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## PERCEPTIONS AND EXPERIENCES OF RANDOM BREATH TESTING IN QUEENSLAND AND THE SELF-REPORTED DETERRENT IMPACT ON DRINK DRIVING

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### ABSTRACT

**Objectives.** The present study aimed to explore the impact of random breath testing (RBT) on the attitudes, perceptions and self-reported behaviour of motorists in the Australian state of Queensland. Particular attention was given to how exposure to RBT impacted on motorists' perceived risk of apprehension and self-reported behaviour, relative to other variables of interest such as alcohol consumption.

**Methods.** The study involved a telephone survey of 780 motorists drawn from throughout the state of Queensland. Participants were volunteers recruited from a random sample of all listed telephone numbers in the state, adjusted according to district population figures. The survey questionnaire collected information relating to the participants': socio-demographic characteristics; drinking and drink driving behaviours; attitudes to drink driving and RBT; and experiences and perceptions of RBT.

**Results.** The analysis indicated that a large proportion of the sample had both observed RBT and been breath tested within the last six months, and believed the practice served an important role in improving road safety. However, a considerable percentage also reported drink driving at least once in the last six months without being detected, with further analysis indicating that the threat of apprehension associated with RBT did not appear to greatly influence their offending behaviour. Rather, a higher frequency of alcohol consumption, combined with more favourable attitudes to drink driving and lower levels of support for RBT, appeared to be associated with offending behaviour.

**Conclusions.** While the results confirm the high levels of exposure to RBT achieved in Queensland, the direct impact of recent exposure on drink driving behaviour appears less important than other factors such as alcohol consumption and attitudes to drink driving and RBT. Further research is required to better understand how recent and lifetime exposure to RBT impacts on motorists' perceived risk of apprehension and subsequent drink driving behaviour.

**KEY WORDS:** Impaired driving; Random Breath Testing (RBT), Law enforcement; Deterrence; Alcohol use, Traffic safety

### INTRODUCTION

#### The Practice of Random Breath Testing

Drink driving continues to represent a serious problem in motorised countries, as alcohol-related crashes result in substantial injuries, fatalities, and property damage. As a result, significant resources have been committed to educating the public about the dangers of drink driving as well as developing methods to detect and deter offending motorists. Within Australia, one countermeasure that has remained a core component of law enforcement attempts to both detect and deter drink drivers for over 20 years has been the practice of randomly breath testing motorists. The legislation underpinning RBT allows the police to pull over and breath test a driver at any time, without having observed any aberrant behaviour. Since its inception in Victoria in 1976, the practice of RBT has continually been remodelled and intensified to reflect an ongoing commitment to reduce alcohol-related fatalities in Australia. Currently, the Queensland Police Service (QPS) has been conducting the equivalent of one (preliminary) breath test for every licensed driver per year. As a result, in the financial years 2001-2002 and 2002-2003, the QPS conducted over 2.6 million breath tests (QPS, 2002; 2003).

One of the main motives for testing such high levels of motorists can be found within the principles of *specific* and *general* deterrence. In regards to *specific* deterrence, it is commonly accepted that being apprehended and punished deters offenders from drinking and driving again in the future (Homel, 1988). Thus, a primary aim of RBT is to efficiently apprehend a considerable proportion of drinking drivers, thus providing a strong specific deterrent effect against future offending behaviours. Secondly, RBT has the potential to also provide a *general* deterrent effect as motorists observe and/or experience random breath testing, which theoretically should heighten the perceived risk of

apprehension and punishment, thus once again deterring motorists from drink driving (Watson et al., 1994). To maximise this general deterrent threat, RBT is typically conducted in a highly visible mode in Australia. Taken together, these two deterrent mechanisms have the potential to significantly reduce the level of drink driving on public roads, which has been demonstrated through a number of reviews highlighted below.

### **The Effectiveness of RBT**

Since the introduction of RBT, a growing body of research has indicated that this law enforcement activity produces a positive effect on road safety through reducing the prevalence of total crashes and alcohol-related crashes (Arthurson, 1985; Cavallo & Cameron, 1992; Cavallo & Drummond, 1993; Homel, 1993; Homel, Carseldine & Kearns, 1988; Queensland Department of Transport, 1987). Evaluations focusing on the impact of RBT programs have reported a number of beneficial effects such as: 22% - 42% reduction in overall fatal crashes (Arthurson, 1985; Carseldine, 1988; Homel et al., 1988; Watson et al., 1994), 15% - 24% reduction in serious evening crashes (Cameron, Diamantopoulou & Dyte, 1997; Cameron & Strang, 1982; Cameron, Cavallo & Gilbert, 1992), and 23.9% reduction in serious casualty crashes during weekends (Armour et al., 1985). Evaluations conducted for the various state programs have demonstrated that states with intensive RBT programs, characterised by highly visible, sustained operations supported with publicity have been the most successful (Homel, 1988). Generally, successful programs are defined by reductions in the number of fatal crashes, decreases in the number of drivers or riders killed with high BAC levels and decreases in community acceptability of drink driving (Elliott, 1992). With regard to public perceptions and attitudes related to RBT, a growing body of research has revealed that the majority of motorists (in excess of 75%) have traditionally supported RBT and agree with the continuation of this law enforcement activity (Beel & Stockwell, 1995; Span, 1995).

However, it is also noted that the relative effectiveness of RBT often fluctuates over time (Cameron & Strang, 1982; Homel, 1988; Queensland Transport, 1987), and a number of factors have been identified that influence the impact of RBT as well as general drink driving levels e.g., law enforcement characteristics, economic conditions & level of supporting education. Essentially, the capacity of RBT to deter motorists from drink driving is heavily dependent upon promoting the perception that offenders will most likely be apprehended for the offence. However, researchers have noted that it is a difficult task to continually sustain the deterrent impact of drink driving countermeasures (Baum, 1999; Homel, 1988; Watson et al., 1994), as a growing body of research has demonstrated that individuals' perceptions fluctuate over time (Green, 1989; Homel, 1988; Minor & Harry, 1982; Saltzman et al., 1982). At best, deterrence may be viewed as an unstable, dynamic process that requires continual effort such as exposure to RBT and media campaigns to ensure motorists are continually deterred from drink and drive (Homel, 1988). As a result, there is an ongoing need to investigate general motorists' attitudes towards RBT and perceptions relating to apprehension, in order to determine what impact current RBT efforts have on individuals' decisions to drink and drive.

### **Perceptions of Apprehension**

Within the Classical Deterrence Doctrine, researchers have generally asserted that the most powerful deterrent effects on offending behaviour are produced by the perceived threat of the certainty of apprehension (Decker, Wright & Logie, 1993; Homel, 1988; Jones & Lacey, 1991; Nagin & Pogarsky, 2001; Paternoster et al., 1982). In regards to RBT, a number of studies have endeavoured to determine what effect experiencing and observing RBT has on motorists' perceived risk of apprehension and the subsequent effect on drink driving deterrence (Baum, 1999; Grieve & Nucifora, 1992; Homel, 1988).

Firstly, in regards to awareness of RBT activity, research has generally demonstrated that Australian motorists have a high level of awareness of RBT activity and recognise the value of the practice for reducing the road toll (Cairney & Carseldine, 1989; Cashmore & Vignes, 1984; Elliott & Shanahan, 1983; Grieve & Nucifora, 1992; Span, 1995). However, it is noted that having a high level of awareness of RBT activity may not be sufficient to ensure motorists are adequately deterred from drink driving. In regards to the impact of RBT on the perceived risk of apprehension, the findings have been more mixed. For example, Homel (1988) conducted a widely-cited study that examined 785 motorists' perceptions of apprehension certainty after the implementation of RBT, and reported that RBT did not appear to have a direct effect on perceptions of arrest certainty, but exposure to RBT increased the deterrent effect of "fearing apprehension" which subsequently was proposed to

influence drink driving behaviours. Grieve & Nucifora (1992) also investigated motorists' perceptions of RBT, revealing that the experience of being tested and apprehended for drink driving are primary motivating factors for avoiding the offence. Conversely, Baum (1999) examined the deterrent effects of RBT in rural Queensland on 430 motorists and reported that the perceived threat of punishment did not significantly deter drink driving behaviour. A similar finding was also reported by Loxley & Smith (1991) who failed to find a relationship between road block testing and perceptions of arrest certainty.

These findings are consistent with the majority of research that has reported mixed results regarding the relationship between certainty of apprehension and drink driving (Grosvenor, Toomey & Wagenaar, 1999; Nagin & Pograsky, 2001; Piquero & Paternoster, 1998; Piquero & Pogarsky, 2002; Baum, 1999; Green, 1989; Hedlund & McCartt, 2002; Loxley & Smith, 1991). While it appears theoretically and practically important to raise motorists' perceptions regarding the risk of being apprehended through RBT practices, identifying and implementing the appropriate level of enforcement and determining what effect such enforcement has on motorists' drink driving behaviours remains a continual challenge. As highlighted above, the Queensland Police Service is sustaining a high level of RBT activity, as the number of breath tests conducted each year is the equivalent of one test per licensed driver, which represents the highest rate of breath testing by any police jurisdiction in Australia. In addition to the considerable strain such an initiative places on police resources, questions remain regarding the deterrent effect this strategy has on road users. As a result, the present study aims to provide a profile of Queensland motorists' attitudes towards, and perceptions of, current RBT enforcement practices, and to identify what deterrent impact such perceptions have on self-reported drink driving behaviours. The present research formed part of a larger review of RBT in Queensland. This study focuses on three main research questions:

- (a) What are motorists' current attitudes towards drink driving and random breath testing?
- (b) What links exist between exposure to RBT and motorists' perceived risk of apprehension?
- (c) What effect does the current implementation of RBT have on self-reported drink driving behaviours?

## METHOD

### Participants

A total of 780 individuals volunteered to participate in this survey-based study. There were 341 (43.7%) males and 439 (56.3%) females. Participants were located throughout Queensland with the major areas being: Brisbane (17.4%), Sunshine Coast/North Brisbane (22.4%), Gold Coast (6.8%), Darling Downs (15.1%), Wide Bay/Burnett (18.5%), Northern/Central (18.8%) and other (0.9%).

There was considerable variation in participants' age from 17-60, with the largest frequency between 30-49 yrs. In summary, the majority were employed (83%), in a range of blue collar (39%) and white collar occupations (40%), with considerable variability in their level of education; junior (30%), senior (23.3%), bachelor degree (14%) and trades/apprenticeship (7%). Only a relatively small proportion of the sample (9%,  $n = 70$ ) reported being convicted of a drink driving offence. Specifically, 51 participants reported one conviction, 13 reported two convictions, 3 reported 3 convictions, and 1 person each reported 4, 6, and 8 convictions.

### Materials

A survey was developed to assess general motorists' attitudes towards, and experiences of, random breath testing in Queensland and their associated drink driving behaviours. The survey consisted of four main sections that assessed: (a) socio-demographic characteristics (10 questions), (b) drinking and drink driving behaviours (20 questions) (c) drink driving attitudes (20 questions) and (d) experiences and perceptions of RBT (15 questions). Participants were required to respond on five point Likert-based scales (1 = strongly disagree, 3 = unsure, 5 = strongly agree), and dichotomous measures (Yes = 1 & No = 2). Examples of items include: "Everybody drinks and drives once and awhile", "Drink drivers should lose their licence", and "Drink driving is a major contributor to road crashes".

### Procedure

A total of 5525 possible respondents within Queensland were contacted over a period of 10 weeks between June and August 2002. A team of trained data collectors administered the survey via telephone. From an initial possible sample of all listed telephone numbers in Queensland, a random sample of numbers was selected with districts weighted according to regional population figures obtained from the Australian Bureau of Statistics. Despite the use of call back procedures, a relatively low response rate of 14% for all dialled numbers (including answered and unanswered numbers) necessitated the initial weighted sample of listed telephone numbers to be supplemented with additional sets of numbers in order for regional targets to be met.

## RESULTS

### Self-reported Drinking and Drink Driving Behaviours

Firstly, an examination was undertaken to determine the current sample's drinking and drink driving behaviours. In regards to drinking behaviour, Table 1 indicates that 569 of the 780 respondents described themselves as drinkers (73%), while 211 were not drinking at the time of the interview. Closer examination revealed that approximately two thirds of the sample reported drinking weekly or less, while one third were drinking two or more times per week. The most common place to consume alcohol was at home (54%) which was followed by pubs, clubs and restaurants (11.4%). For drink driving, participants were asked whether they had driven when they thought they were over the legal limit in the last six months. The majority ( $n = 523$ , 67%) reported they had not driven when they thought they were over the limit, although it is noted that 211 of the sample were non-drinkers. Of the 569 drinking participants, 37% ( $n = 210$ ) reported drink driving once, 5% ( $n = 28$ ) reported drink driving twice, and a smaller proportion indicated drink driving between 6 and 24 times. In total, 257 participants reported drink driving at least once in the last six months prior to the survey, with the most common reason provided for the offence to be either "feeling OK", "only needing to travel a short distance", "believing they were just over the legal limit" or "they did not want to leave their car at the premise". The frequency of drink driving is similar to previous research that has reported a considerable proportion of motorists offend while avoiding detection, despite the implementation of RBT (Berger, et al., 1990; Cairney & Carseldine, 1989; Homel, 1988).

<INSERT TABLE 1 HERE>

### **Drink Driving and Random Breath Testing Attitudes**

Despite the considerable proportion of the sample that reported drink driving in the last six months prior to completing the survey, the majority reported positive attitudes towards RBT and believed drink driving to be a serious offence ( $n = 558, 71\%$ ). In regards to detection practices, almost all respondents ( $n = 766, 98.2\%$ ) agreed with the practice of randomly breath testing motorists. Complementing this belief, the majority of the sample also believed that RBT should be implemented at a combination of roadside stops and by patrolling back streets in order to apprehend drink drivers ( $52.8\%, n = 412$ ), and that RBT should be implemented at a variety of locations for short periods of time ( $56.8\%, n = 443$ ).

Participants also completed a 14-item section of the questionnaire (responding on a 5 point Likert scale) that focused on general attitudes towards drink driving and RBT. Confirming the above findings, the majority of the sample reported positive attitudes towards the practice of RBT ( $M$  score = 4.11,  $SD = .34$ ) and reported drink driving to be an unacceptable behaviour ( $M$  score = 3.92,  $SD = .49$ ). However, it is noted that the latter finding is in contrast to some of the “drinking” participants’ general admittance of drink driving in the recent past, which will be examined in the following section that considers such attitudes in relation to subsequent drinking and drink driving behaviours.

A closer examination involving a comparison between those who reported drinking and those who abstained, revealed that non-drinkers reported higher approval rates for the practice of RBT [ $t(778) = 4.06, p < .001$ ] as well as higher disapproval for drink driving [ $t(778) = 4.29, p < .001$ ]. In addition, individuals who reported driving when they thought they were over the limit in the last 6 months prior to the survey also indicated lower approval rates for RBT compared to those who did not [ $t(778) = 2.55, p = .011$ ] as well as lower concerns about drink driving [ $t(778) = 2.39, p = .017$ ]. Importantly, a higher frequency of alcohol consumption was positively associated with drink driving behaviours ( $r = .24, p < .01$ ) and negatively associated with attitudes to RBT and drink driving ( $r = -.25, p < .01$ ) (see Appendix A). The results indicate that motorists who drink more frequently, and thus may arguably be at a greater risk of drink driving, also report lower approval rates for RBT and lower concerns regarding the risks associated with drink driving.

### **Exposure to RBT**

A positive finding was that a large proportion of the sample reported observing police breath-testing drivers in the six months prior to the survey ( $n = 587, 75.30\%$ ), with respondents reporting seeing an RBT unit once ( $n = 90, 15.33\%$ ), twice ( $n = 128, 21.81\%$ ) or three to six times ( $n = 261, 44.46\%$ ). These results not only support the QPS’s current efforts to conduct a high level of RBT, but also indicate higher testing levels than previous Australian research (Cairney & Carseldine, 1989; Elliott & Shanahan, 1989; Grieve & Nucifora, 1992). Furthermore, in contrast to previous research that has indicated young drivers are most likely to observe RBT because they drive more at high risk times (Homel, 1983), no significant differences were identified between age groups in the current sample.

Another encouraging finding was that almost half the sample had been breath tested during the previous six months ( $n = 323, 41.4\%$ ), with the majority of these respondents being tested once ( $n = 152, 47\%$ ), twice ( $n = 94, 29.10\%$ ) or three times ( $n = 40, 12.38\%$ ). Importantly, the bulk of the sample reported being breath tested when they were stopped ( $n = 307, 95\%$ ), which appears crucial to increasing deterrent perceptions regarding the certainty of detection. The frequency of those observing and experiencing breath testing is presented in Table 2.

<INSERT TABLE 2 HERE>

### **The Perceived Risk of Apprehension**

Despite the high proportion of the sample who were recently breath tested, examination of respondents’ perceptions regarding the likelihood of being apprehended for drink driving revealed that, in general, the sample were either unsure of the likelihood of being caught by the police ( $39.9\%$ ), or believed it was unlikely ( $26\%$ ), or extremely unlikely they would be apprehended ( $8.7\%$ ). However, it is noted that this finding may be influenced by the proportion of respondents who reported never drinking alcohol ( $27\%$ ) as well as never drink driving ( $68\%$ ). Further analysis that compared drinkers from non-drinkers and drink drivers from non-drink drivers revealed similar results as the largest percentage for all groups reported being unsure about the likelihood of apprehension while over the legal limit.

However, in regards to observing RBT in the last six months, individuals who had seen RBT prior to the survey reported a significantly higher perceived risk of apprehension compared to those who had not observed RBT,  $t(564) = 2.97, p = .03$ . It should be noted, though, that this difference was relatively small and may lack practical significance (e.g.,  $M = 3.01$  vs.  $M = 2.68$ ). Interestingly, there were no differences in the perceived risk of apprehension between those who had actually been stopped and tested, compared to those who had been stopped but not tested ( $M = 3.06$  vs.  $M = 2.90$ ). Similarly, there were no differences in perceptions of apprehension between individuals who reported changing their driving route or driving time to avoid detection compared to those who did not change their driving behaviours ( $M = 2.94$  vs.  $M = 2.95$ ). Further analyses revealed that there were no significant differences in the perceived risk of apprehension between those living in rural vs. metropolitan areas ( $M = 2.83$  vs.  $M = 3.08$ ), nor a significant relationship between these perceptions and either the frequency of observing RBT ( $r = .08, p > .05$ ) or being breath tested ( $r = .07, p > .05$ ). Finally, a relationship was not found between the perceived risk of apprehension for drink driving and the number of actual self-reported drink driving events in the six months prior to the survey ( $r = .02, p > .05$ ). That is, those who reported the highest frequency of drink driving did not necessarily report a lower perceived risk of apprehension. This counterintuitive result will be explored further in the discussion.

### Impact of Random Breath Testing on Offending Behaviour

The final series of analyses involved examining the impact that RBT had on participants' self-reported drinking driving behaviours. Firstly, only a small proportion of participants reported changing their driving *route* to avoid detection in the last six months ( $n = 49, 8.61\%$ ) and only a small percentage reported changing their driving *time* to avoid RBT in the last six months (2.64%,  $n = 15$ ). Furthermore, there were no discernible differences between those who had been tested compared to individuals who had not, in terms of implementing strategies to avoid drink driving such as; taking a taxi, not drinking alcohol or taking public transport. This is in contrast to previous research that has indicated those exposed to RBT are more likely to modify their drinking behaviours, although this group are also more likely to be at risk of drink driving (Homel, 1988).

Finally, an examination was undertaken to investigate the factors associated with drink driving behaviour. Given the low numbers of participants actually convicted of a drink driving offence, this analysis focused on the participants' recent self-reported drink driving (i.e., whether the participants admitted driving in the last six months when they thought they may have been over the legal limit). A logistic regression analysis was performed to examine the contribution of a number of different variables to this outcome including: alcohol consumption; drinking location (home, friend's house, restaurants, pubs/clubs); perceived risk of apprehension; observing RBT in the six months prior to the survey; being breath tested in the prior six months; and attitudes towards drink driving and RBT (see Table 3). It should be noted that only participants who reported drinking were included in the analysis.

<INSERT TABLE 3 HERE>

Table 3 reports the variables in the model, the regression coefficients, as well as the Wald and odds ratio values. Collectively, the model was significant with a chi-square statistic of  $\chi^2(8, N = 780) = 151.05, p < .01$ . The significant predictors of drink driving behaviours were identified as: (a) drinking more frequently, (b) drinking more frequently at restaurants, (d) drinking more frequently at pubs and clubs, and (e) attitudes to drink driving and RBT. In contrast, observing RBT or being randomly breath tested in the last six months prior to the survey were not significant predictors of drink driving behaviours in the current model. Several other regression models were estimated to determine the sensitivity of the results.

The inclusion of the following factors: area of residence, deterrence factors such as injuring someone or being punished, or socio-demographic characteristics, did not increase the predictive value of the model. The results confirm that: (a) individuals who drink more frequently are at a greater risk of drink driving, especially when they drink at locations other than their home, and (b) favourable attitudes to drink driving and a lower acceptance for RBT appear linked to the offending behaviour.

### DISCUSSION

The present research aimed to provide a profile of current attitudes, perceptions and behaviours relating towards drink driving and the operation of random breath testing in the state of Queensland.

More specifically, the study aimed to determine motorists' knowledge, attitudes and beliefs about RBT and the subsequent impact on drink driving behaviours.

### **RBT Exposure**

The majority of the sample reported a high level of exposure to RBT, in terms of the frequency of observing RBT operations, being breath-tested and generally seeing anti-drink driving advertising campaigns. This finding supports the QPS's current strong commitment to RBT, since a larger percentage of participants reported observing RBT compared to previous research (Grieve & Nucifora, 1992). In fact, almost half the sample reported observing RBT activity between three and six times during the last six months before the implementation of the survey. In addition, a larger percentage (95%) of participants reported being breath tested when they did come in contact with RBT activity, compared to earlier research that has indicated only 75% of motorists were breath tested (Elliott & Shanahan, 1993). From a deterrence theory perspective, the findings provide a positive indication of the frequency with which motorists are observing and/or experiencing police enforcement efforts to reduce the prevalence of drink driving on public roads. In addition, a positive finding of the study was that motorists who had observed RBT activity reported a higher perceived risk of apprehension for drink driving compared to motorists who had not seen RBT in the last six months. However, given that no apparent relationship was evident between observing or experiencing RBT activity and self-reported drink driving behaviour, questions remain regarding the impact of RBT on motorists' decisions to drink and drive.

### **RBT Attitudes**

Another encouraging finding of the research was that the majority of participants reported positive attitudes towards RBT and believed drink driving to be a serious offence. The findings support previous research that has indicated a considerable proportion of motorists recognise the value of RBT as a drink driving countermeasure (Cairney & Carseldine, 1989; Cashmore & Vignes, 1984; Elliott & Shanahan, 1983; Grieve & Nucifora, 1992; Span, 1995) and realise that drink driving is an inappropriate behaviour (Berger et al., 1990; Loxley & Smith, 1991). In contrast to many participants' self-reported drink driving behaviours, the sample as a whole indicated that drink driving was an unacceptable offence. As a result, there appears to be some discrepancies between motorists' attitudes and their subsequent behaviours, and therefore, clear links were not identified between attitudes and behaviours in relation to drink driving. This finding is consistent with social psychological research that indicates attitudes are only one of a plethora of factors influencing intentions and subsequent behaviours (Thurman et al., 1993).

However, in regards to attitudes towards RBT and associated behaviours, a closer examination revealed that individuals who drank alcohol reported lower levels of approval for RBT compared to non drinkers. A similar difference was identified for individuals who reported drink driving in the last six months compared to those who did not offend. While this finding does not necessarily indicate that RBT produces a clear deterrent effect on drink driving behaviour, it suggests that drinking and drink driving motorists are aware of police enforcement efforts to apprehend offending motorists. Furthermore, the results indicate that alcohol consumption may well influence attitudes towards RBT, as this relationship between attitudes and behaviour was consistent across participants.

### **Perceptions of Apprehension Certainty and Drink Driving**

A central aim of RBT is to increase perceptions of the risk of apprehension, thus providing a general deterrent to the motoring population to avoid drink driving. Consistent with this aim, those respondents who had seen RBT operating in the six months prior to the survey reported a significantly higher perceived risk of apprehension than those who had not seen RBT. Interestingly, there were no significant differences in perceived risk of apprehension between those respondents who reported adopting tactics to avoid RBT (e.g., changing driving route and time) and those who did not engage in such behaviours. This may suggest that the respondents adopting avoidance tactics believed they were sufficiently effective to reduce their risk of apprehension to similar levels of other drivers.

Surprisingly, however, no significant bivariate relationship was identified between the participants' perceived risk of apprehension and their self-reported drink driving behaviour during the preceding six months. Moreover, neither the perceived risk of apprehension nor exposure to RBT (either seeing it or being tested) proved to be significant predictors of self-reported drink driving. There are a number of possible reasons for this counterintuitive finding. Firstly, the findings support previous research that has indicated perceptions regarding the risk of apprehension for drink driving may not have a



significant deterrent effect on actual offending behaviours (Baum, 1999; Green, 1989; Homel, 1988). Secondly, the deterrent impact of perceived risk may not be stable, but fluctuate considerably over time (Green, 1989; Homel, 1988; Minor & Harry, 1982; Saltzman et al., 1982), which may contribute to the present findings. Thirdly, perceptions regarding risk of apprehension may be more strongly influenced by factors not considered within the present research, such as peers' drink driving behaviour, personality characteristics and other environmental/situational factors. Fourthly, the historically high levels of breath testing conducted in Queensland results in a relatively large proportion of the population being tested over time (often on multiple occasions). This may have served to reduce the predictive sensitivity of the exposure variable used in this research. In other words, it may reduce the likelihood of discerning differences in the perceptions of those motorists who had recently been exposed to, or had witnessed, RBT in operation, compared to those who hadn't been exposed. Therefore, future research may benefit from measuring lifetime exposure to RBT for populations that regularly come in contact with, or observe, high levels of enforcement activities. Taken together, the results indicate that observing RBT on public roads may be associated with slight increases in respondents' perceptions regarding the certainty of apprehension, however actually being stopped and tested does not necessarily ensure that drivers will perceive there to be a strong chance of being apprehended if they do decide to drink and drive.

Of concern was that a considerable proportion of the sample believed it was generally possible to avoid RBT detection, but did not acknowledge attempting to engage in such practices. At some level this finding also appears counterintuitive as a large percentage reported both drink driving (at least once) and observing RBT on a regular basis. Considering the small percentage of the sample who reported being apprehended and convicted of a drink driving offence, it appears likely that some motorists avoid detection when they are drink driving. Other research within the drink driving field has highlighted the relationship between punishment avoidance and offending behaviour, particularly in cases where the actual probability of detection remains low (Freeman et al., 2006; Piquero & Paternoster, 1998).

In summary, further research is required to determine why motorists believe the probability of detection remains low (despite reporting that they regularly encounter RBT operations) and what practices/mechanisms need to be implemented in order to increase: (a) perceptions regarding the certainty of apprehension and (b) increase detection rates for drink driving offences. At present it appears that RBT may provide some deterrent influence against drink driving, but many continue to engage in the offence regardless of the risk of apprehension. Alternatively, some individuals may not possess a high level of insight into what motivates or deters their behaviour. Therefore, while the present findings suggest that exposure to enforcement *per se* may not greatly affect self-reported behaviour, it is possible that such enforcement practices impact on individuals in ways that they are unaware of and hence difficult to measure. In addition, it may yet be proven that motorists are still being infrequently tested when compared with how often they drive, and also, how often they drink and drive.

### **Self-reported Drink Driving**

Finally, an examination undertaken to investigate factors associated with self-reported drink driving behaviours identified a number of key issues associated with the offence. Firstly, a higher frequency of alcohol consumption, including drinking more frequently at destinations such as restaurants, pubs and clubs, was significantly associated with drink driving. This finding once again confirms that higher levels of alcohol consumption appear to be associated with self-reported drink driving behaviour, which supports the contention that prevalence, regularity and quantity of consumption are critical features of drink driving behaviours. Secondly, attitudes to drink driving and RBT also proved to be a significant predictor of the offending behaviour. That is, those participants who were more likely to report drink driving in the last six months were also more likely to believe that drink driving is not a serious offence and that other community members engage in the behaviour, and less likely to support RBT. As such, it may be the case that attitudes and behaviours of peers and/or other community members may provide social reinforcement and/or punishment, which may ultimately influence risk perceptions regarding RBT apprehension. Taken together, both attitudes and behaviours (at some level) appear to influence decisions to drink and drive.

Despite these results, it is recognised that a number of factors that may influence the likelihood and prevalence of drink driving were not assessed in the present research, as a plethora of individual and environmental factors have been proposed to influence decisions to drink and drive (Thurman,

Jackson & Zhao, 1993). As a result, some of these factors may account for the prevalence of drink driving in the current sample, as well as some of the counter-intuitive findings. Some additional methodological limitations associated with the program of research should be borne in mind when interpreting the findings. Firstly, the accuracy of the self-reported data remains susceptible to self-reporting bias as some disparity may exist between attitudes and behaviours. Secondly, the scales developed for the present research requires further validation and amendment. Thirdly, the response rate was relatively low and, while the underlying reasons for this remain unclear, it should be borne in mind when generalising the results to the broader driving population.

## CONCLUSIONS

Taken together, the research indicates that Queensland motorists are coming into regular contact with RBT, recognise the value of RBT as a road safety initiative, and believe drink driving to be a serious offence. However, almost half of the sample who reported drinking also admitted driving on at least one occasion in the last six months when they thought they may have been over the legal alcohol limit. In addition, individuals who consume high levels of alcohol, especially at places other than their own residence, are at the greatest risk of drink driving and report negative attitudes towards RBT. The findings of this study suggest that the decision to drink and drive is influenced by both drinking behaviour and attitudes towards drink driving and RBT. Therefore, while RBT continues to be an extremely effective initiative to reduce drink driving and alcohol related crashes, a future challenge remains to increase motorists' perceived risk of apprehension and detect greater numbers of drinking drivers. This may yet be achieved through a number of endeavours, including: a public relaunching of RBT and/or wide spread public education campaigns, ensuring that all drivers intercepted by the police are breath tested, and targeting RBT deployment at high risk times and places, based on relevant crash and offence data.

While the primary aim of the present research was not to provide a comprehensive investigation into the factors that influence motorists' decisions to drink and drive, further examination of the social and physical environment that maintains drink driving behaviours can only complement the development of countermeasures that effectively prevent or reduce drink driving. In addition, it appears that further research is required into the relationship between motorists' level of exposure to RBT (observed and experienced), and the subsequent impact such exposure has on perceptions of certainty, as well as the identification of factors that increase and decrease such perceptions. Taken together, randomly testing high levels of motorists appears to be only one necessary component of a larger framework to both detect and deter drinking drivers.

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**Table 1. Self-reported Drinking and Driving Behaviours**

Drinking Frequency	<i>N</i>	%	Location	<i>N</i>	%
Never	211	28.3	Never	221	28.3
Monthly or Less	144	18.4	Home	421	54.0
Two-four times per month	133	17.0	Pub/club/Restaurant	89	11.4
Two-three times per week	134	17.1	Friends	37	4.8
Four or more times per week	158	20.2	Other	12	1.5
Drink Driving Frequency	<i>N</i>	%	Reason for Drink Driving	<i>N</i>	%
Never	523	67.0	Felt OK	32	12.5
Once	210	27.0	Just over	15	5.8
Twice	28	3.5	Short Distance	22	8.5
Three to Eight times	14	1.8	Not leave car	16	6.2
More than Eight Times	5	.7	Other <sup>1</sup>	172	67.0

1. A considerable proportion did not provide a reason for their most recent drink driving behaviour

**Table 2. Experiences and Observations of Random Breath Testing in the Six Months Prior to the Survey**

Observed RBT	<i>N</i>	%	Tested by RBT	<i>N</i>	%
Yes	587	75.3	Yes	323	41.4
No	189	24.2	No	454	58.2
Unsure	4	0.5	Unsure	3	0.4
Frequency of Observation	<i>N</i>	%	Frequency of Testing	<i>N</i>	%
Never	222	28.5	Never	459	58.8
1-3 times	311	39.8	1-3 times	286	36.7
4-6 times	168	21.5	4-6 times	29	3.7
7-10 times	38	4.8	7-10 times	3	0.4
>10 times	41	5.4	>10 times	3	0.4

**Table 3: Logistic Regression Analysis with Self-reported Drink Driving Behaviour as the Dependent Variable**

	B	SE	Wald	<i>p</i>	Exp (B)	95% C.I. Exp (B) Lower	Upper
Alcohol Consumption	.41**	.14	9.23	.002	1.52	1.16	1.98
Drinking at home	-.00	.11	.00	.965	1.00	.80	1.24
Drink at friend's house	-.08	.11	.51	.474	.92	.75	1.15
Drinking at restaurants	.31*	.13	6.14	.013	1.36	1.07	1.74
Drinking at pubs/clubs	.45***	.10	19.80	.000	1.57	1.29	1.91
Risk of Apprehension	.11	.18	1.19	.290	1.98	.92	1.52
Observed RBT	-.06	.23	.07	.793	.94	.60	1.48
Breath tested	.25	.20	1.65	.199	1.29	.88	1.89
DD & RBT attitudes	-.31*	.14	5.13	.023	.73	.56	.96
Block Chi-Square 151.05 (df = 9)							

Note. DD = Drink Driving; \*  $p < .05$ , \*\* $p < .01$ , \*\*\*  $p < .001$