along with campaigns that point out the positive aspects of seat belt use and increase the social pressure to do so, appropriate legislation and law enforcement are important steps to increase rate of seat belt use to significant levels (Åberg, 1998; Elvik & Christensen, 2004; FIA Foundation, 2009).

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