SOCIAL NORMS, ATTITUDES AND INTENTIONS CONCERNING DRINKING AND DRIVING. A CROSS-NATIONAL COMPARISON

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Summary. In the present questionnaire study a comparison is made between drivers from Denmark, Norway and Sweden concerning factors that influence intentions to drink and drive. The design of the questionnaire and the analysis of data was guided by a theoretical framework and LISREL analysis was used in the comparison of national samples. In the different countries the same causal structure could be used to describe relations among variables. Previous behavior, attitudes, social norms and frequency of intoxication were found to be important determinators of intentions to drink and drive.

INTRODUCTION

The use of alcohol in combination with motor-vehicles is a serious worldwide transportation problem and great efforts are made in different countries to modify driver behavior. As drinking habits, driver mileage, laws against drunken driving, punishment, etc., vary between different countries comparisons of drivers in different cultural settings might be of interest for the understanding of drivers' decisions to drink and drive. In spite of many similarities among the Nordic countries, laws and measures against drunken driving vary a great deal. In Norway, and Sweden there is a BAC-limit of 0.05 percent while the limit is 0.08 in Denmark. The punishment for drunken driving in Norway is more severe than in the other countries (Carstensen et al, 1984), while the intensity of enforcement is estimated to be higher in Sweden than in Norway (e.g. Assum, 1987). The consumption of alcohol is higher in Denmark than in the other countries (Carstensen et al, 1984).

Ajzen and Fishbein (1980) proposed a theory of reasoned action stating that a specific behavior is closely linked to a behavioral intention. The intention is a function of attitudes and social norms concerning the specific behavior. The attitudes and norms are determined by personal and social beliefs and evaluations about the behavior. In the Fishbein and Ajzen model it is assumed that the behavior of interest is under volitional control, an assumption that may not always be valid (Wittenbraker et al, 1983). Subtasks of driving are often rutinized and performed habitually without direct cognitive control. Triandis (1977) presented an alternative theory of reasoned action accounting for both intention and habit (defined as previous behavior) being explanations of human behavior.

The Ajzen and Fishbein model postulates causal relationships and structural equation modelling has great advantages in analyses of complex causal structures. The LISREL technique (Jreskog and Srbom, 1988) makes it possible to test the fit between a theoretical causal model and empirical data. The method addresses two basic problems, the problem of measurement of observed variables and the problem of relationships between variables, both observed and unobserved. Hypothetical structures from different samples can be compared with help of the LISREL technique, a useful feature for a cross-national comparison.

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The problem in the present study is to compare drivers from Denmark, Norway and Sweden concerning factors that might affect the decision involved in drunken driving.

METHOD

A questionnaire was constructed and translated into the different Scandinavian languages. Both the Ajzen and Fishbein and Triandis models were used to guide the design of a questionnaire and the analysis of causal relationships among variables proposed in the theoretical model. It contained questions concerning intentions to drink and drive in the next three years, drunk driving occasions during the past three years, attitudes and social norms towards drunken driving. Evaluations, for example of punishment for drunken driving and for involvement in accidents were also asked for. The drivers were asked to report about their drinking habits and frequency of intoxication. The items mentioned above are discussed in the present paper. In addition, there were several questions concerning driving behavior and need for a car, knowledge about driving and alcohol, circumstances concerning decisions to drink and drive, etc. These variables were analysed in the present context but they did not yield significant contributions to the causal model.

In Denmark 1472 questionnaires were returned from a sample of 3536 drivers randomly stopped by the roadside. In Norway questionnaires were distributed by mail to a sample of 4000 licenceholders and in Sweden to a sample of 4000 carowners. In Norway 2202, and in Sweden 2520 questionnaires were returned.

The statistical analysis required national samples of equal composition and size. Therefore, for each country a subsample of about 500 persons, comprising only male non-teetotalers aged 54 or younger, were drawn from the main sample.

RESULTS

The LISREL analysis showed that the measurement model for the relationships between observed and unobserved variables was invariant over countries and that similar causal models between unobserved variables could be used in the three national samples. The goodness of fit between the overall model and data was acceptable (chi square= 125.4, df=101, p=.05). The relationships among unobserved variables varied to some extent between different samples, but the differences were small. In Figure 1, a graphical representation of the results, concerning the measurement model, and in Figure 2 relationships between unobserved variables for different countries, are presented.

In all countries there is a strong relationship between intention and previous behavior, and it was assumed that previous behavior causes intentions rather than vice versa. Social norm and attitude are interrelated to an extent that is not predicted in the Ajzen and Fishbein model. It is assumed here that attitude is caused by social norm. The LISREL technique cannot solve the problem concerning direction of a relationship.

Among beliefs and evaluations towards drunken driving only evaluation of sanctions (to be suspected, or punished, for drunken driving) was found to contribute to the explanation of intentions and previous behavior. As for background variables, only consumption of alcohol improved the model, while for example yearly mileage or need for motorvehicles did not. The amount of
variance in the intention to drink and drive variable explained by the causal models was for Denmark: 75.1%, Norway: 86.0%, and Sweden: 78.3%. In a similar way 68.7%, 71.7%, and 72.9%, respectively, of the variation of previous behavior was explained by the model in each country.

The causal models for the different countries were highly similar although there were differences in distributions of answers. For each unobserved variable an index was computed. The index is the sum of the observed variables and, for practical reasons, the resulting index scales are reduced to scales with only four points. Distributions of indexpoints for different samples are presented in Figure 3.

The samples from Norway and Sweden did not differ from each other except in frequency of intoxication, perhaps due to a lower age in the Norwegian sample. Denmark differed significantly from the other two countries for all indices except intoxication. The Danes reported more previous drinking, stronger intentions to drink and drive in the future, less negative attitudes, weaker social norms against drunken driving and more neutral evaluations of sanctions.

DISCUSSION

In the present study previous behavior was shown to be of importance for intentions to drive after drinking in the future. To some extent the result is in accordance with Triandis (1977) who suggested that previous behavior, as well as intentions, should be important for future behavior. Social norms, which according to Ajzen and Fishbein (1980) should not be correlated with attitudes, affected not only intentions to drink and drive but also evaluations of sanctions and attitudes towards drunken driving. Thus the model, adjusted to match empirical data, deviates from the theoretical framework that was used to guide the present analysis.

Denmark differed from Norway and Sweden in most of the variables related to intention. In spite of these differences a common structure could be used to describe relationships among variables. There were two important results concerning the fitness between the proposed structural model and empirical data. First, the magnitude of the correlation coefficients between unobserved and observed variables did not vary among the samples from different nations. Second, the same causal structure between unobserved variables could be used to explain drivers' intentions to drink and drive in all three countries. In addition to the results concerning a strong relationship between intention and previous drunken driving and a strong influence of social norms on drivers' attitudes and evaluations of sanctions, it was found that frequency of intoxication directly affected most of the other variables in the model.

The results of the present study are in agreement with results from a previous study of Swedish drivers (Norström, 1983) where a strong impact of alcohol consumption and moral attachment on drunken driving was observed. Neither motoring nor risk of detection had any effect on behavior (or intentions) in any one of the studies.

The cross-national design of the present study increases the validity of the results and the possibility to make generalizations to other countries or cultures concerning factors affecting drivers' decisions to drink and drive.
Acknowledgement. The presentation of the present paper was supported by the Swedish Transport Research Board.

REFERENCES


SLIGHT INTOXICATION  HEAVY INTOXICATION

INTOXICATION

UNACCEPTABLE  UNRESPONSIBLE

ATTITUDE

SOCIAL NORM

IMPORTANT PERSONS AGAINST

SANCTIONS

EVALUATION OF BEING SUSPECTED  EVALUATION OF PUNISHMENT

PREVIOUS BEHAVIOR

DRIVING BELOW LIMIT  DRIVING OVER LIMIT

INTENTION TO DRIVE BELOW LIMIT  INTENTION TO DRIVE OVER LIMIT

INTENTION

Figure 1. A graphical model depicting directions of relationship among observed variables (rectangles) and unobserved variables (circles) as a result of a LISREL analysis.
Figure 2. Relationships between unobserved variables for different national samples.
Figure 3. Distributions of indexpoints among unobserved variables concerning intentions, attitudes and social norms in favour of drunken driving, previous behavior, evaluation of punishment and frequency of intoxication. For different national samples.