The Reluctance of Taxi Drivers to Use Seat Belts. Observed and Self-Reported Behavior in Argentina

La reticencia al uso del cinturón de seguridad de los conductores de taxi. Conductas observadas y auto-informadas en Argentina

Relutância em usar cinto de segurança em taxistas. Comportamentos observados e autorrelatados na Argentina

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Abstract

Although taxi drivers are more exposed to traffic crashes, they usually exhibit riskier behaviors and more negative attitudes toward road safety. For example, previous research suggests that they are particularly reluctant to wear seat belts. The research aimed (a) to estimate the prevalence of seat belt use among taxi drivers compared to other professional and non-professional drivers (Study 1, $n = 3.810$) and (b) to explore attitudes toward seat belt use in taxi drivers using the Theory of Planned Behavior (TPB) (Study 2, $n = 100$). Study 1 showed lower seat belt use among taxi drivers (vs. other professional and non-professional drivers). Study 2 showed that self-reported use tends to be higher than the estimated observed use and that negative experiential attitudes appear to be essential for understanding the reluctance of taxi drivers to use seat belts. Practical implications and future lines of research are discussed.

Keywords: Taxi drivers; seat belt use; observed behavior; attitudes.

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Resumen

Aunque los taxistas están más expuestos a los siniestros viales, suelen mostrar comportamientos más arriesgados y actitudes más negativas hacia la seguridad vial. Por ejemplo, investigaciones previas sugieren que son especialmente reacios a usar el cinturón de seguridad. En tal sentido, los objetivos de la presente investigación fueron (a) estimar la prevalencia del uso del cinturón de seguridad entre los taxistas en comparación con otros conductores profesionales y no profesionales (Estudio 1, n = 3.810) y (b) explorar las actitudes hacia el uso del cinturón de seguridad en los taxistas utilizando la Teoría del Comportamiento Planificado (TPB) (Estudio 2, n = 100). El estudio 1 mostró un menor uso del cinturón de seguridad entre los taxistas (frente a otros conductores profesionales y no profesionales). El estudio 2 demostró que el uso autoinformado tiende a ser mayor que el uso observado estimado, y que las actitudes negativas por la experiencia parecen ser esenciales para entender la reticencia de los taxistas a utilizar el cinturón de seguridad. Se discuten las implicaciones prácticas y las futuras líneas de investigación.

Palabras clave: taxistas; uso del cinturón de seguridad; comportamiento observado; actitudes.

Resumo

Embora os taxistas estejam mais expostos a acidentes rodoviários, tendem a exibir comportamentos mais arriscados e atitudes mais negativas em relação à segurança rodoviária. Por exemplo, investigações anteriores sugerem que estão particularmente relutantes em usar o cinto de segurança. Os objectivos do presente estudo foram: (a) estimar a prevalência do uso do cinto de segurança entre taxistas em comparação com outros taxistas profissionais e não profissionais (Estudo 1, n = 3.810), e (b) explorar atitudes em relação ao uso do cinto de segurança entre taxistas utilizando a Teoria do Comportamento Planeado (TPB) (Estudo 2, n = 100). O estudo 1 mostrou um menor uso do cinto de segurança entre os taxistas (em comparação com outros motoristas profissionais e não profissionais). O estudo 2 mostrou que o uso auto-relatado tende a ser superior ao uso observado estimado, e que as atitudes experimentais negativas parecem ser centrais para compreender a relutância dos taxistas em usar cintos de segurança. São discutidas implicações práticas e linhas futuras de investigação.

Palavras-chave: taxistas; uso do cinto de segurança; comportamento observado; atitudes.

Road traffic injuries represent the principal cause of morbidity and mortality worldwide. It is believed that more than 90 % of them occur in low- and middle-income countries (World Health Organization [WHO], 2018). The adoption of safe versus risky behaviors on the part of road users plays a central role in determining the possibility of an accident and its severity and consequences. One self-protection behavior, widely recognized as effective, is using a seat belt. It is a passive safety device of vital importance for the occupants of motorized vehicles. There is sufficient data on its ability to safeguard the health of drivers and passengers (e. g., Kuo et al., 2015). According to the WHO (2018), seat belts reduce the risk of death by 45-50 % for front-seat passengers and by 25 % for backseat occupants. Additionally, they are linked to a reduced risk of injury to the head, chest, and extremities and a decreased rate of hospitalization (Bendak, 2005; Sangowawa et al., 2010; Strine et al., 2010). Some studies suggest that seat belts maintain effectiveness across all traffic accidents (Larsen, 2004).

Despite the seat belts' importance as a protective measure, it is documented that broad population sectors still do not use them (Agencia Nacional de Seguridad Vial [ANSV], 2018; WHO, 2018). As will be further detailed, some reasons for this behavior are related to traffic regulations, the environment, drivers' beliefs, and types of drivers —i. e., professional, non-professional— (e. g., Klair & Arfan, 2014; Mahfoud et al., 2015; Nazif-Munoz & Nikolic, 2018; Weiss et al., 2006). Regarding this, professional drivers —taxi drivers in particular— are especially reluctant to use seat

belts (e. g., Afukaar et al., 2010; Fernandez et al., 2005; Iribhogbe & Osime, 2008; Ojo & Agyemang, 2019; Passmore & Ozzane-Smith, 2006; Routley et al., 2009). When professional and non-professional drivers were compared, it was observed that seat belt use was lower among the former (e. g., Afukaar et al., 2010; ANSV, 2018; Popoola et al., 2013). This situation is worrisome given that professional drivers are exposed to more risks since they drive more hours and do so as part of their daily work routines (La et al., 2013; Poó et al., 2018; Taylor & Dorn, 2006).

One strategy to increase seat belt use is to mandate it legally mandate. Presently, 105 countries, representing 67 % of the world's population, have laws requiring seat belt use. The evidence indicates these laws effectively promote seat belt use (e. g., Goetze & Islam, 2015; Nazif-Munoz & Nikolic, 2018). However, in many countries where this legal requirement exists, seat belt-use levels continue to be low. This is particularly so in economically less developed nations (see WHO, 2018). For example, in Argentina, despite being mandated by law for all occupants, seat belt use is not widespread (ANSV, 2018).

An important consideration regarding seat belt-use regulations is that, in some countries, it is mandated for private drivers but not taxi drivers. In a study conducted in 30 countries, Weiss et al. (2006) indicated that in 14 of them, taxi drivers were exempt from seat belt-use regulations. Notably, Weiss et al. (2006) did not include the U.S.A. and Australia in their study, two countries where some states also have seat belt use exemptions for taxi drivers when they published their study (Fernandez et al., 2005; Routley et al., 2009). It is important to note, nowadays, some regulations that Weiss et al. (2006) included in their paper continue in place (e. g., DFT, 2019; DGT, 2022). Additionally, it is essential to point out that when they are not exempt, taxi drivers tend to employ strategies to simulate seat belt use —belt tampering— (Passmore & Ozanne-Smith, 2006; Routley et al., 2009).

Further, environmental and circumstantial factors have also been associated with seat belt use. For instance, seat belt use levels are lower in areas peripheral to a city (Afukaar et al., 2010), in urban versus intercity roadways (Klair & Arfan, 2014), on shorter trips (Huang et al., 2011), when traveling at slower speeds (Huang et al., 2011; Klair & Arfan, 2014; Routley et al., 2009), under certain climate conditions (hot and humid) (Routley et al., 2009), and at certain times of the day (early morning and late afternoon) (Mahfoud et al., 2015). It must be clarified that although these results show that context and circumstances affect user behavior, how these factors play a role could vary by geographical location and culture.

Seat belt use facilitators and perceived barriers were also examined in the previous literature. Facilitators include habitual use (force of habit), perceived safety benefits, desire to avoid fines, driving long distances, and driving at high speeds (Huang et al., 2011; Routley et al., 2009). Conversely, use barriers are mainly related to feelings of discomfort (Huang et al., 2011; Klair & Arfan, 2014; Routley et al., 2009; Şimşekoğlu & Lajunen, 2008), an unawareness of regulations, forgetfulness (Klair & Arfan, 2014), and, especially among taxi drivers, hampering the ability to flee in case of assault (Routley et al., 2009).

An important clue to understanding the behaviors and beliefs associated with seat belt use can be found in the Theory of Planned Behavior —TPB— (Fishbein & Ajzen, 2010). According to this model, behavioral intention (i. e., readiness to perform a behavior) and perceived behavioral control (i. e., perception of internal and external factors capable of providing control over the behavior) are the leading predictors of behavior (for example, seat belt use). Intention depends on three factors: attitudes (i. e., positive or negative evaluation toward the behavior), subjective norm (i. e., perceived social pressure to carry out the behavior), and perceived behavioral control. It is determinant to point out that there are two principal attitudes:

instrumental and experiential. The former refers to perceived negative and positive consequences associated with the object; the latter to perceived experiences associated with the object (Fishbein & Ajzen, 2010).

Several studies demonstrated the ability of the TPB to explain seat belt use intention and behavior (Ali et al., 2011; Brijs et al., 2011; Ledesma et al., 2018; Okamura et al., 2012; Simsekoglu & Lajunen, 2008; Tavafian et al., 2011; Torquato et al., 2012). This behavior seems to depend directly on intention (e. g., Brijs et al., 2011) and indirectly on attitudes —through their effect on intention— (e. g., Okamura et al., 2012). The other components of the TPB have less consistent results. Some studies found that perceived behavioral control is associated with intention (Ali et al., 2011; Brijs et al., 2011; Ledesma et al., 2018; Tavafian et al., 2011), while others either did not (Simsekoglu & Lajunen, 2008) or obtained results that contradict that hypothesis (Okamura et al., 2012). In addition, some studies found a significant relationship between social pressure and intention (e. g., Brijs et al., 2011; Tavafian et al., 2011), while others did not find significant effects (e. g., Ledesma et al., 2018). In short, attitudes and intention seem to be influential factors in seat belt use behavior, while the influence of normative beliefs and perceived control are unclear.

Justification and Objectives

Among transportation workers, taxi drivers have one of the most dangerous and demanding jobs (Poó et al., 2018). They have long workdays and high exposure to risky situations (e. g., La et al., 2013; Shi et al., 2014). Consequently, seat belt use is particularly important in their case. One shortcoming of the prior literature is that it focuses primarily on non-professional drivers (e. g., Ali et al., 2011; Brijs et al., 2011; Ledesma et al., 2018; Tavafian et al., 2011). Therefore, less is known about seat belt use among taxi drivers in terms of the frequency of use and contextual and psychological factors.

This study's main objective was to provide data about taxi drivers' seat belt use compared to that of other professional and non-professional drivers. Two studies were developed in an Argentine setting (the city of Mar del Plata). The first study was observational and compared the frequency of use among taxi drivers, other professional drivers, and non-professional drivers. The second study analyzed the self-reported frequency of seat belt use under different environmental conditions and the beliefs about seat belt use among taxi drivers. This second study sought to shed light on the reasons why taxi drivers are reluctant to use seat belts. For this purpose, an approach based on the TPB was employed.

Study 1. Seat Belt Use Among Taxi Drivers: A Naturalistic Observation

Objective

The objectives of this study were (a) to compare observed seat belt use among taxi drivers, other groups of professional drivers, and non-professional drivers, (b) to identify factors associated with seat belt use —gender, city area (center, greater city area, periphery), and being a taxi or a non-professional driver—. Based on the previous literature, it was hypothesized that seat belt use frequency would be higher among non-professional drivers, women, and in the city center.

Methods

A naturalistic observational study was carried out in Mar del Plata (Argentina), a coastal city on the Atlantic shore. The city has a grid layout. The city map was divided into twenty quadrants delineated

by the intersection of eight main avenues. Three of these avenues run parallel to the sea, and the other five run perpendicular. Observation points were randomly selected within each quadrant. A total of sixty observation points were designated. An observation form was developed to capture information regarding seat belt use. Observers specified the kind of driver, the use or non-use of the seat belt, the gender of the driver, and the type of vehicle driven. The following vehicle classifications were employed: (a) private cars, (b) taxi service, (c) semi-trailer trucks and lorries, (d) light commercial vehicles (primarily technical services), and (e) other services (police, special passenger services, ambulance, etc.). Public buses were not included in the study because seat belt use is not mandatory for this means of transportation in Mar del Plata.

Observations were made during weekdays throughout an hour-long observation session between midday and 2 p.m., one of the city's rush hour periods. The research team and a group of psychology students collected the data during the spring of 2016 and autumn of 2017. All data collectors were trained and underwent pilot testing to become familiar with the observation form. No difficulties were detected. Observers registered every professional driver at each observation point. Observers then recorded the first private vehicle to follow. When seat belt use could not be visually confirmed (e. g., tinted windows), the vehicle was excluded from the sample, and the next one to pass was observed instead. Taxis that passed when another vehicle was being recorded were not included. Professional vehicles that passed by the observer multiple times were registered only once. The number of taxi and non-professional drivers registered was the same at each observation point. The data were processed with the SPSS program. The frequency of seat belt use was calculated for the total sample and by driver type and gender. A multiple logistic regression model was used to analyze predictors of seat belt use.

Results

A total of 3.810 drivers were registered (1.905 professional and 1.905 non-professional). Among professionals, 57.8 % were taxi drivers, 21.8 % were semi-trailer trucks and lorry drivers, 13 % were light commercial vehicle drivers, and 7.4 % were drivers of other services. The overall seat belt use rate was 42 % (95 % CI: 40, 43). Table 1 details the prevalence of seat belt use for professional and non-professional drivers by gender and type of vehicle. Table 2 shows the results of the logistic regression. The logistic regression indicated that taxi drivers use seat belts less often than non-professional drivers but more often than semi-trailer truck and lorry drivers. Differences between taxi drivers and other categories of professional drivers were not statistically significant. A lower seat belt use rate was also observed among males, and seat belt use was slightly lower in the city center compared to the greater city area (Table 2).

Discussion Study 1

According to the results, seat belt use is low in the city despite it being mandatory. This is especially the case among males and professional drivers. Among professionals, seat belt use ranged from 20 % for semi-trailer truck and lorry drivers to 36 % for light commercial vehicle drivers. Taxi drivers, which constituted most of the sample, exhibited a 31.5 % seat belt use rate. These results are in line with studies from countries with economic profiles similar to Argentina (Afukaar et al., 2010; Fernández et al., 2005; Popoola et al., 2013; Routley et al., 2007).

It is worth mentioning that this study did not include observations of passengers, which, according to previous studies, showed even lesser rates of seat belt use (Goetze & Islam, 2015; Jermakian & Weast, 2018; Ogunleye-Adetona et al., 2018). Passenger seat belt use might be related to driver

Table 1
Percentage of seat belt use by driver type and gender

Predictor variables	% of seat belt use by driver type (*n,* 95 % CI)	% of seat belt use by gender (*n*, 95 % CI)	
		Women	Men
Non-professional driver	54.5 (1.905, 52.0-56.4)	64.2 (530, 59.8-68.2)	50.8 (1.374, 48.1-53.4)
Professional driver	29.6 (1.905, 27.5-31.6)	50.6 (87, 40.2-60.8)	28.5 (1.805, 26.4-30.6)
Taxi service	31.5 (1.102, 28.8-34.2)	-	-
Semi-trailer trucks and lorries	20.4 (416, 16.8-25.5)	-	-
Light commercial vehicles	36 (247, 30.3-42.1)	-	-
Other services	30 (140, 23-38)	-	-

Table 2
Factors associated with seat belt use among drivers. Results from the multiple logistic regression analysis

Predictor variables	B	S.E.	Wald	Df	*p*	ExpB
Sex (ref: male)						
Female	.621	.096	41.833	1	<.001	1.861
Vehicle Type (ref: taxi drivers)			177.845	4	<.001	
Non-professional drivers	.827	.083	99.696	1	<.001	2.287
Light commercial vehicles	.192	.149	1.663	1	.197	1.212
Semi-trailer truck and lorries	-.546	.139	15.496	1	<.001	.579
Other Services	-.099	.197	.252	1	.616	.906
Location (ref.: city center)			9.875	2	<.01	
Greater city area	.181	.088	4.280	1	<.05	1.199
Periphery	-.082	.082	.999	1	.318	.992

use. Afukaar et al. (2010) observed that a passenger's seat belt use was higher when the driver used it. This relation deserves more research.

During data collection, no driving enforcement was observed in any observation sessions. It would have been interesting to record these situations in the study to understand their effect on seat belt use. Paradoxically, in the present study, lesser use was observed in the city center, where it is expected to find more police presence. The relationship between seat belt use among taxi drivers and enforcement needs more research.

A strength of this study was that it collected data from randomly selected observation spots disseminated throughout the city. Its main weakness is that observations do not reflect the exact proportion of the fleet of vehicles in the city, either in terms of taxis or private vehicles. Nonetheless,

the results enable us to see that taxi drivers seldom use seat belts and that their use rate is below that of non-professional drivers.

Study 2. Beliefs about seat belt use among taxi drivers

Objective

The objectives of this study were to (a) learn the self-reported frequency of seat belt use among taxi drivers under different conditions (such as trip length and area of operation urban or intercity), (b) analyze the beliefs that taxi drivers have about seat belt use, and (c) analyze the ability of the TPB to predict seat belt use behavior.

Methods

Participants

The study used a causal sample of 100 taxi drivers in Mar del Plata. The total number of existing taxi licenses in the city was taken as the population, estimated at 2.140, to calculate the sample size. A margin of error of 10 % and a confidence level of 95 % were established. The suggested N was 92. It is important to note that it is estimated that approximately one-third of the licenses are currently inactive. Ages ranged from 22 to 71 years (M = 46.80, S.D = 12.40), 94 % were male, 64 % had not completed secondary education, 79 % worked independently, and 20 % were employees. Nearly half of the participants (44.4 %) had 5 to 25 years of driving experience. All participants reported driving almost every day of the week.

Instruments

Seat belt use questionnaire. Participants were asked about their frequency of seat belt use under four conditions: (1) in urban areas, (2) in rural areas, (3) on short trips, and (4) on long-distance trips. Taxi drivers responded using a five-point scale from 1 (never) to 5 (always). Additionally, an overall seat belt-use index was obtained by adding the scores in items 1, 3 and 4, given that they were strongly correlated. The alpha of the sum was .89.

TPB Constructs. The study used instruments developed by Simsekoglu and Lajunen (2008), which were translated and adapted for Argentina by Ledesma et al. (2018). For each component of the model, an overall average score was obtained (sum of the items/number of items). Table 4 lists the items for each scale, the averages (SD) and their reliability. The study excluded two items belonging to the subjective norm scale ("People important to me would approve of my using a seat belt" and "My loved ones wish I would use a seat belt") and one item belonging to the perceived behavioral control scale ("I use a seat belt because I want to"). By excluding these items, the reliability of the instruments was substantially improved. Consequently, the final instrument contained 27 items.

Procedures and data analysis

Participants were contacted at various taxi stands throughout the city. Before administering the protocol, potential participants were told their responses would be anonymous; their informed consent was requested verbally. It took participants approximately 10 minutes to respond to the questionnaire. The interviewer was present during the application of the instruments. Thirty individuals refused to participate. The data were processed with the SPSS and AMOS software. Descriptive analyses were undertaken for the frequency of seat belt use and all the TPB items. No missing data were observed. Correlations between seat belt use frequency and beliefs associated with seat belts were calculated using Goodman and Kruskal's Gamma coefficient. Correlation analyses between the overall seat belt use index and the components of the TPB

were also conducted. Lastly, a path analysis was done to model the relationships between TPB and seat belt use. Parameters were estimated using the ML (maximum likelihood) method. Regression coefficients were obtained. The following fit indices were calculated: Root-mean-square error of approximation (RMSEA), Goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), Comparative Fit Index (CFI), Chi-square test statistic, Incremental fit index (IFI).

Results

Descriptive statistics

Table 3 shows the frequency of seat belt use under varying conditions. Less frequent seat belt use was observed in the city (compared to rural areas) and on short trips compared to long ones.

Table 4 displays the descriptive statistics for the TPB constructs and their respective items. Item means tend to indicate the existence of an overall positive attitude toward seat belt use. Participants have a high level of agreement considering beliefs that represent instrumental aspects of seat belt use, and the variability of their responses is low. On the other hand, there is less agreement and significant variability regarding beliefs on experiential aspects. In the case of perceived behavioral control, it was observed that participants perceived a high degree of control over seat belt use behavior. Additionally, the items that measured the subjective norm suggested low social pressure to use a seat belt. Lastly, the items related to behavioral intention indicated a greater disposition toward seat belt use.

Table 4 also includes the Goodman and Kruskal's Gamma coefficient, a nonparametric measure of the strength and direction of the association between each item and the frequency of seat belt use in different conditions. Negative beliefs about seat belts were related to decreased use (except in rural areas). These beliefs were mainly of the experiential type (bothersome, uncomfortable). Conversely, relations between favorable beliefs and use were not statistically significant. The items that indicated a greater intention to use a seat belt were positively related to use, while beliefs to the contrary (not disposed to use) were negatively related to use. The items that represented greater behavioral control were associated with an increase in use, although only in rural areas. Lastly, only one of the normative beliefs was significantly related to use on short trips.

Table 3
Self-Reported frequency of seat belt use among taxi drivers

Seat belt use	Frequency				
	Always (%)	Almost always (%)	Sometimes (%)	Almost never (%)	Never (%)
In urban areas	59	26	8	2	5
In rural areas	74	6	13	5	2
On short trips	48	27	10	2	13
On long trips	62	28	6	2	2

Table 4
Descriptive statistics of the items that measure the TPB and behavior-item correlations

Scales and items	Gamma coefficient[a]					Mean	SD	Coefficient of variation	Skewness	Kurtosis
	General Use	Urban Use	Rural Use	Use on short trips	Use on long trips					
Attitudes (Alpha = .83)						37.48	11.44		.14	-.42
1. Makes me feel uncomfortable	-.20	-.21	.00	-.20	-.30*	2.46	1.49	0.60	.53	-1.16
2. It bothers me to use it	-.40***	-.46***	-.12	-.39**	-.48***	2.25	1.4	0.62	.76	-.75
3. I find it impractical	-.12	-.12	-.16	-.09	-.17	2.11	1.33	0.63	1,03	-.14
4. Makes me feel safer	.15	.06	.26	.14	.22	3.92	1.22	0.31	-1.07	.21
5. It messes up (dirties/wrinkles) my clothes	.08	.22	-.17	.07	.03	1.88	1.27	0.67	1,37	.66
6. It reduces my mobility	-.11	-.10	-.29*	-.09	-.17	2.15	1.4	0.65	.85	-.73
7. It's not good for anything	.01	.05	-.13	.03	-.07	1.82	1.20	0.65	1.78	2.91
8. It isn't necessary on short trips	-.32**	-.38**	.00	-.33**	-.31*	2.36	1.4	0.59	.61	-1.01
9. It isn't necessary if I drive in places with minimal traffic	-.27**	-.31**	.09	-.28*	-.30*	2.34	1.36	0.58	.70	-0.75
10. Might be mandatory on highways, but not on city streets	-.35**	-.41**	-.01	-.36**	-.33*	2.32	1.42	0.61	.82	-.69
11. Isn't necessary when driving at low speeds	-.22*	-.25*	.00	-.23*	-.23	2.38	1.48	0.62	.70	-1
12. It can lessen the risk of injury in an accident	.09	.04	.16	.09	.10	4.64	.79	0.17	-3.14	11.35
13. Wearing a seat belt can save my life in an accident	.16	.07	.16	.14	.22	4.41	1.13	0.25	-2.16	3.69
14. It is only good for avoiding fines	-.30*	-.39*	-17	-.28*	-.31*	2.40	1.43	0.59	.74	-.84
15. It is an effective safety measure	.13	.02	.08	.15	.16	4.43	.94	0.21	-2.20	5.19

Scales and items	Gamma coefficient[a]					Mean	SD	Coefficient of variation	Skewness	Kurtosis
	General Use	Urban Use	Rural Use	Use on short trips	Use on long trips					
16. In an accident, it can jam and interfere with a rescue effort	-.28*	-.26*	-.05	-.32**	-.32*	3.32	1.22	0.36	-.19	-.88
17. It is useless in high-speed accidents	-.19	-.21	-.11	-.22	-.15	2.91	1.51	0.51	.04	-1.47
Perceived Behaviorial Control (Alfa = 0.61)						8.92	2.38		-.48	-.40
1. I would like to freely choose when to use it	-.16	-.23	.30*	-.22	.00	3.34	1.52	0.45	-.41	-1.3
2. If I wanted to, I would use a seat belt	-.10	-.16	.40**	-.16	.02	3.62	1.35	0.37	-.55	-.91
3. I have control over seat belt use	-.03	-.01	.22	-.08	.08	3.87	1.28	0.33	1	-.04
Subjective norm (Alfa = 0.74)						5.43	2.72		.28	-1.00
1. My friends influence my decision to use a seat belt	.09	.10	-.23	.14	.00	2.32	1.37	0.59	.64	-.89
2. If I were fined for not wearing a seat belt, I wouldn't want my family to know	.22	.23	-.21	.28*	.16	2.16	1.25	0.57	.79	-.46
3. I feel social pressure to use a seat belt	.01	-.02	-.19	.03	.03	2.40	1.44	0.60	.52	-1.19
Intention (Alfa = 0.65)						10.57	3.55		-.23	-.60
1. I am willing to use the seat belt in all situations	.40***	.34*	.15	.46***	.49***	3.74	1.36	0.36	-.82	-.56
2. I would prefer not to use it on short trips	-.32**	-.38**	-.18	-.34**	.25	3.37	1.51	0.44	-.40	-1.34
3. I would prefer not to use it in the city	-.30*	-.32*	-.06	-.34**	-.30*	3.6	1.45	0.40	-.72	-.90
4. I intend to use it the next time I drive	.14	.16	.07	.13	.25	3.94	1.22	0.30	-1.06	.17

Note. a. Association with seat belt use. Goodman and Kruskal's Gamma coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

TPB and Seat Belt Use

Table 5 shows the Pearson correlations between self-reported seat belt use and TPB constructs. The correlations are partially in line with the expectations of the theory. As can be seen, use intention is mainly related to behavior. Intention, in turn, is strongly associated with attitudes and with perceived behavioral control to a lesser extent. The subjective norm is not related to intention, although it shows low associations with attitudes and perceived behavioral control. Lastly, no statistically appreciable associations were observed between attitudes and perceived behavioral control.

A path analysis was conducted to analyze the TPB variables located at the levels suggested by the model (Figure 1). The results of this analysis were partially consistent with the TPB's assumptions. Intention explained the action of using a seat belt (path analysis = .57, $p < .001$), which is explained by the attitudes (path analysis = .63, $p < .001$) and perceived behavioral control (path analysis = -.37, $p < .001$). It is important to point out that the relationship between the latter variable and intention was the inverse of what the TPB hypothesizes. Further, the subjective norm had no significant observable effect on intention (path analysis = .10, $p < .11$). In terms of the covariances, the subjective norm was associated with perceived behavioral control (path analysis = -.20, $p < .01$) and attitudes (path analysis = .26, $p < .01$). The model explains 58 % of the variance in intention and 28 % in behavior. The fit indices are satisfactory ($Chi^2 = 4.19(3)$, $p = .24$, $Chi^2/DF = 1.39$, AIC = 28.19, RMSEA = .06, GFI = .98, AGFI = .91, IFI = .99, CFI = .99).

Table 5
Pearson correlations between TPB components and seat belt use

	Seat belt use	Attitudes	Intention	Perceived behavioral control
Attitudes	.40**	-		
Intention	.52**	.65**	-	
Perceived behavioral control	.15	-.12	-.47**	-
Subjective norm	.08	.26**	.01	-.20*

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

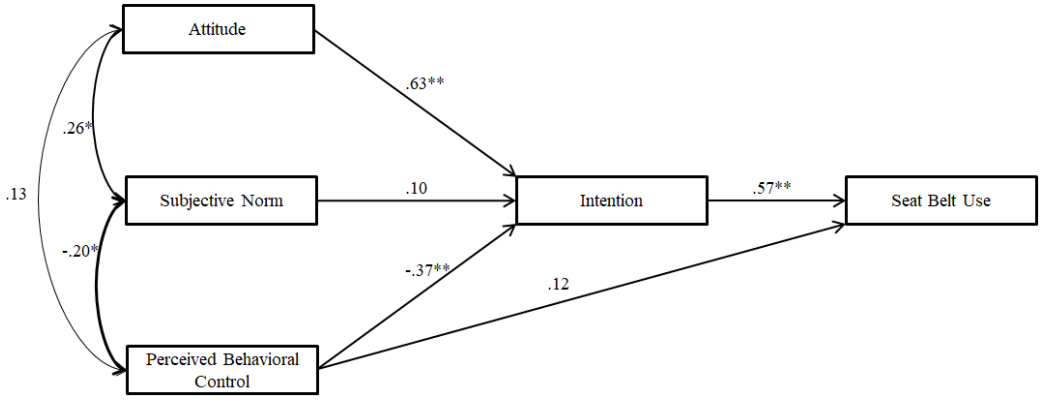

Figure 1. TPB as predictor of seat belt use

General Discussion

The study's first objective was to examine the frequency of self-reported seat belt use under varying conditions. The results show that taxi drivers consider the context when deciding when to use a seat belt, which is consistent with prior studies (e. g., Huang et al., 2011). The elevated levels of use in long trips (vs. short trips) and rural areas (vs. in the city) may derive from differences in the perceived risk of each situation. In any event, the self-reported use was generally low, which confirms the reluctance of taxi drivers to use seat belts (Fernandez et al., 2005; Passmore & Ozzane-Smith, 2006; Routley et al., 2009). Additionally, the use level was higher in the second study compared to the first. This result is in line with previous studies that indicate differences in the frequency of use depending on the type of research technique employed —observational or self-reported— (e. g., Lipovac et al., 2015). These differences could derive from response biases that affect the results of self-reporting instruments.

Taxi drivers showed an overall positive attitude toward seat belt use, especially considering its safety benefits (i. e., instrumental dimension of attitudes). The items that evaluated positive attitudes tended to have greater levels of agreement, but they were not clearly associated with seat belt use. On the other hand, the items that expressed negative attitudes had a greater variability of opinions but were systematically associated with use. The item most closely associated with use was "It bothers me to use it", followed by "It is only good for avoiding fines" and "In an accident, it can interfere with a rescue effort." These results align with prior studies that indicate discomfort and annoyance are the motives most closely associated with non-seat belt use (Huang et al., 2011; Klair & Arfan, 2014; Routley et al., 2009; Şimşekoğlu & Lajunen, 2008). For their part, normative beliefs and perceived control barely showed any relation to behavior. In summary, negative experiential attitudes appear to be essential to understanding low levels of seat belt use.

Regarding the TPB and seat belt use, the results were partially consistent with theoretical expectations. As in previous studies, attitudes explained intention, and intention, in turn, explained behavior (e. g., Ali et al., 2011; Brijs et al., 2011; Ledesma et al., 2018; Okamura et al., 2012; Simsekoglu & Lajunen, 2008; Steptoe et al., 2002; Tavafian et al., 2011; Torquato et al., 2012). However, perceived behavioral control had a negative association with intention. Although a similar result was observed in one prior study (Okamura et al., 2012), most of the previous research found a positive or null association (e. g., Brijs et al., 2011; Simsekoglu & Lajunen, 2008). In the case of the present study, this result can be explained by the fact that perceived behavioral control was evaluated more in its autonomy dimension (or "freedom in the decision to use") than in its self-efficacy dimension ("ability" to use) (Fisbhein & Ajzen, 2010). Therefore, it is logical that those who perceived greater personal freedom in terms of seat belt use were those who indicated a lesser intention to use it. With respect to subjective norms, no appreciable association with intention was found. This is also inconsistent with prior findings (Ali et al., 2011; Ledesma et al., 2018; Okamura et al., 2012; Simsekoglu & Lajunen, 2008; Tavafian et al., 2011). However, it is difficult to compare results across studies because important differences may exist in the definition and content of the measures employed.

Conclusions

The present study contributes to the existing knowledge about taxi drivers' safety, who have received lesser attention than non-professional drivers. In line with previous research, results showed low levels of seat belt use among them (e. g., Ojo & Agyemang, 2019). This situation is worrisome, considering taxi drivers have a high

level of exposure to risky situations on the road (e. g., La et al., 2013). Another important finding was that the self-reported frequency of use was higher than the frequency of use observed in the natural context, which is also in agreement with previous results (e. g., ANSV, 2018; Lipovac et al., 2015; Routley et al., 2009). The overestimation of self-reporting techniques underscores the greater reliability of observational methods for monitoring behaviors such as seat belt use. However, self-report techniques allow an understanding of possible motivating factors for the behaviors under study.

With respect to the TPB, it could be a useful model to provide a general understanding of the beliefs associated with seat belt use among taxi drivers. Nevertheless, a limitation of this approach is that it does not consider the participation of other non-intentional factors that can also guide the conduct. Other studies on non-professional drivers observed that seat belt use depended simultaneously on planned and automatic components —e. g., implicit attitudes— (e. g., Ledesma et al., 2018). Another limitation of the TPB is not taking into account contextual factors, such as organizational culture or working conditions, that could also be related to seat belt use. Previous studies indicated that some working conditions —e. g., working hours, insecurity, interpersonal conflicts with passengers, etc.— increase risky behaviors in taxi drivers (e. g., Havârneanu et al., 2019; Peng et al., 2020; Poó et al., 2018). Therefore, it would be interesting for future studies to analyze TPB in conjunction with contextual and automatic variables.

In practical terms, the results make it clear that work on education and enforcement measures must continue. The future challenge is the development of actions aimed at incentivizing seat belt use. According to the WHO (2018), this requires a combined approach that involves several sectors and disciplines. Education and advertising are determinants to raise awareness and ensure public acceptance of these measures, but enforcement actions are also required to achieve effective changes in behavior (WHO, 2018). In the latter, enforcement of seat belt use in Mar del Plata is lax and not systematic. Moreover, when it is practiced, it is not accompanied by awareness or media campaigns. Awareness and education campaigns need to identify false beliefs to change them. It is also essential to improve working conditions, particularly insecurity against crime which is a reason frequently given for not using the seat belt (Havârneanu et al., 2019; Peng et al., 2020; Poó et al., 2018). With respect to taxi drivers, the need to develop specific interventions is even more evident. Based on the results of this study, there is an evident need to work on changing the negative experiential beliefs associated with seat belt use.

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