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Sex differences in driving under the influence: What can we conclude from accident data and point system?

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ABSTRACT: The Czech Republic regularly ranks among the countries with the highest average alcohol consumption in the world, with men consuming about three times more alcohol than women. This is of particular concern in road safety. Approximately 5% of road accidents caused by motor vehicle drivers in the Czech Republic between 2012 and 2020 happened due to drivers under the influence of alcohol and/or other addictive substances (DUI). However, these accidents accounted for almost 11% of all fatalities registered in these accidents, most of which (95%) were caused by male drivers. This paper aimed to (1) analyze the differences in DUI between men and women, (2) relate data from drivers' penalty point system regarding DUI to data on the accident rate of inebriated drivers in the Czech Republic between 2012 and 2020. It was ascertained that men have a marked preponderance in both the point system (89%) and the accident data (86%) and the point system positively correlates with accident data in both men and women. In addition, the causes of traffic accidents vary according to the sex of the culprit – women crashed most often due to loss of vehicle control, whereas crashes of men occurred as a result of speeding. The statistical findings were complemented by the experience of an expert group conducting rehabilitation programs for drivers with suspended driving license.

KEYWORDS: driving under the influence (DUI); sex; point system; traffic accidents; rehabilitation programs

1. INTRODUCTION

Drink driving is one of the most common contributing factors in fatal traffic accidents. In the European Union, alcohol accounts for approximately one-quarter of all road deaths (European Commission, 2018). The paper aims to analyze the role of sex in traffic accidents caused by motor vehicle drivers under the influence of alcohol and/or other narcotic and psychotropic substances (hereinafter referred to as "DUI") in the Czech Republic. In contrast to previous studies, this paper also aims to find the relationship between accident rate (*i.e.*, a direct safety performance indicator) and data from the drivers' penalty point system in the Czech Republic (*i.e.*, an indirect safety performance indicator).

Alcohol reduces the willingness to obey the rules of the road. It increases both the likelihood of driver error (and therefore the risk of an accident) and the severity of the consequences of a traffic accident (Yadav & Velaga, 2020). It affects several psychomotor functions necessary for driving as it harms sensory (Casares-López et al., 2020), cognitive (Tzambazis & Stough, 2000; Weafer & Fillmore, 2012), and executive functions (Moskowitz & Fiorentino, 2000). It may therefore cause difficulties in perceiving and processing information from the traffic environment or prolonged reaction time (Tzambazis & Stough, 2000; Yadav & Velaga, 2019; Yadav et al., 2020). When combined with other drugs, these effects are even more intense (Christoforou et al., 2011; EMCDDA, 2012).

The influence of alcohol leads to a weakening of inhibitions and an increase in behavioral impulsivity, and thus an increase in the tendency to take risks when driving – *e.g.*, to choose higher driving speeds (Fillmore et al., 2008). The danger for other traffic participants and road safety lies mainly in the lack of insight into these effects (Havlík, 2005). The highest likelihood of drink-driving is among young (and) male drivers (Peck et al., 2008; Shinar, 2017).

Some research reports different alcohol metabolism in men and women (Miller et al., 2009). Women have a naturally lower body water content and amount of alcohol dehydrogenase in the stomach. As a result, women experience higher blood alcohol concentrations (BAC) than men after drinking the same amount of alcohol (*Gender*, n.d.; NIAAA, 1999).

Sex also affects the degree of control over the vehicle driven after alcohol consumption. Yadav et al. (2020) found that the negative effects of alcohol are significantly greater on women than on men: with increasing BAC, average driving speed and acceleration variability increase more in women than in men. However, men still choose higher driving speeds in general – probably due to a generally higher tendency to take risks (Bucsuházy, 2020; Byrnes et al., 1999; Montgomery et al., 2014).

Some previous studies also give evidence that men may be less affected by sanctions. Freeman et al. (2017, 2020) pointed to the lower impact of speeding penalties on men and stated that reduced sensitivity to sanctions may also extend to drink driving. This would reduce the effectiveness of drivers' point systems over time.

In the Czech Republic, alcohol is part of the national culture, with beer being considered the national drink. The country has long been among the ones with the highest alcohol consumption in the world. According to the World Health Organization, the Czech Republic topped the world rankings in 2019 with an average annual consumption of 14.3 liters of pure alcohol per capita (aged 15+). There is, however, a diametrical difference between men and women. While Czech women consumed 6.9 liters of pure alcohol in a year, Czech men consumed 22.0 liters of pure alcohol (WHO, 2021). High alcohol consumption is also reflected in the issue of DUI, despite the legislated zero tolerance of any addictive substances in road traffic in the Czech Republic for all groups of drivers, regardless of years of driving experience (see ETSC, 2021, for BAC drink driving limits across Europe). This limit

has remained unchanged throughout the entire history of the Czech Republic as an independent state.

2. METHODOLOGY

A descriptive design was chosen for this study. First, we conducted a quantitative analysis of secondary data from two sources regarding the DUI. The first one was the driver point system under the administration of the Ministry of Transport, the second one was the accident database under the responsibility of the Directorate of the Traffic Police Service of the Police Presidium of the Czech Republic.

The point system serves as an auxiliary tool to enforce compliance with the rules of the road by motor vehicle drivers by monitoring their offends against these rules. The current Czech penalty point system was introduced on 1 July 2006 and works on the principle of accumulating "penalty points" up to 12. Traffic offenses and crimes related to DUI are penalized by adding 7 points, which is the maximum possible sanction under the point system. The authors of this article have had access to data from the point system since 2012.

The accident database contains records of all traffic accidents investigated by the Police of the Czech Republic. To analyze the relationship between the point system and the accident rate, we filtered the following records from the *Traffic Accidents in the Czech Republic* application (Transport Research Centre, n.d.), whose data come from the police accident database:

- accidents that occurred in the territory of the Czech Republic in the years 2012–2020 (for compatibility with the point system data),
- accidents caused by the driver of a motor vehicle,
- accidents where the driver at fault was under the influence of alcohol and/or other drugs.

The filtered records (N = 35,078) were matched with additional information on the culprit (sex, age, etc.) and the accident (number of persons killed, seriously injured, or slightly injured, cause of the accident, etc.) for further analyses.

Afterward, the statistical findings were confronted with the experience and opinions of five psychologists in the Transport Research Centre conducting group rehabilitation sessions for drivers whose driving license has been withdrawn due to accumulating 12 penalty points. The rehabilitation program was first organized in 2013 and approximately 600 drivers have undergone it so far (voluntarily). These additional qualitative data were collected through an informal semi-structured, one-hour long group interview and used as argumentative support in the discussion of this paper. The expert group is hereinafter referred to as "the Group".

3. DATA ANALYSIS

All calculations were performed in the statistical environment R, version 4.1.0 (R Core Team, 2021).

3.1 Descriptive statistics

Point system: From 2012 to 2020, a total of 207,333 alcohol and other drug-related offenses and crimes were registered, which represents an average of 5.3% of all records in the point system during the period (5.8% for men, 2.9% for women). The exact number of records related to DUI according to the sex of the driver is shown in Table 1.

For the period 2012–2020, the average women-to-men ratio in the DUI records is 10.5%(for other traffic offenses, this ratio ranges from 15% for non-seat belt use to 23% for mobile phone use at the wheel). The minimum share of women was recorded in 2012 (9.0%), the maximum one in 2020 (12.4%). The gradual increase over the years is mainly due to a significant decrease in the number of offenses and crimes committed by men, while the number of offenses and crimes committed by women remained relatively stable. The second contributing factor is the increase in the proportion of female license holders (from 43.4% in 2012 to 45.4% in 2020). The ratio of the number of records to the number of driving license holders varies between 0.43% and 0.73% for men and between 0.07% and 0.10% for women.

Accident database: From 2012 to 2020, a total of 35,078 accidents caused by an inebriated motor vehicle driver were registered, which represents an average of 4.9% of the total number of accidents that happened at this time due to all motor vehicle drivers (inebriated + sober + not tested). The share is, however, considerably higher for men (7.2%) than for women (3.8%). The summary data on the number of accidents caused by inebriated men and women each year are presented in Table 2.

The majority of drink-driving accidents (86.4%) were caused by men. As a result of drink-driving accidents in the period under review (regardless of the culprit's sex), 510 persons lost their lives (within 24 hours after the accident), 1,560 persons suffered a severe injury, and 12,065 persons suffered a slight injury. These consequences represent around 11%, 8%, and 7% of all fatalities, severe injuries, and slight injuries, respectively, that happened in accidents caused by motor vehicle drivers, which is very disproportionate to the above-mentioned fact that only around 5% of accidents caused by motor vehicle drivers happened due to drivers under the influence.

	Year									
Sex of the driver	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
Men	25,647	27,295	27,406	18,299	17,614	16,216	16,965	19,169	16,940	185,551
Women	2,529	2,752	2,958	2,151	2,220	1,985	2,143	2,645	2,399	21,782
Proportion of women	9%	9%	10%	11%	11%	11%	11%	12%	12%	11%

Table 1: Number of alcohol and other drug-related traffic offenses and crimes in the point system in 2012–2020

	Year									
Sex of the culprit	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
Men	3,673	3,478	3,351	3,329	3,202	3,191	3,390	3,378	3,324	30,316
Women	503	501	507	517	557	493	538	557	554	4,727
NA	4	4	5	4	3	5	3	2	5	35
Proportion of women	12%	13%	13%	13%	15%	13%	14%	14%	14%	14%

Table 2: Number of accidents caused by an inebriated motor vehicle driver in 2012–2020

Out of the 510 fatalities, males were responsible for 94.7% of them, which corresponds to the fact that the severity of accidents caused by men was almost triple that of accidents caused by women (15.9 for men *vs.* 5.7 for women). *(Severity is the number of fatalities per 1,000 accidents.)* In the case of accidents where the driver at fault was either sober or was not tested for intoxication, the severity was generally lower and the difference between men and women was smaller (7.9 for men *vs.* 4.2 for women, *i.e.*, the ratio is about double).

In the following text, only accidents due to DUI will be discussed. In most of these accidents, the driver at fault had a blood alcohol concentration exceeding 1.5 *per mille*, with almost no difference between men and women (55% for men, 58% for women). Accidents in which the culprit was under the influence of both alcohol and other drugs were the least frequent (1.3% for men, 0.6% for women) but showed by far the highest severity (63.0 for men *vs.* 35.7 for women, *i.e.*, the ratio is also about double).

Last, we focus on the causes of accidents. Table 3 shows that while improper driving (especially failure to control the vehicle) was the cause of the largest number of accidents, speeding was the most common cause of accidents with serious consequences, as it accounted for 60% of male-caused fatalities and 56% of female-caused fatalities. For sober drivers, these proportions are considerably lower – 35% for men and 32% for women. The table also shows that inebriated women were more likely than men to crash due to improper driving (67% of all female-caused accidents *vs.* 57% of all male-caused accidents), while inebriated men were more likely than women to speed (36% of all male-caused accidents *vs.* 25% of all female-caused accidents).

3.2 Regression analysis

Data above clearly show that most of the drivers at fault for drink-driving accidents are male. The logistic regression result is consistent with this. The model predicted the sex of the culprit based on the type of intoxication, the age category, and the consequences of the accident. (The type of intoxication was reduced to only two groups due to low frequencies.) All assumptions for using this method were met. Despite the low pseudo R^2 (Nagelkerke's $R^2 = 1.5\%$), caused by the marked preponderance of males in the population, the model shows satisfactory performance ($2LL = 27{,}446$, $df = 35{,}032$, $p < .001$). At the decision threshold equal to the relative frequency of males (*i.e.*, 86%), it correctly predicts the sex of the driver at fault in 58.7% of cases (59.9% in males, 51.0% in females). All variables (categorical ones as a whole) are significant at the 5% significance level. Detailed results can be seen in Table 4.

The *OR* column contains odds ratios – regression coefficients adjusted by exponential transformation. Odds ratios greater than 1 indicate an increase in the chance that the driver at fault is a male and *vice versa*, odds ratios less than 1 indicate a decrease in the chance that the driver at fault is a male (*i.e.*, an increase in the chance that the driver at fault is a female). An *OR* equal to 1 means that the odds for both men and women are 1 in 1, *i.e.*, a man is 50% likely to be at fault and a woman is 50% likely to be at fault.

In the case of the *intercept*, there is no odds ratio but simply odds that the driver at fault is a male. (In Table 4, we have

Sex of the culprit	The most severe consequence of an accident	Number of accidents	The main cause of the accident			
			Improper driving	Speeding	Not giving the right of way	Others
Men	Death	423	34.0%	60.0%	4.0%	1.9%
	Severe injury	1,151	32.8%	56.7%	8.6%	1.9%
	Slight injury	7,662	42.2%	48.8%	7.5%	1.5%
	(No injury)	21,080	64.1%	30.0%	5.0%	1.0%
Women	Death	25	44.0%	56.0%	0.0%	0.0%
	Severe injury	122	41.8%	43.4%	13.9%	0.8%
	Slight injury	1,145	50.7%	40.7%	8.2%	0.4%
	(No injury)	3,435	74.1%	19.3%	6.1%	0.6%

Table 3: Main causes of accidents caused by inebriated motor vehicle drivers in 2012–2020

Variable	*OR*	95% CI for *OR*	Wald *Z*	*P*-value	
(Intercept)	6.95 = 87.4%	[4.56, 11.16]	8.52	< 0.001	***
Intoxication of the culprit *(ref.: alcohol only)*					
other drugs or combinations thereof	1.40×	[1.22, 1.61]	4.66	< 0.001	***
Age category of the culprit *(ref.: under 18 years)*					
18–24 years	1.19×	[0.74, 1.84]	0.77	0.441	
25–34 years	0.90×	[0.56, 1.39]	-0.44	0.660	
35–44 years	0.76×	[0.47, 1.17]	-1.18	0.239	
45–54 years	0.64×	[0.40, 0.99]	-1.91	0.057	·
55–64 years	0.84×	[0.52, 1.30]	-0.74	0.458	
65+ years	1.38×	[0.83, 2.19]	1.32	0.188	
Consequences of persons in an accident *(ref.: 0)*					
the number of persons killed	2.20×	[1.55, 3.28]	4.14	< 0.001	***
the number of persons severely injured	1.35×	[1.15, 1.59]	3.62	< 0.001	***
the number of persons slightly injured	1.06×	[1.01, 1.12]	2.47	0.014	*

Note: *OR* = odds ratio, 95% CI for *OR* = 95% confidence interval for the odds ratio. Asterisks denote statistical significance: · $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4: Logistic regression results (outcome variable = sex of the driver at fault, $N = 35{,}043$)

converted it to a probability – 87.4%). If the culprit was under the influence of drugs other than alcohol or a combination of drugs and alcohol, then the odds that he was a male increased 1.40 times (95% CI [1.22, 1.61], $p < .001$), *i.e.*, the probability reached 90.7%. In terms of the consequences of the accident, the more people who suffered fatal/severe/light injuries, the more likely it was a male than a female who was at fault. The largest difference between men and women is found in the case of fatal consequences – with each person killed, the odds that the driver at fault was a man increases 2.20 times (95% CI [1.55, 3.28], $p < .001$). Finally, the age category also plays a significant role (overall $p < .001$). The biggest difference among sexes is found in the age category 45–54 years, or more precisely, women have the highest chance of causing an accident due to DUI in this particular age group (*OR* for men = .64, 95% CI [.40, .99], $p = .06$).

3.3 Relation between drivers' point system and accident rates

The total number of alcohol and other drug-related traffic offenses in the drivers' point system has been declining over the long term (as could be seen in Table 1). We wanted to examine whether the long-term trend in the number of drink-driving accidents is consistent with this. Figure 1 depicts the trends in both variables over the period 2012–2020. Due to the different orders in which the values range (thousands of records in the point system *vs.* ones of serious accidents), we opted for showing the percentage change in values compared to 2012.

For males, a downward trend exists in all the variables shown (average changes: point system -22%, accidents total -9%, accidents with injury -12%, accidents without injury -8%); for females, the changes are more diverse (average changes: point system -5%, accidents total +5%, accidents with injury +14%, accidents without injury +2%). The chart further shows that for both men and women, the number of traffic offenses and crimes covered by the point system and related to DUI significantly dropped in 2015. This made it impossible to correlate the input graph data of point system records and accident rates. Therefore, we proceeded as follows: for each of the years 2012–2020 and for both sexes separately, we calculated the proportion of DUI-related traffic offenses in all traffic offenses in the point system. Subsequently, we correlated this proportion with:

- the proportion of all accidents (regardless of the outcome) caused by an inebriated motor vehicle driver in accidents caused by any motor vehicle driver, for each of the years 2012–2020 and both sexes separately,
- the proportion of accidents involving injuries (fatal/severe/light) and caused by an inebriated motor vehicle driver in accidents involving injuries and caused by any motor vehicle driver, for each of the years 2012–2020 and both sexes separately,
- the proportion of non-injury accidents (*i.e.*, accidents with only material damage) caused by an inebriated motor vehicle driver in non-injury accidents caused by any motor vehicle driver, for each of the years 2012–2020 and both sexes separately.

Table 5 shows the results of the Spearman correlation coefficient tests. The last row of the table carries information on the difference between these coefficients (tested using the Fisher *Z*-transformation; the test statistic is denoted by '*u*').

All correlation coefficients are positive, *i.e.*, data from the point system correspond with all defined subsets of data from the accident database (lowest $r_S = .45$, *n.s.*, which means

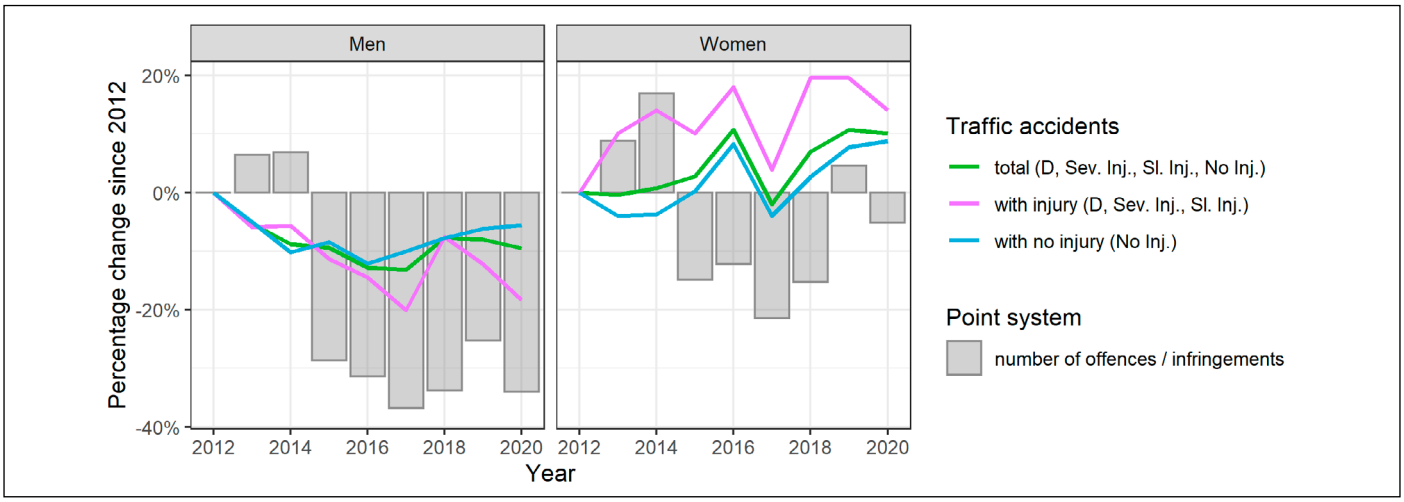

Fig. 1: Trends in the number of DUI-related traffic offenses in the drivers' point system (grey bars) and the number of DUI-related accidents (colored lines) in the past 9 years related to the initial state in 2012

	Point system & total accidents (D, Sev. Inj., Sl. Inj., No Inj.)		Point system & accidents with injury (D, Sev. Inj., Sl. Inj.)		Point system & accidents without injury (No Inj.)	
Group	**Statistics**	***P*-value**	**Statistics**	***P*-value**	**Statistics**	***P*-value**
Men	$r_S = 0.52$		$r_S = 0.62$	·	$r_S = 0.52$	
Women	$r_S = 0.75$	*	$r_S = 0.97$	***	$r_S = 0.45$	
Difference between r_S in men and women [1]	$u = -0.69$		$u = -2.28$	*	$u = 0.15$	

Note: *D* = death, *Sev. Inj.* = severe injury, *Sl. Inj.* = slight injury, *No Inj.* = no injury. Asterisks denote statistical significance: · $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

[1] The *P*-value for the test of the significance of the difference of the correlation coefficients in the subset of men and the subset of women (third row) was derived from Student's *t*-distribution with 14 degrees of freedom ($N_1 + N_2 - 4$).

Table 5: Tests of Spearman correlation coefficient (r_S) and tests of the difference of these coefficients (u, $N = 9$)

that the variables share 20% of the variance). However, it is worth pointing out that the coefficients may be slightly overestimated because any inebriated driver at fault for an accident should also be given penalty points for DUI in the point system. The rate of this 'write in' should be as high as 100%, since policemen should detect the presence of alcohol or other drugs in accidents automatically.

The third row of Table 5 reports that the correlation between point system and injury accidents is significantly stronger for females (r_S = .97) than for males (r_S = .62). Since this is the only significant difference between females and males and the direction of the relationship is positive in all cases, the difference does not require special attention.

4. DISCUSSION

This article aimed to examine the role of sex in driving under the influence (DUI). Previous research findings suggest that DUI globally occurs to a greater extent in men than in women. Both data sources we have worked with – the drivers' point system and the traffic accident database – concur with this: roughly 89% of the drivers penalized for DUI and 86% of the inebriated perpetrators of accidents were males. The proportion of DUI offenses and crimes in the point system as well as the proportion of DUI accidents in all accidents caused by motor vehicle drivers is approximately twice as high for men as for women (see Section 3.1).

Why is there such a preponderance of men? First, although alcohol consumption is accepted as a social norm in the Czech Republic and abstinence is seen as socially undesirable and "suspicious" for both men and women, men still consume more alcohol and addictive substances than women, as evidenced, for example, by WHO data (2021). The use of addictive substances may be less frequent among women than men because of the rarer presence of traits and characteristics associated with this behavior, *e.g.*, aggression, poor behavioral control, sensation seeking, antisocial behavior, *etc.* (Nolen-Hoeksema, 2004), for which there is no evidence that they do not apply to Czech women.

Another argument is the nature of consumption. Men, generally speaking, drink more socially and are more likely to visit pubs than women (Holloway et al., 2009). Then they need some way of getting home and a car is the first-choice means of transport for them, as found by the Group within the driver rehabilitation programs. That is consistent with Duchene (2011) stating that women are more likely to use public transport or walking for equivalent trips. Speaking of the nature of mobility, we should mention that women are more likely to take shorter courses than men. Although they make more journeys per day, they travel fewer kilometers overall (Zámečník et al., 2019). Finally, we take the liberty of mentioning the "traditional", stereotypical practice that when a man and a woman travel together in the same car, the man is more likely to be behind the wheel. All of this could probably result in the higher detection of alcohol among men.

One should also ask why men more than women venture to drive while under the influence. Many studies have found that men (especially at a young age) tend to over-evaluate their driving skills (González-Iglesias et al., 2014; Wohleber & Matthews, 2016, *etc.*). Alcohol usually even boosts this confidence. But even if the men of any age could better maneuver the vehicle or had better mastered the traffic situations, there are also higher-level aspects of driver behavior, such as trip-related goals and context of driving or general goals for life and skills for living (Keskinen, 1996, in Hatakka et al., 2002), in which women might outperform men (Zámečník et al., 2019).

According to the Group's experience, drivers of both sexes are often unaware of how long it takes to metabolize ethanol. Their estimates are up to ten times smaller than is the case. They are guided by a subjective feeling of inebriation/sobriety, not by an objective measurement of BAC. This has been observed especially in younger women. Therefore, we believe that education following the GDE matrix (Hatakka et al., 2002) is an appropriate countermeasure to combat alcohol- or other substance-impaired driving. Another possible reason why Czechs get behind the wheel drunk is simply the notion, frequently encountered within the rehabilitation programs, that "beer is not an alcohol" (the Group).

Accident database: Interesting sex differences were found in the causes of DUI-related accidents. In general, the causes are dominated by improper driving, especially failure to control the vehicle, which accounted for 57% of accidents caused by men and 67% of accidents caused by women. The ten percent variance may be explained by different alcohol metabolism and other biological differences, as discussed, for example, by Miller et al. (2009). These sex-specific factors result in women having higher blood alcohol concentrations than men after drinking the same amount of alcohol. The second most common but most serious cause of accidents under scrutiny was speeding, which accounted for 36% of accidents caused by men and 25% of accidents caused by women. This variance could probably be related to the higher tendency of men to take risks (Bucsuházy, 2020; Byrnes et al., 1999; Montgomery et al., 2014) and thus to choose higher driving speeds. The logistic regression results provide at least partial support for this claim, because the more serious the consequences of an accident, the more likely it is that a male was at fault.

Point system: Important finding of our research is the positive correlation between the drivers' point system and the accident rates ($r_S(7)$: *min.* = .45, *max.* = .97), which can be considered as a validation of the point system. However, there has been a rapid decline in the number of offenses and crimes related to DUI recorded in 2015 compared to 2014 (Fig. 1). This decrease occurred in all regions of the Czech Republic (*min.* = -23%, *max.* = -41%). A look at the data on all types of offenses covered by the point system reveals that no other offenses have experienced such a dramatic decline. The finding was consulted with the Directorate of the Traffic Police Service of the Police Presidium of the Czech Republic and the Ministry of Interior. The additional data provided showed that the number of all types of offenses registered by the traffic police during the period 2012–2020 was decreasing, while the number of offenses registered by the riot police was increasing. Deliberation about the so-called methanol affair and the subsequent prohibition is also 'a blind alley', as it took place two years earlier. *(The methanol affair refers to an event in 2012–2013 when a series of methanol poisonings where persons thought they were consuming ethanol occurred in the Czech Republic.)* The time series of household expenditures produced by the Czech Statistical Office (n.d.) and the time series of alcohol consumption in the country (WHO, 2021) paradoxically show an increase in the monitored indicators. Unless there is an error in the data, the significant drop in Figure 1 remains unexplained.

In terms of police roadside alcohol checks, Meesmann et al. (2015) has stated they may be more likely to target male drivers (as well as younger drivers and those who drive at night). At the same time, the ESRA2 survey held in 2018 and 2019 revealed that male respondents (a) consider it more likely to be checked by the police for using alcohol as a car driver on a typical journey (25.6%) than women do (19.5%), (b) were more likely to have been subjected to a Breathalyzer test at least once in the last year while driving a car on a typical journey (23.5%) than women were (13.0%) (Goldenbeld et al., 2022). There may be a preconception of men as traffic offenders (or women as less-problematic road users in terms of drink-driving) which could also contribute to the higher proportion of men.

Meesmann et al. (2015) also report a lower prevalence of drink-driving in countries where more frequent alcohol checks are carried out. Given this, frequent roadside checks and visible enforcement can therefore be recommended, although men tend to have a rather negative attitude towards them (the Group; González-Iglesias et al., 2012). Another fitting countermeasure is a zero tolerance of alcohol and other drugs while driving, which is, quite surprisingly, accepted (but not respected) even by the traffic offenders attending rehabilitation programs.

Finally, it should be noted that our quantitative data refer to events that have already taken place and we do not have the opportunity to add more information. We, therefore, tried to fill these gaps by interviewing a group of experts. Subsequent more detailed analyses reflecting, for example, age and other socio-demographic characteristics of the guilty drivers will help to define problematic locations where it would be convenient to strengthen police surveillance and identify groups of people who should be targeted by prevention campaigns or invited to attend rehabilitation programs.

5. CONCLUSION

Alcohol consumption is widespread and considered a part of the national culture of the Czech Republic. Between 2012 and 2020, approximately 5% of road accidents involving a motor vehicle were caused by a driver under the influence of alcohol and/or other psychoactive substances (DUI). However, these accidents accounted for almost 11% of all fatalities registered in these accidents. Given this disproportion, DUI is an area with a remarkably high potential to achieve the strategic objectives of the *Czech Road Safety Strategy 2021–2030* (Ministry of Transport, 2020), *i.e.*, to reduce the number of persons killed and seriously injured in 2030 to 50% compared to the 2017–2019 average.

Besides the oft-repeated fact that DUI generally affects men to a greater extent than women, we confirmed the significant correlations between the drivers' point system scores and accident rates in both men and women and surprisingly revealed a sudden drop in the number of DUI-related offenses and crimes recorded in the point system in 2015. The decrease was observed for both males and females and in all regions of the country. Since we cannot explain this finding, we are going to discuss it at a meeting of members of the Government Road Safety Council. At this meeting, we are also going to advocate for maintaining the zero-tolerance policy and continuing rigorous roadside checks for compliance with this measure. Another practical implication of this study is the possible future targeting of rehabilitation programs, which will be mandatory for problematic drivers from 2023.

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