



# Race, gender, and risk perceptions of the legal consequences of drinking and driving<sup>☆</sup>

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## ABSTRACT

**Introduction:** This study investigated whether subjective beliefs about the consequences of driving while intoxicated (DWI) differ by race/gender. **Method:** Beliefs affect driving behaviors and views of police/judicial fairness. The researchers compared risk perceptions of DWI using a survey of drinkers in eight cities in four states with actual arrest and conviction rates and fines from court data in the same cities. **Results:** With state arrest data as a benchmark, Black males were overly pessimistic about being stopped, whether or not actual drinking occurred, and attributed higher jail penalties to DWI conviction. That Black males overestimated jail sentences incurred by the general population suggests that they did not attribute higher jail penalties to racial bias. Arrest data did not reveal disparities in judicial outcomes following DWI arrest. **Conclusions:** Blacks' subjective beliefs about DWI consequences may reflect social experiences, which are not jurisdiction- or crime-specific; this is a challenge to policymakers aiming to deter DWI by changing statutes and enforcement. **Impact on Industry:** If perception of bias exists despite no actual bias, a change in enforcement policy would not be effective, but a public relations campaign would be helpful in realigning beliefs.

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## 1. Introduction

Motor vehicle accidents are the leading cause of death among persons under age 24 in the United States and the fifth leading cause of death among those aged 25–44 (Hoyert & Xu, 2012). Driving while intoxicated (DWI) is a leading cause of motor vehicle accidents leading to fatalities (Brewer et al., 1994; Vaughn et al., 2011). Problem drinking has been much less prevalent among females but differences among genders are shrinking (Keyes, Li, & Hasin, 2011). For some age groups, alcohol consumption is lower among Blacks than Whites; for all ages, Blacks have lower rates of abstinence than Whites (Caetano, Clark, & Tam, 1998). Accounting for number of drinking sessions and average number of drinks per session, Birdsall, Reed, Hug, Wheeler, & Rush (2012) found no statistical difference between Blacks and Whites in driving “when you’ve had perhaps too much to drink.” Some studies show that Blacks experience higher rates of adverse effects of drinking than predicted from estimated alcohol use (Costanzo et al., 2007; Hasin, Stinson, Ogburn, & Grant, 2007), but overall, findings are mixed (Keyes, Liu, et al., 2012). Although treating the underlying addiction is performed to reduce DWI, major policy interventions remain arrest, conviction, and various penalties (Dula,

Dwyer, & LeVerne, 2007; Taxman & Piquero, 1998). Such policies may be considered successful if they deter DWI. Yet such policies should be implemented in ways considered to be fair.

In this study, we assessed relationships between race and gender, drinking and driving behaviors, and legal consequences of DWI, both perceived and actual. Rather than just focus on the rates of being stopped by police for DWI, we analyzed the entire chain of events following being stopped to penalties if convicted. Assessing the arrest resolution process allowed us to examine the possibility that disparities at one stage are offset by decisions in the opposite direction at other stages. Perceptions are important to the extent they influence driving behavior and reflect how people view equity in law enforcement and judicial processes. Laws, and practices implementing such laws, are unlikely to affect decisions if people are uninformed about them. Existing studies on risk perceptions are motivated by the premise that deterrence depends on the perceptions of the risk of penalties from offending (e.g., arrest and conviction; Nagin, 1998). While there is some literature on subjective beliefs and risk perceptions of apprehension for criminal activity (Apel, 2013) as well as research on the relationship between other demographic factors, such as age, on risk perceptions and crime (e.g., Hjalmarsson, 2009), there currently is a lack of systematically collected evidence of subjective beliefs as they differ by race.

If population subgroups underestimate the sanction rates, this is a likely source of under-deterrence. However, if the sanction rates are overestimated, this may have these adverse effects. First, if certain population groups believe that laws are enforced inequitably, this may also adversely influence compliance with such laws. If there is overestimation in arrest rates, these beliefs may cause people to view the

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criminal justice system as inherently unfair, and this may undermine civic participation (Bobo & Gilliam, 1990; Weaver & Lerman, 2010). Second, overestimation and consequently over-deterrence may result in reductions in the rate of crime in question, a desirable outcome, but individuals may substitute other undesirable behaviors for the crime in question. This type of compensatory behavior has been documented in other safety issue contexts (e.g., for seatbelt requirements; Peltzman, 1975). In the context of drinking and driving, having to drive home from a bar or restaurant might cause a restraint on an individual's drinking. However, in response to overestimation of the strictness of laws, the drinker may be more likely to find a sober person to drive him home, thus removing the restraint on drinking at the bar or restaurant and causing the individual to consume more alcohol than he or she otherwise would.

In this study, we compared risk perceptions to objective data obtained from arrest records in the same eight U.S. cities. Unlike past studies of stops and sentences following conviction, we included risk perceptions of DWI sanctions by race and gender and actual rates of DWI arrest and judicial outcomes following arrest in the same study.

## 2. Methods

### 2.1. Data on risk perceptions, alcohol consumption, and driving behaviors

Our survey, the Survey of Alcohol and Driving (SAD), obtained detailed information on alcohol consumption, drinking and driving behaviors, addiction, substance use other than alcohol, risk perceptions, knowledge of DWI statutes and judicial practices, personality and demographic characteristics, and income.<sup>1</sup> When possible, questionnaire design was guided by questions asked in prior surveys, albeit not all in the same instrument. No prior survey combines detailed questions on subjective beliefs, particularly about legal consequences of drinking and driving with questions about alcohol consumption and its determinants. Wave 1 was conducted using Computer Assisted Telephone Interviews (CATI), and the other two waves were conducted through the web using Computer Assisted Self-Administered Interviews (CASI). Wave 1, which focused on questions with short answers, more easily answered by telephone. Questions about expectations were asked in Wave 2. The use of the web-based surveys in Waves 2 and 3 allowed us to ask questions which were more complex and included a visual display to aid eliciting information from respondents. This study relied on data from Waves 1 and 2. Wave 3 was a shorter follow-up to Wave 2, designed to allow comparison of expectations about future behaviors with actual self-reported behaviors measured a year later. Wave 1 had 1,520 respondents, 4 of whom identified themselves as Hispanic. The four observations were dropped because of an insufficient number of observations for this population sub-group, yielding a net sample of 1,516 observations. Wave 2 had 1,291 respondents. Due to the use of conditional questions, which skips questions based on responses, the number of responses to some questions were considerably lower than the number of observations for the wave.

Notably, SAD was not about race. Questions about race and gender and past driving history were asked in Wave 1; race was not mentioned in the study description used to introduce SAD to potential respondents or in subsequent interviews.

Since the focus was on DWI, SAD excluded persons reporting no alcohol consumption or driving in the past month during the screener interview. We deliberately oversampled persons who consumed large amounts of alcohol and were prone to DWI to allow us to study decision-making processes and behaviors of such individuals in detail.

Battelle Memorial Institute conducted the three-wave survey of drinking and driving on our behalf in eight cities in four states during 2009–2012: Raleigh and Hickory, North Carolina; Philadelphia and Wilkes-Barre, Pennsylvania; Seattle and Yakima, Washington; and Milwaukee and La Crosse, Wisconsin. We drew our sample from a limited number of cities because the SAD asked about DWI laws and motor vehicle insurance specific to the respondent's location. We selected these cities to represent a broad geographic spread of large and small cities. While no eight-city sample can be nationally representative, the four study states vary in severity of their DWI problems, e.g., per capita consumption of ethanol in gallons in 2007—ranging from 2.0 in North Carolina to 3.0 in Wisconsin (National Institute on Alcohol Abuse and Alcoholism, 2009). The four states also differ in their DWI prevention laws, demographic composition, and histories as applied to race with North Carolina, but not the other states, having a history of legal segregation. Differences among the states exist for sentencing and fines. Scheduling criminal penalties has become commonplace, including among the four study states. The state statutes contain minimum or maximum penalties according to a classification system that differs among the states. The scheduled penalties varied substantially among the four study states. For example, North Carolina and Washington had minimum jail terms for first time DWI offenders while Pennsylvania and Wisconsin did not. North Carolina specified a \$200 maximum fine for the lowest sentencing level while the other states specified minimums of at least \$150 (in Wisconsin).<sup>2</sup> Arrest per capita population ratios varied from 0.25% in Washington to 0.67% in Wisconsin in 2009.

We also obtained state court data from each state on individual arrests for DWI in 2009. Except for Washington, which did not include jail and fine amounts, the data contained original charges, reduced charges resulting from plea agreements, and information on conviction and sentencing. From these data, we computed objective measures of arrest, conviction, and penalties by race/gender for the same eight cities where SAD was conducted.

### 2.2. Statistical analysis: empirical specification

#### 2.2.1. Overview

We analyzed three types of dependent variables using SAD data. The first were binary variables for self-reports of a DWI arrest and a citation for speeding 15+ miles per hour (mph) over the speed limit within the three years before Wave 1. We conducted this analysis to determine whether there were differences by race and gender in experiencing legal consequences related to drinking and driving behaviors that might affect risk perceptions of DWI sanctions. We also compared experiences of sample persons to DWI arrest data in the eight cities in which they resided. The second dependent variable type consisted of expected driving behaviors during the year following Wave 2 to determine whether respondents expected to be at greater or lesser risk of being convicted and penalized for DWI. Third, we analyzed expected legal consequences of driving while intoxicated to gauge subjective beliefs about conviction rates and penalty amounts for DWI.

#### 2.2.2. Dependent variables: driving history

We assessed three dependent variables for driving history: the number of times a person drove when she/he was slightly intoxicated (e.g., felt a little tipsy); whether the person had been arrested for a DWI in the last three years; and whether the person was cited for speeding 15+ mph above the speed limit in the last three years.

<sup>1</sup> The survey instruments are available on the study website: [dialog.econ.duke.edu/dapstudy](http://dialog.econ.duke.edu/dapstudy).

<sup>2</sup> Information on fine amounts comes from state statutes. Washington: Rev. Code Wash. (ARCW) § 46.61.5055; North Carolina: N.C. Gen. Stat. § 20–179; Pennsylvania: 75 Pa.C.S. § 3804; Wisconsin: Wis. Stat. § 346.65.

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