

# Evaluation results of the medical and psychological assessment (MPA) in Germany

## New Relapse rate of drink-drivers after medical and psychological assessment of fitness to drive (MPA)

Horst Ziegler

### Summary

The recidivism rates of first time and repeat drink driving offenders in Germany who had to submit to a medical-psychological assessment (MPA) and in part attend a driver improvement course (DI) were observed for a probation period of 3 years. The observed cases (MPA groups) were recruited from the archives of the MPA-organizations TÜV and DEKRA in proportion to the number of MPA drunk drivers who were assessed in 2006 within each organization. The recidivism data were gained from the Central Index for Traffic Offenses (VZR) which is operated by the Federal Motor Transport Authority (KBA).

The recidivism rates of the MPA groups were compared with the rates of a control-group which consisted of a group of drunk drivers with a minor DUI-offence (regulatory offence group) and who according to German licensing regulations did not have to undergo an assessment or any other kind of intervention.

The core findings of the current study show that the probation rates are very high and differ neither between the MPA groups nor in comparison to the OWI group. The legal probation rates were found at 91,8% for the OWI group and between 91,7% and 93,5% for the MPA groups (i.e. single vs. repeated offence and positive assessment vs. driver improvement course). In comparison to the findings of earlier evaluation studies (ALKOEVA and EVAGUT) the results of the current study show a further increase in the percentage of drivers without a relapse after having passed the MPA.

### 1. Introduction

In 2010 about 100,000 medical and psychological assessments (MPA, in Germany called MPU) on fitness to drive were conducted in Germany. The important reasons giving rise to the conducted assessments were as follows: 29% for those drivers who had come to the attention of the authorities for the first time as a consequence of alcohol-related conduct, and 17% were recidivist drivers. Taken together, they accounted for 46% of all those assessed in 2010. In addition to this, the most important reasons for assessments being conducted were as follows: drivers committing drugs or medication related offences accounted for 20% and non-alcohol-related traffic-offences accounted for 15% and there 8% accounted for by combinations of alcohol-related offences and traffic or criminal offences (Blutalkohol 2011, Vol. 48, Nr. 5, S. 279-281).

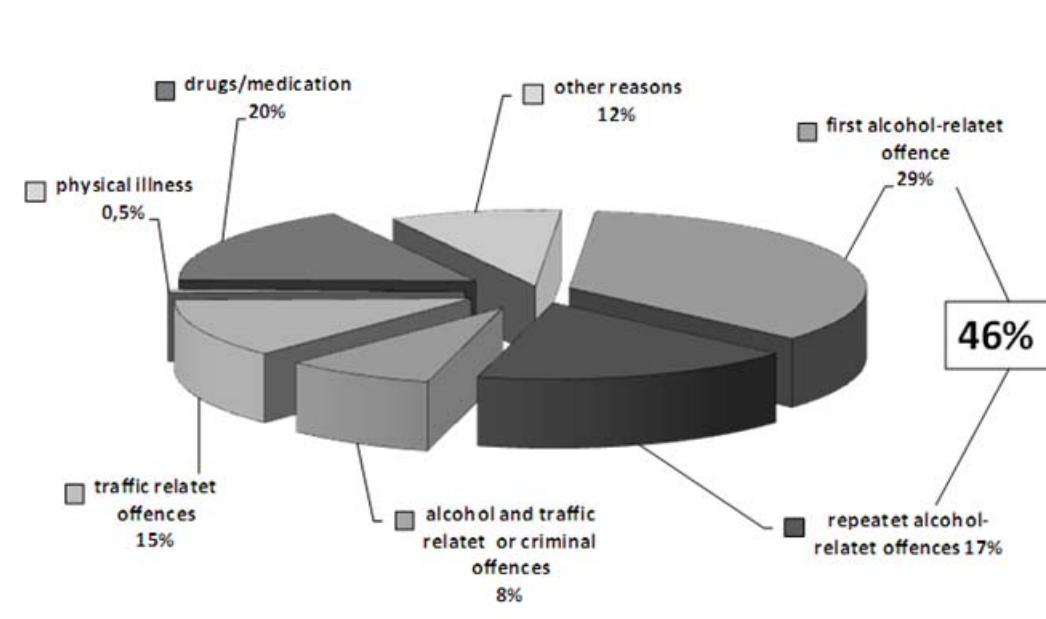


Figure 1: Distribution of MPA in Germany 2010

In Germany drivers stopped with a blood-alcohol concentration in excess of 1.6 parts per thousand, or else have repeatedly been convicted of driving with lower levels alcohol in their bloods, have to undergo a medical and psychological assessment (MPA), before having their driving licence returned back to them. 39% of all subjects lost their license due a too large risk of recidivism. In 2010 49 % did have their driving licence returned as a result of passing the assessment. Initially 13% did not get their licence back but managed to do so after attending and passing special courses for drivers at risk of drinking alcohol again. In Germany these courses are called Section 70 courses referring to the relevant section in the German Driving Licence Regulations (FeV) in which these courses are regulated by the German legislative authorities. Once this course has been passed the course participant does not have to undergo another MPA.

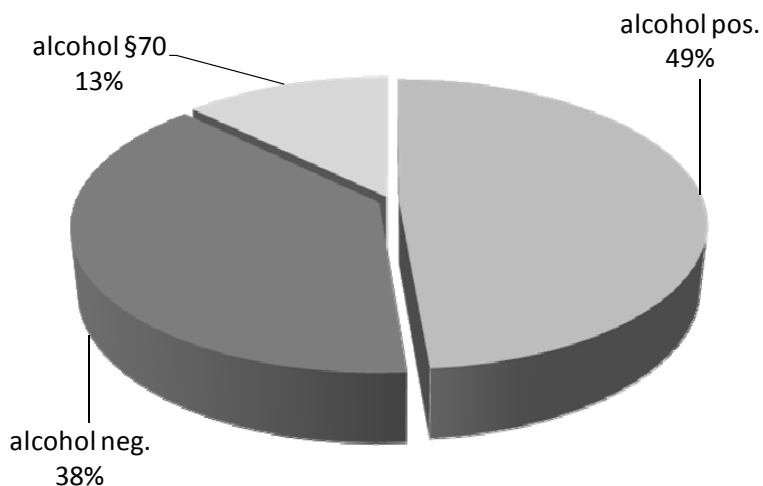


Figure 2: Results of the alcohol MPA in Germany in 2010

At the beginning of the studies in 2008 there had been some very important changes and developments in the German driving licence system in the preceding 10 years. The important thing to check was whether they had given rise to changes in the level of recidivism. The last reviews of the figures for recidivism amongst drivers convicted of drink-driving offences in Germany was even then, when they were conducted, so far back in the past that for this reason alone it made sense to conduct another review. In the meantime the assessment criteria governing suitability to drive in Germany had also been revised and made compulsory for all assessment centres (Schubert & Mattern, 2009). From this perspective it is absolutely essential anyway that the levels of recidivism following medical and psychological assessment (MPA) are reviewed on a regular basis and were also due in 2008.

Another important concern was the reduction of the amount of blood alcohol concentration allowed for drivers down to 0.5 parts in a thousand, which was introduced in the years beforehand in Germany. In the lead-up to this a large number of support and therapy programmes varying in quality had established themselves in response to the MPA, and these were used by the persons concerned to pass the MPA.

In the past various studies have been carried out in Germany on the national figures of drivers convicted of drink-driving offences subsequently abiding by the law / lapsing into recidivism after undertaking an MPA (Stephan, 1984, 1986; ALKOEVA, Winkler et al., 1988, 1990; EVAGUT, Jacobshagen & Utzelmann, 1996). The figure 3 shows the results of the studies arranged by relevant year for those persons who passing the MPA and recidivists amongst the Section 70 course participants. The figures show a distinct reduction in the levels of recidivism over the course of the years. The benchmark figure of 18.8% was established in response to the ALKOEVA studies, and this figure is also used as a reference for assessing the quality of the Section 70 courses. In Germany these courses have to prove on a regular basis that they have the effect of reducing recidivism by means of evaluation studies in order to qualify for a licence

issued by the supervisory authorities allowing them to conduct the courses. The questions raised are what the current figures are, and secondly whether there has been a continuation in the drop of recidivism in particular as a result of the improvement in background conditions in recent years.

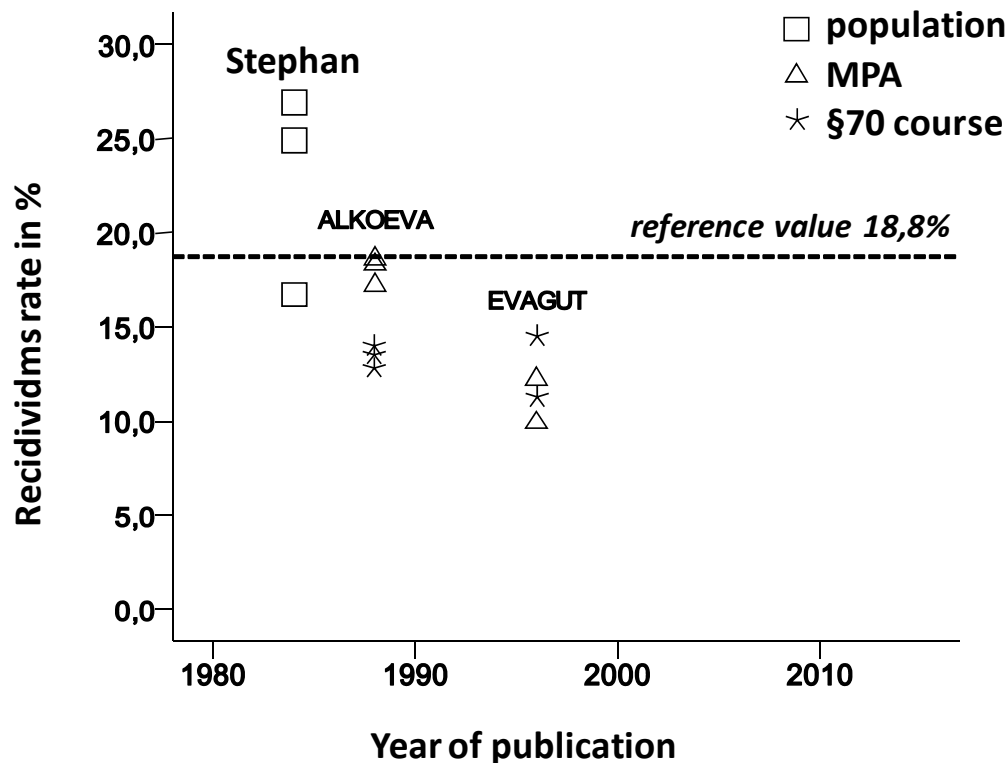


Figure 3: results of recidivism-rate after MPA in Germany at 2005

Against this background the Commission established to ascertain suitability to drive by the Association of Technical Control Boards (VdTÜV) and the member organisations affiliated within it, that is officially recognised assessment centres for the suitability to drive (ABV/TÜV Rheinland), DEKRA, TÜV Hessen, TÜV Nord, TÜV SÜD, TÜV Thüringen) has organised studies to assess the level of non-recidivism amongst drivers convicted of drink-driving offences, conducted and evaluated by the Centre for Evaluation and Methods (ZEM) at the University of Bonn.

## 2. Questions asked and Methods Employed

The specific questions asked in the study were:

- How high are the recidivism rates for drink-drivers after an MPA in Germany?
- Do the recidivism rates of drivers with a positive assessment differ from those of drivers with a Section 70 recommendation?
- How do the recidivism rates of drink-drivers without an MPA compare?

The study was designed to be a retrospective analysis, in which MPA-participants from the various assessment centres would be randomly chosen and asked alcohol-related questions with their relapse logged in a central traffic register. Persons who had also been convicted of drink-driving offences, but who did not have to attend an MPA course and who have regained their driving licence without having to be assessed were logged in the central traffic register as a control group.

The MPA group consisted of subjects who had been convicted of drink-driving offences but had not been reconvicted subsequently for similar offences. Selected subjects were convicted of drink-driving offences for the first time and were convicted on subsequent occasions for drink-driving offences. In addition to this, the subjects were subdivided into a group who had been

recommended to take the Section 70 course and who had passed it. The participants were selected proportionally from each of the assessment centres involved in 2006 relating to the level of involvement of the respective centres in the assessment. The study was restricted to male participants, since the proportion of male drivers amongst the total group is in excess of 90% and a comparison between the sexes was judged to be irrelevant for the questions asked.

The control group consisted of a random sample of men who had been fined for drink-driving offences for the first time but not convicted (regulatory offence group here called OWi). These are people who had a blood alcohol concentration of less than 1.1 parts per thousand. This sample was split up into group distributions of people from the MPA group within the federal regions. The objective was to make the random samples comparable in terms of the density of traffic monitoring. The period of time over which records were kept, that is, the point in time of the MPA or the drink-driving offence (OWi) were between 11/2005 and 10/2006.

4 MPA groups with a total of 1,600 persons were recorded. These MPA random samples were sub-divided into previous history (first or repeated offence) and assessment result (pass versus Section 70 recommendation) into four groups of 400 each. The control group included 3200 persons. Since it was possible to record the control group fully automatically in the central traffic register (VZR), we managed to record sizable quantities of persons at no extra cost.

*Table 1: Sample sizes of the MPA group and The OWi group*

		Alcohol	
		First offence	Repeat offence
MPA	Positive	n=400	n=400
	§ 70	n=400	n=400
OWi		n=3200	

All convicted drink-drivers will be regarded as recidivist if they reoffend within three years from the beginning of their period under observation. For subjects in the MPA groups this period of time begins when they are given back their driving licence. This phase shall commence for persons in the OWi group from the date of first offence. The VZR enquiry took place in November 2010. An overlap period of one year would have to be included in the VZR, to ensure that even if there is a delay in reporting drink-driving offences they can still be entered. By using this system it can be assumed that the analysed VZR enquiry will contain virtually all drink-driving offences committed within the period under review and the risk of an estimate of the probability of recidivism being skewed is low.

In connection with the predictive validity of the MPA and the effectiveness of § 70 courses, the following hypotheses can be formulated:

- The probability of recidivism for the MPA groups respectively is not higher than the probability of recidivism for the OWi group
- The probability of recidivism for the MPA group is the same as for the MPA group

Since no other findings were reached on the significance of possible discrepancies between the groups, these research hypotheses are described here as statistical null hypotheses. The same significance level of  $\alpha = .05$  is applied throughout.

### **3. Results**

Table 1 shows the ratios of recidivism separately in percentages for the individual random groups. It is clear that at 6.5% (first offence, positive response to the course), 8.0 % (first offence, Section 70) and 6.8 % (second or subsequent offence, Section 70) are at a similar level not only in comparison with each other but also in comparison with the recidivism ratio of the OWi group which is 8.2%.

Table 2: Recidivism in absolute figures and expressed as percentages

		Alcohol	
		First offence	Repeat offence
MPA	Positive	6.5% (21/325)	8.3% (27/326)
	§ 70	8.0% (25/312)	6.8% (20/296)
OWi		8.2% (261/3180)	

The differences between these recidivism ratios are statistically not significant. The probability of recidivism for the MPA groups are therefore no greater than those for the regulatory offence group (OWi). The only thing to be tested here is whether the probability of recidivism for the "repeat offence, positive response to the course" is greater than that of the OWi group ( $\chi^2 = 0.002$ ,  $df = 1$ ,  $p = .481$ ), since the recidivism ratios of the other MPA groups is in fact less than 8.2 %. Moreover, the difference between the MPA groups is insignificant ( $\chi^2 = 1.139$ ,  $df = 3$ ,  $p = .768$ ), that is, there is not a statistically significant main effect nor is there a significant interaction between previous track record and MPA result.

Of the interviewed subjects in the MPA groups, only those for whom the restoration of driving licence was registered in the VZR within six months in accordance with the MPA were taken into consideration in the analysis, and for those whose driving licence (FE) was not revoked within the period of review in response to a non-drink-driving related offence. For the MPA groups the potential fulfilment ratio of the gross random samples of 400 people lies between 74 % and 82 %. The reason for this was chiefly the failure to regain the driving licence on time. These figures are comparable with other studies. In comparison with them there is a much higher potential fulfilment ratio for the OWi group as a result of driving licences not being taken away as well as recruitment from the VZR. Only 20 cases from the OWi group in which driving licences were withdrawn due to non-drink-driving related offences, were excluded from the analysis

The next slide shows the recidivism ratios together with 95% confidence intervals to illustrate the accuracy with which the probability of recidivism for each individual is estimated. As a result of having larger random samples, the probability of recidivism for the OWi group which consequently ranges between 7% and 9%, can be estimated with greater accuracy than the probability for individuals in the MPA groups, which overall range between 4% and 12%.

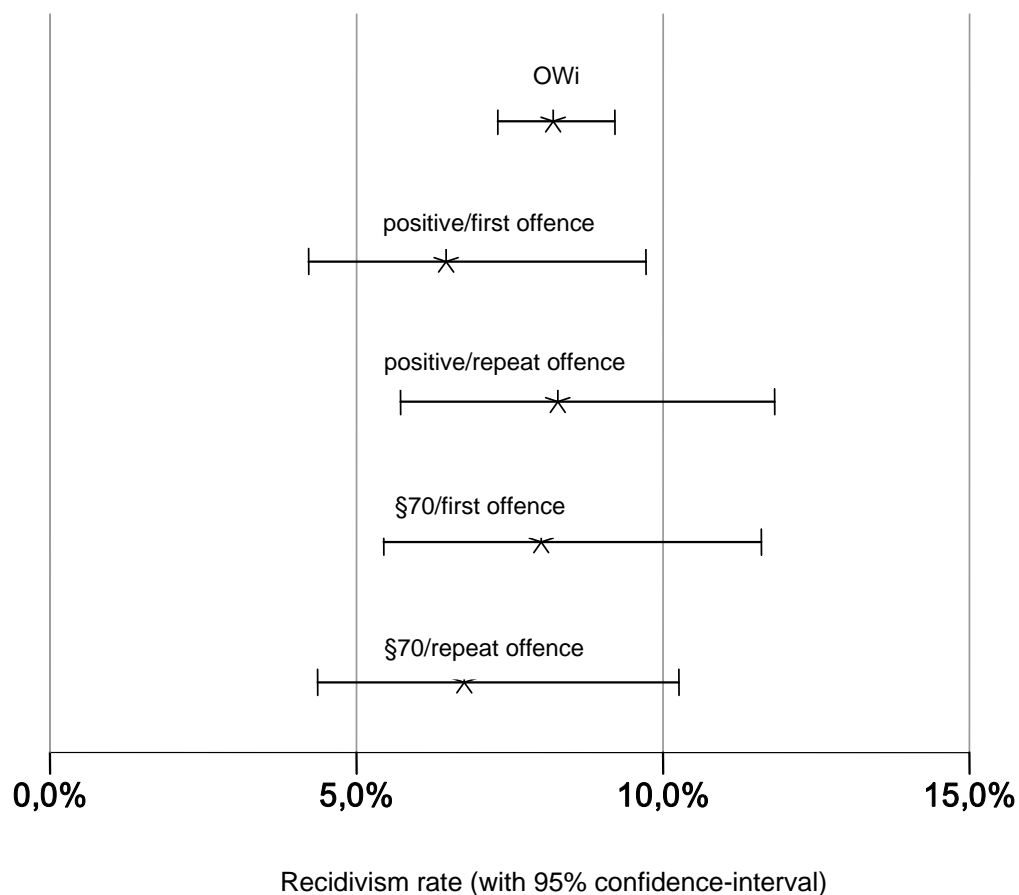


Figure 4: Estimation of the probability of the recidivism rate

The speed of recidivism of the investigated groups is very similar in each case. Over the three-year observation period the recidivism figures for the MPA groups is below that of the control group.

The age distribution of the 4 MPA groups and the control group are likewise very similar and do not give rise to any serious discrepancies.

Table 3: Age distribution of the OWi and MPA group

	OWi	MPA
- 21 years	14,1%	6,8%
22 - 24 years	9,0%	10,2%
25 - 34 years	21,5%	28,7%
35 - 44 years	23,4%	26,3%
45 - 64 years	28,6%	26,7%
65 years and more	3,5%	1,4%
Total	$n = 3180$	$n = 1259$

#### 4. Results

In the presented study on the recidivism figures for those convicted of drink-driving offences, more than 92 % are not reconvicted for drink-driving offences within a subsequent 3-year period. The improvement in the results over past decades in terms of reducing levels of reoffending is proven by the submitted results.

There is no statistically-significant discrepancy between the recidivism ratios for all MPA case groups under review (first offences and repeat offences for drink-drivers for whom a positive outcome has been forecast or for those for whom a Section § 70 course has been recommended) either amongst each other, or in comparison with the recidivism ratio of the regulatory offence group (OWi).

The MPA groups do not indicate any higher recidivism figures, although the outcomes are beset with far more problems than regulatory offence group (OWi), which is in fact the reason behind the MPA being set up in Germany. These drivers (OWi) are only fined and banned from driving for a set period and it is accepted that they regain their driving licence at the end of the ban without having to attend any rehabilitation courses. On the other hand the outcome for MPA groups is seen far more critical since since they have been convicted either for a repeat offence or with significantly higher blood alcohol concentrations ( $\geq 1.6 \text{ ‰}$ ).

Consequently the submitted results are interpreted as empirical evidence of the reliability of forecast of the German MPA for convicted drink-drivers and of the preventative effect of such approaches to prevent relapses into the current behavioural patterns in order to qualify for the return of a driving licence.

If, moreover, the results we have are compared with the figures from previous studies, a steady drop in the ratio of repeat offences can be observed over the course of the years (compare figure 5). In the past the figures were for ALKOEVA were, for example about 19% after a positive assessment and for EVAGUT only as much as 10 % to 12 %. Today's results are now 6.5 % and 8.3 % for a positive forecast.

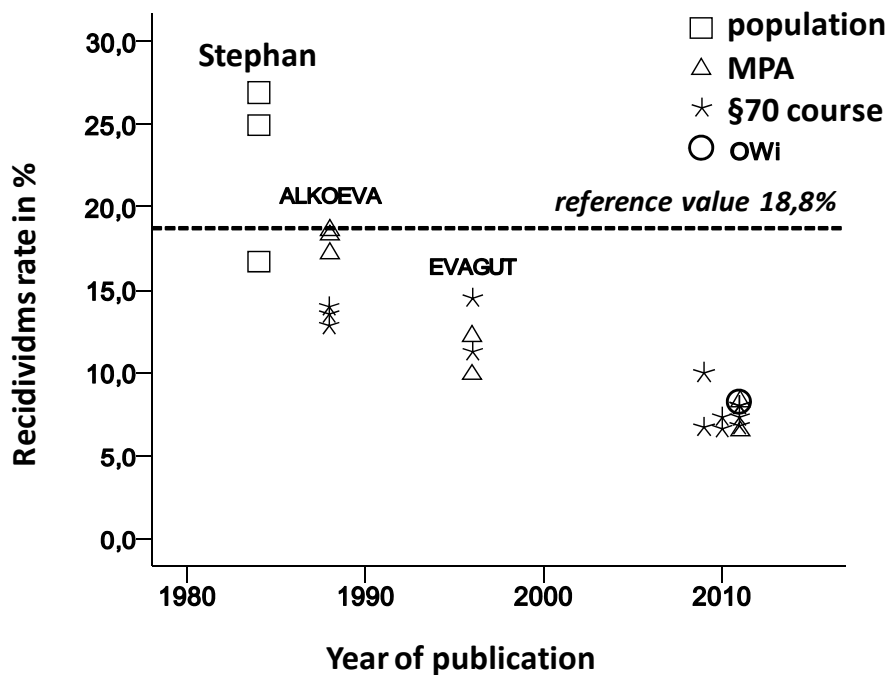


Figure 5: Development of results of studies on levels of reoffending in Germany since 1980

A similar development can be observed with subjects who have passed a Section 70 course after an MPA. The recidivism rate at ALKOEVA was in the middle for all three tests course types (IFT, IRaK und LEER) at approximately 13 %. For EVAGUT the participants of the Section 70 course LEER were reviewed and this produced a recidivism ratio of 11% for first offences and for drivers committing repeat offences a ratio of 15%.

In the study to hand the ratio amongst participants of Section 70 courses who were caught for their first offence was 8 % and for drivers caught for repeat offences was 6.8 %. A drop in the number of re-offenders is perceptible for Section 70 course offenders as well. This trend is also confirmed by the more recent evaluations of the IFT, IRaK, LEER and K 70 course shown in the diagram (Brieler & Zentgraf, 2010; Kalwitzki et al., 2011; Kraus, 2011; Schülken et al., 2011).

However, this study is unable to give insights upon the manner in which each of the changes mentioned at the beginning have had a specific effect on rehabilitation rates and the levels of reoffending. Additional targeted and more wide-ranging studies ought to be conducted on this.

In future research, other samples should also be included in the evaluations, such as drivers convicted for drug-related offences or for driving offences, since the assessment criteria deciding the aptitude of an individual to drive a motor vehicle in Germany are currently under review and other samples would be of particular relevance. The infrastructure for conducting these types of studies ought to be improved as well, so that the high costs for the test organisations can be reduced. With a better economic infrastructure such studies could be conducted on a more regular basis to increase the findings and knowledge on this topic. This can, for example, be achieved by specific statistics and relevant data being sent to the German Federal Office for Motor Traffic automatically by the German driving licence authority. This means that the quality of results and the findings derived from them can also be improved and fine-tuned considerably. Proposals for optimising the procedure have already been made with regard to this (Jacobshagen & Nickel, 2010).

A more detailed report of the results is published in *Blutalkohol und Zeitschrift für Verkehrssicherheit* in 2012 (Hilger et al.).

## References

- Brieler, P. & Zentgraf, M. (2010). Kurs zur Wiederherstellung der Kraftfahreignung gem. § 70 FeV für alkoholauffällige Kraftfahrer: Programm IFT, Teilnehmerstruktur und Wirksamkeit. *Blutalkohol*, 47, 383-393.
- Blutalkohol* (2011) Medizinisch-Psychologische Untersuchungen (MPU) im Jahr 2010, Vol. 48, Nr. 5, 279-281.
- Hilger, N., Ziegler, H., Rudinger, G., DeVol, D., Jansen, J., Laub, G., Müller, K. & Schubert, W. (2012). EVA-MPU: Zur Legalbewährung alkoholauffälliger Kraftfahrer nach einer medizinisch-psychologischen Fahreignungsbegutachtung (MPU). *Zeitschrift für Verkehrssicherheit* (Sonderdruck zum Verkehrsgerichtstag 2012), 58, 1-6.
- Hilger, N., Ziegler, H., Rudinger, G., DeVol, D., Jansen, J., Laub, G., Müller, K. & Schubert, W. (2012). EVA-MPU – Zur Legalbewährung alkoholauffälliger Kraftfahrer nach einer medizinisch-psychologischen Fahreignungsbegutachtung (MPU), Vol. 39, Nr. 2, 74-84.
- Jacobshagen, W., Nickel, W.-R. (2010). Bessere Wirksamkeitskontrollen von MPU und Kursen – Warum die Routinemitteilungen an das Verkehrszentralregister ergänzt werden müssen. *Zeitschrift für Verkehrssicherheit*, 56, 74-78.
- Jacobshagen, W. & Utzelmann, H. D. (1996). *Medizinisch-Psychologische Fahreignungsbegutachtungen bei alkoholauffälligen Fahrern und Fahrern mit hohem Punktestand. Empirische Ergebnisse zur Wirksamkeit und zu deren diagnostischen Elementen.* Köln: Verlag TÜV Rheinland.



Kalwitzki, K.-P., Höcher, G., Kollbach, B., Schroerswarz, S., Stengl-Herrmann, D., Veltgens, U. & Brieler, P. (2011). Der Beitrag der Kurse nach § 70 FeV zur Verkehrssicherheit. Zeitschrift für Verkehrssicherheit, 57, 142-148.

Kraus, C. (2011). „LEER“ rehabilitation course for drink driving offenders. In D. Twisk & W.-R. Nickel (Eds.), Fit to drive: 5th international traffic expert congress, Den Haag 2011 (pp. 44-45). Bonn: Kirschbaum Verlag.

Schubert, W. & Mattern, R. (Hrsg.) (2009). Urteilsbildung in der Medizinisch-Psychologischen Fahreignungsdiagnostik – Beurteilungskriterien. Bonn: Kirschbaum Verlag.

Schülken, T., Leisch, M., Sachse, R. & Veltgens, U. (2011). Zur Wirksamkeit des verkehrspsychologischen Kurses „K 70“ zur Wiederherstellung der Kraftfahreignung für alkoholauffällige Kraftfahrer. Zeitschrift für Verkehrssicherheit, 57, 28-33.

Stephan, E. (1984). Die Rückfallwahrscheinlichkeit bei alkoholauffälligen Kraftfahrern in der Bundesrepublik Deutschland – Die Bewährung in den ersten fünf Jahren nach Wiedererteilung der Fahrerlaubnis. Zeitschrift für Verkehrssicherheit, 30, 28-34.

Stephan, E. (1986). Die Legalbewährung von nachgeschulten Alkoholersttägern in den ersten zwei Jahren unter Berücksichtigung ihrer BAK-Werte. Zeitschrift für Verkehrssicherheit, 32, 2-9.

Winkler, W., Jacobshagen, W. & Nickel, W.-R. (1988). Wirksamkeit von Kursen für wiederholt alkoholauffällige Kraftfahrer. Unfall- und Sicherheitsforschung Straßenverkehr (Heft 64). Bremerhaven: NW-Verlag.