FEDERAL OFFICE OF ROAD SAFETY

DOCUMENT RETRIEVAL INFORMATION

Report No.	Date	Pages	ISBN	ISSN
CR 152	APRIL 1995	64	0 642 51245 0	0810-770x

Title and Subtitle

The Contribution of Beer Consumption to Drink Driving

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Abstract

The main objective of this project was to estimate the proportion of drink-drivers on the road in Victoria who had consumed beer recently. In addition, the data collected was analysed in a way that allowed the role of beer to be estimated for crash-involved drink-drivers. Data was obtained from reports completed by Breathalyzer operators from drink-drivers apprehended at random breath test stations or through random routine Police checks. It was estimated that, during 1993/94, 64% of drink-drivers on the road had consumed beer-only prior to Police apprehension in Melbourne. Results for the rest of Victoria showed 78% of drivers had consumed beer only. Estimates obtained for crash-involved drink-drivers were similar to the on-road results, with 65% and 74% of drink-drivers consuming beer only prior to a crash in Melbourne and the rest of Victoria, respectively. Victorian alcohol sales patterns were compared to other Australian States and Territories and it was concluded that Victoria beer sales patterns were representative of the other jurisdictions.

Key Words :

Alcohol Consumption, Blood Alcohol Content, Beer Consumption, Drink-Driving.

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The Contribution of Beer Consumption to Drink-Driving

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ISBN 0 642 51245 0

ISSN 0810-770X

Produced by the Australian Government Publishing Service

EXECUTIVE SUMMARY

There is national interest in the proportion of drink-drivers who have consumed beer, for both drivers on the road generally and for those involved in crashes. This is because the National Road Safety Action Plan Implementation Taskforce has recommended that consideration be given to "increased differential excises and licence fees on alcohol products according to alcohol content to encourage the consumption of light alcohol products by drivers". The current focus is on encouraging a shift in consumption from full strength to low alcohol beer.

The main objective of this project was to estimate the proportion of drink-drivers on the road in Victoria who had consumed beer recently. The data was collected and analyzed in a way which also allowed the role of beer to be estimated for crash-involved drink-drivers. In addition, Victorian alcohol sales patterns, by type of beverage, were compared with those in other Australian States to assess the representativeness of Victorian alcohol consumption.

Two sources of data were used to obtain information on prior alcohol consumption of drink-drivers on the road. These were drink-drivers apprehended at random breath test stations and drink-drivers apprehended through random routine Police checks. In both cases, the ultimate source was a report completed by the Breathalyzer operator.

It was estimated that, during 1993/94, 64% of drink-drivers on the road had consumed beer only prior to Police apprehension in Melbourne, with 95% confidence limits on this estimate ranging from 61% to 67%. Amongst drink-driver apprehensions in the rest of Victoria, an estimated 78% of drivers had consumed beer only, with a confidence interval from 74% to 82%. An additional 13% of drink-drivers on the road in Melbourne and 11% in the rest of Victoria had consumed beer in combination with other alcoholic beverages.

Information on the relative risks of crash involvement of drink-drivers at specific blood alcohol levels, and in particular age groups, was used to weight the data obtained from drink-drivers on the road so that it provided estimates of the prior alcohol consumption of drink-drivers involved in crashes.

An estimated 65% of drivers involved in crashes had consumed beer only prior to drink-driving in Melbourne. In the rest of Victoria, the estimated proportion of crash-involved drink-drivers who had consumed beer only was 74%. Additionally, an estimated 13% of crash-involved drink-drivers in Melbourne and 11% in the rest of Victoria had consumed beer in combination with other alcohol.

Victorian beer sales patterns (and alcohol sales in general) were representative of other Australian States for the 1992/1993 financial year. Hence the estimates of the proportion of drink-drivers who consumed beer in Victoria were considered to reflect the drink-driving patterns of the rest of Australia.

ACKNOWLEDGMENTS

The authors wish to thank:

The Federal Office of Road Safety for sponsoring the project.

Margaret Smythe, Project Officer of the Federal Office of Road Safety, for her advice and comments on the project.

Inspector Mike Moloney and Senior Sergeant Ian Cairns from the Traffic Alcohol Section of the Victorian Police for their support of the project and advice on data sources.

David Dettmann, Acting Chief Superintendent of the Information Management Division, Victorian Police Headquarters for granting the approval to access Drink Driving Briefs of Evidence.

Lexis Pichler, Supervisor of the Accident Records Branch, St Kilda Road Police Complex, for her support and assistance during the collection of data from the Drink Driving Briefs of Evidence.

Lyn Bowland, Monash University Accident Research Centre, for the data collection.

Chris Brooks, Director of Research at the Federal Office of Road Safety, for providing the figures needed to establish the relative risks for drivers involved in crashes. All analyses in Section 3 are based on these weightings.

Finally, those who were prompt and helpful in providing data on Alcohol Sales for each State and Territory:

- Belinda Ho, Victorian Liquor Licensing Commission
- Mario Pinto, New South Wales Liquor Administration
- David Spencer, The Returns and Licensing Section of the ACT Revenue Office
- Chris M^{c}Swain, Office of Racing and Gaming, Western Australia
- Sohie Blair, Tasmanian State Revenue Office
- Chris Shaw, Northern Territory Liquor Commission and
- Michael Aitkin, Department of Tourism, Sport and Racing in Queensland.

1. INTRODUCTION

1.1 PROJECT BACKGROUND

The Federal Office of Road Safety (FORS) wishes to establish the contribution of beer consumption to drink-driving, in comparison with other alcohol beverages such as wine and spirits. There is interest in the proportion of drink-drivers who have consumed beer, for both drivers on the road generally and for those involved in crashes. This is because the National Road Safety Action Plan Implementation Taskforce has recommended that consideration be given to "increased differential excises and licence fees on alcohol products according to alcohol content to encourage the consumption of light alcohol products by drivers". The current focus is on encouraging a shift in consumption from full strength to low alcohol beer.

Previous relevant research has been reported by Holubowycz et al (1992). This study obtained the type of alcohol consumed from 102 drivers and motorcycle riders involved in crashes who were admitted to the Royal Adelaide Hospital between June 1985 and July 1987, and who also had a positive blood alcohol concentration. Re-analysis of their results shows that an estimated 76.5% had consumed predominantly beer, with the 95% confidence limits on this estimate ranging from 68.3% to 84.7%. Of those with an illegal BAC (above 0.08g/100ml), 74.4% had consumed beer with a confidence interval ranging between 64.7% and 84.1%. The report also found that women drivers were less likely to consume beer than men.

The limited number of cases included in the Holubowycz study constrain the reliability of these estimates and inhibit further study of the role of beer within sub-groups of the drink-driving population. In addition, the study does not provide direct information about drink-drivers on the road, many of whom *are not* involved in crashes.

1.2 GENERAL OBJECTIVES

The main objective of this project was to estimate the proportion of drink-drivers on the road in Victoria who had consumed beer recently. Sufficient numbers of cases were collected to allow the role of beer within key sub-groups such as age, sex, BAC level and the place of drinking to be estimated reliably. The data was collected and analyzed in a way which also allowed the role of beer to be estimated for crash-involved drink-drivers. In addition Victorian alcohol sales patterns, by type of beverage, were compared with those in other Australian States to assess the representativeness of Victorian alcohol consumption.

2. DRINK-DRIVERS ON THE ROAD

Two sources of data were used to obtain information on prior alcohol consumption of drink-drivers on the road. These were drink-drivers apprehended at random breath test (RBT) stations and drink-drivers apprehended through routine Police checks. In both cases, the ultimate source was a report completed by the Breathalyzer operator.

2.1 DRINK-DRIVERS APPREHENDED AT RBT STATIONS

Because of the unpredictable locations of RBT stations and the high volume of tests conducted in recent years in Victoria, drink-drivers apprehended at these stations could be considered to represent a *random* sample of drink-drivers on the road. Those drivers with a high preliminary breath test reading are required to take a Breathalyzer test with a certified operator, who also records information from the driver on a Summary Offence form. The form includes the driver's age and sex , the place and type of alcohol consumed and, of course, the evidentiary BAC reading. If the alcohol consumed was beer, the question asks also whether this was full strength or light beer. The forms for drivers with evidentiary BAC readings exceeding the Prescribed Concentration of Alcohol (0.05g/100ml for full licence holders; zero for probationary licensed drivers) was used.

Data Collection
The summary offence forms completed by the Victorian operators are held at the 'Accident Records Branch' of the Victoria Police. Each form is part of a drink-driving court brief which contains information about the offender's court appearance as well as a detailed police description of the drink-driving offence. The briefs most recently acquired by the Accident Records Branch were used. The data included all available 1994 offences as well as approximately half of the 1993 offences. Note however that due to the possible lateness or re-scheduling of some court trials about 7% of the drink-driving offences took place prior to 1993.

Two data sets on drink-driving offences were collected. The first set included drink-drivers who were apprehended at metropolitan Melbourne RBT stations. For this study a 'Melbourne' drink-driving offence is defined as one that occurred in any Melbourne Police District, not including District K (Geelong and surrounding areas). The second set consisted of drink-driving offences that occurred in the remaining Police Districts. This data set will be referred to as 'Rest of Victoria'.

2.2 DRINK-DRIVERS APPREHENDED THROUGH ROUTINE CHECKS

Not all the drink-driver apprehensions occurred at random breath testing stations. Both the Melbourne and Rest of Victoria samples included a number of drink-driving

offences that were the result of a routine police check. A routine police check has a police officer(s) apprehending a driver whilst on routine duty either randomly or for a specific reason. Only routine police checks that appeared to be random were included in the data collected. Those apprehensions that occurred because of suspicious driver behaviour, driver speeding, unroadworthy vehicle or crash-involvement were *not* included.

2.3 COMPARISON OF RBT AND ROUTINE APPREHENSIONS

The Melbourne sample consisted of 1015 drink-driver apprehensions whereas only 531 cases were sampled for the 'Rest of Victoria'- a ratio of approximately 2:1. The total evidentiary breath tests conducted in the Rest of Victoria from all sources of apprehension was considerably less than the Melbourne tests (the ratio of Melbourne to 'Rest of Victoria' evidentiary breath tests was approximately 5:3 for the 1993/1994 financial year).

Routine police checks comprised 17% of the Melbourne offences whereas the 'Rest of Victoria' sample had a greater percentage of 44%. The inclusion of the apparently random routine police checks with the RBT detected offences was particularly necessary in the 'Rest of Victoria' sample to provide reliable results. Without these routine checks the 'Rest of Victoria' sample would have been reduced to 296 cases, which would have been inadequate for the sub-group estimates.

Before the proportions of drink-drivers who consumed beer were estimated, a comparison of the RBT and Routine apprehensions was made to examine any differences in the drink-driver sexes, ages and BAC levels.

2.3.1 Melbourne Drink-Drivers

The proportion of drink-drivers by sex, age and BAC group, apprehended at Melbourne locations either through RBT or a Routine check are given in figures 2.3a, 2.3b and 2.3c.

No sex bias exists for the Melbourne sample as the number of male and female drink-drivers occur in the same proportions for both RBT and Routine tests - 86% of drink-drivers are male and 14% are female (figure 2.3a).

Figure 2.3b shows a bias toward younger driver apprehensions amongst the Routine police checks. Twenty-seven percent of the Routine drink-drivers were aged under 26 years whereas only 14% of the RBT apprehended drink-drivers were in the same age-group.

Figure 2.3a: Percentage of RBT and Routine Drink-Driver Offences for Melbourne by SEX

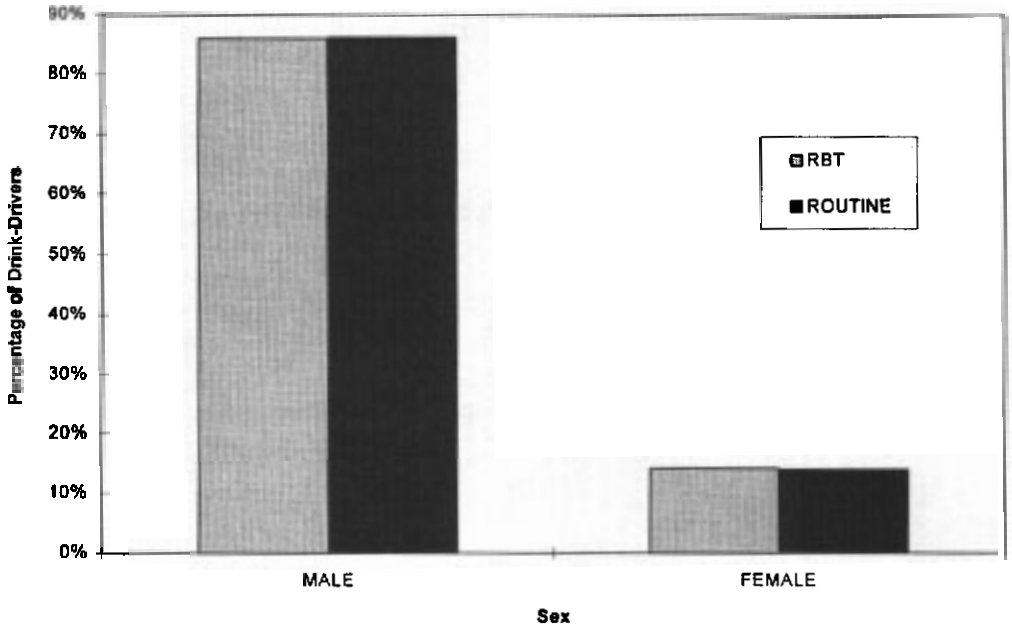
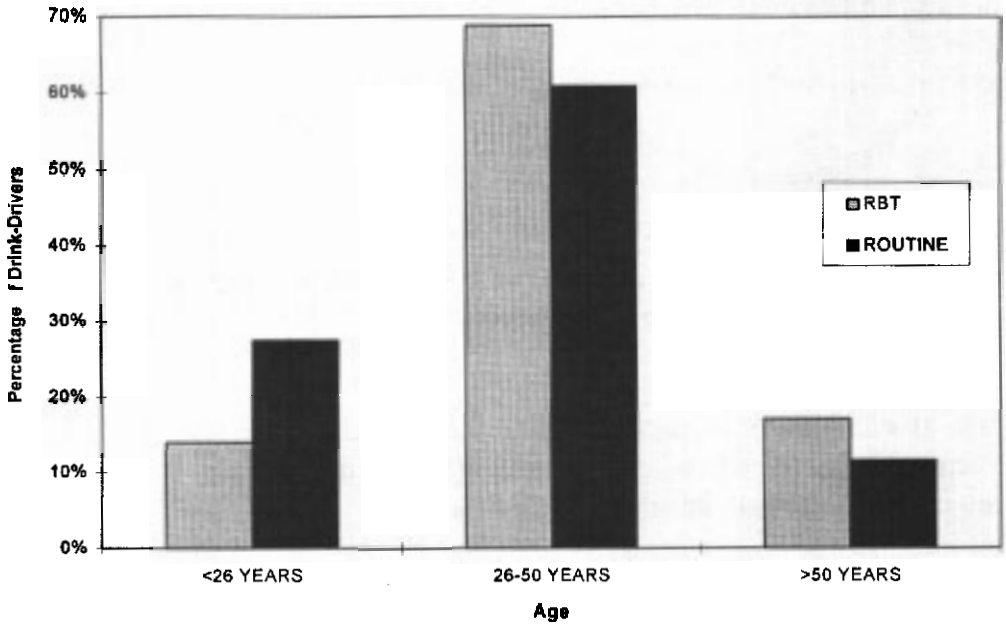
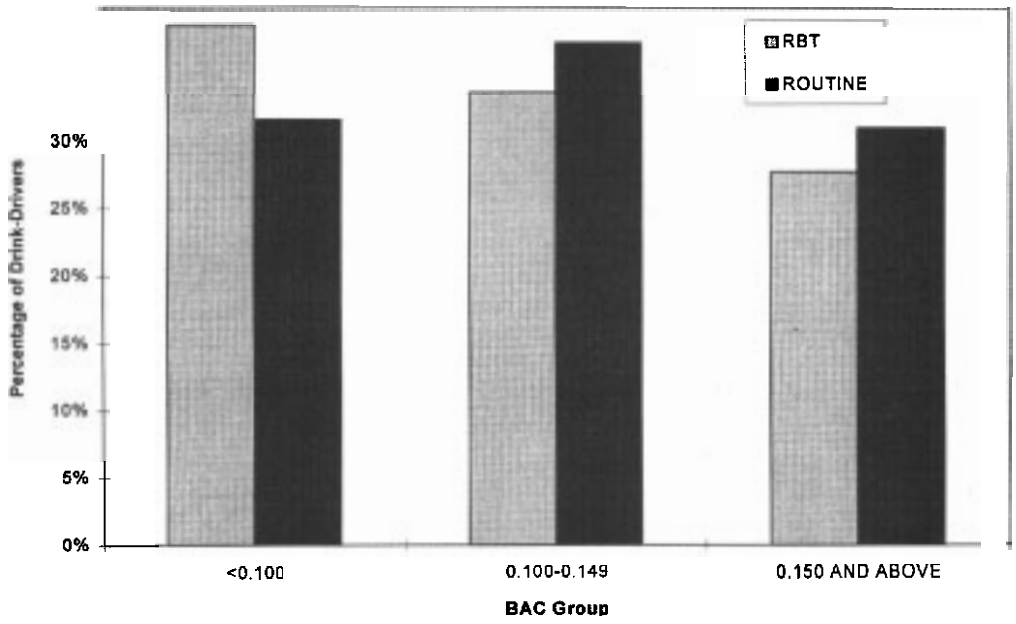


Figure 2.3b: Percentage of RBT and Routine Drink-Driver Offences for Melbourne by AGE



A slight bias towards drink-drivers with high BAC readings exists amongst the Routine tests. Thirty-one percent of the Routine drink-drivers had excessive BAC readings of 0.15g/100ml or more, whereas the percentage was somewhat less, 28%, for the RBT apprehended offences (figure 2.3c).

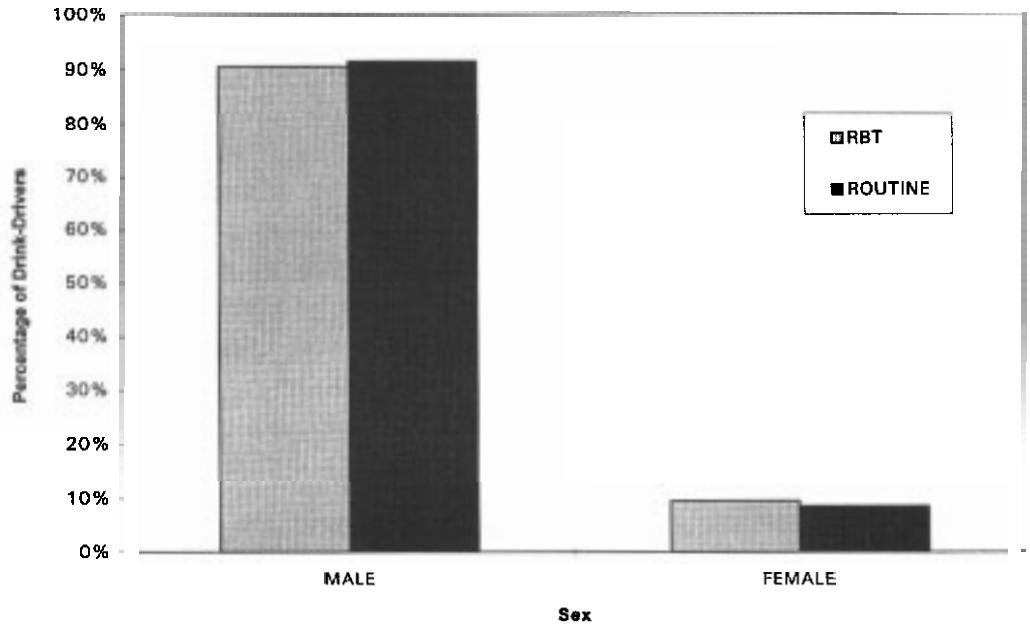
Figure 2.3c: Percentage of RBT and Routine Drink-Driver Offences for Melbourne by BAC



2.3.2 Drink-Drivers Apprehended in the Rest of Victoria

Similar sex, age and BAC level differences between the RBT and Routine apprehensions occurred in the Rest of Victoria as in Melbourne (figures 2.3d, 2.3e and 2.3f).

Figure 2.3d: Percentage of RBT and Routine Drink-Driver Offences for Rest of Victoria by SEX



There was no sex bias between RBT and Routine tests. Ninety-one percent of the drink-drivers were male for both types of apprehension for the Rest of Victoria (figure 2.3d).

Police on Routine checks were twice as likely to apprehend younger drivers than those at RBT stations. For the Rest of Victoria, 36% of the Routine drink-drivers were aged under 26 years, whereas the corresponding RBT proportion was only 18% (figure 2.3e).

Figure 2.3e: Percentage of RBT and Routine Drink-Driver Offences for Rest of Victoria by AGE

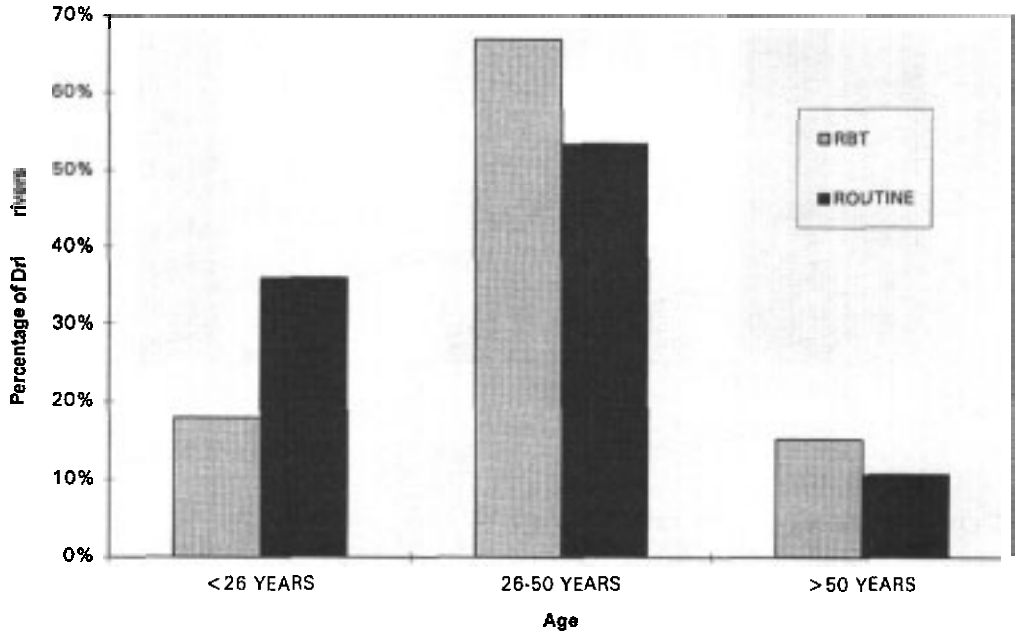
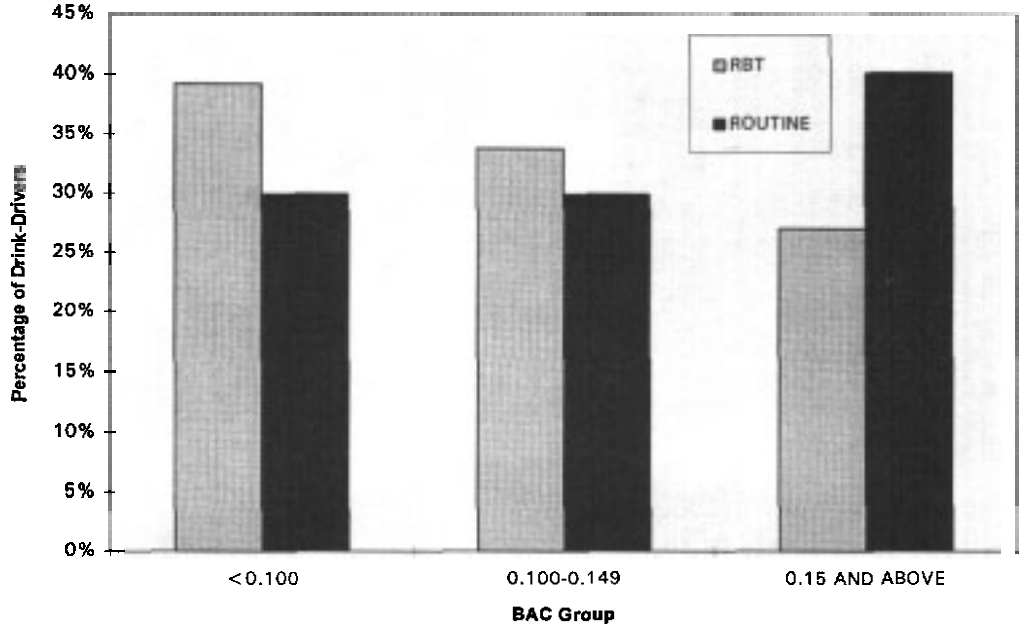


Figure 2.3f: Percentage of RBT and Routine Drink-Driver Offences for Rest of Victoria by BAC



A greater bias towards drink-drivers with high BAC readings exists amongst the Routine tests for offences that occurred in the Rest of Victoria as compared to the Melbourne region (figure 2.3f). Forty percent of the Routine offences had drink-

drivers with excessive BAC readings whereas only 27% of the RBT offences were in the highest BAC group.

Although there were slight differences between the two groups of drink-drivers related to their age and BAC level in both Melbourne and the Rest of Victoria, the results presented in the next section of the report do not differentiate between drink-driver apprehensions occurring at an RBT station or through a random routine police check.

2.4 TYPE OF ALCOHOL CONSUMED

The Melbourne and 'Rest of Victoria' samples were analyzed separately because country drinking habits are likely to differ from those in large city locations. Each sample was analyzed by the type of alcohol consumed prior to the drink-driving apprehension to estimate the proportion of drink-drivers who consumed beer. The alcohol types were grouped into the following categories:

- beer only;
- beer in combination with other alcoholic beverages, such as wine or spirits;
- wine (includes mainly wine, with some spirits);
- spirits and fortified wines (includes mainly stronger spirits and some wine).

For the drink-drivers who consumed beer only, the proportions who consumed full-strength and low alcohol-content beer were also estimated. Note that beer is technically classed as low-alcohol or light beer if its alcohol content is less than 3.8%/volume, but the type of beer recorded was that as stated by the apprehended driver.

The proportion of beer consumption for each for the Melbourne and Rest of Victoria samples was further analyzed by the sex, age, BAC group and place of drinking of the drink-driver.
The age-groups used were:

- 25 years and below
- 26 to 50 years
- 50 years and above,

and the BAC readings were grouped as follows:

- positive to 0.099g/100ml
- 0.100g/100ml to 0.149g/100ml
- 0.150g/100ml and above.

A small proportion of illegal drink-drivers had BAC readings of 0.05g/100ml and below (3% of the Melbourne sample; 4% of the Rest of Victoria sample). These drink-drivers were predominantly probationary licence holders.

The most recent place of drinking at which the drink-driver consumed alcohol prior to apprehension falls into the following categories:

- hotel (includes licenced premises such as wine bars or public bars);
- restaurant
- home (drink-driver's own residence)
- other residence (includes other person's home or a party at a private residence)
- nightclub (includes discotheques and licensed premises that stay open after midnight)
- sportsclub (includes sporting venues or social club attached to a sporting venue)
- work (drink-driver's workplace)
- other (other drinking locations such as a social event in a hall or theatre, public outdoor areas, motor vehicles).

Confidence limits reflecting the number of drink-drivers on which each estimated proportion is based were calculated for each of the total sample and sub-sample proportions using the method described in Walpole and Myers (1989).

2.4.1 Melbourne Drink-Driver Apprehensions

The type of alcohol consumed by the 1015 drink-drivers apprehended in Melbourne is given in figure 2.4.1a.

Beer was the alcoholic beverage consumed most frequently, with 64% of Melbourne drink-drivers consuming beer *only*. This estimate had 95% confidence limits ranging from 61% to 67%. Thirteen percent also consumed beer in combination with other alcohol, with a confidence interval of 11% to 15%. Wine and spirit consumption comprised 15% and 8% of the Melbourne sample respectively.

Figure 2.4.1a: Percentage of Drink-Driver Offences for Melbourne by ALCOHOL TYPE consumed

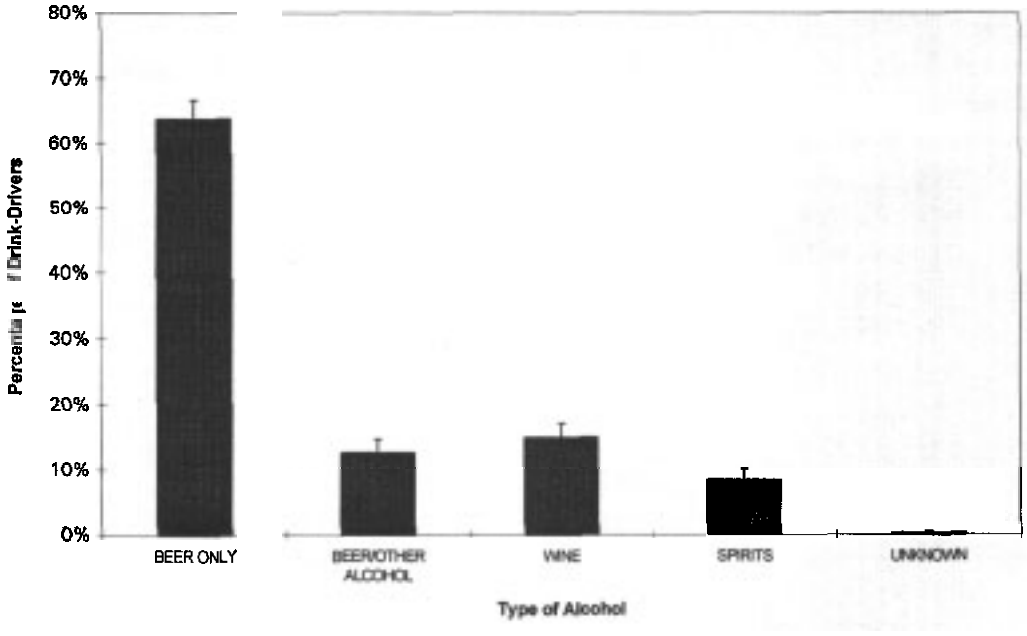
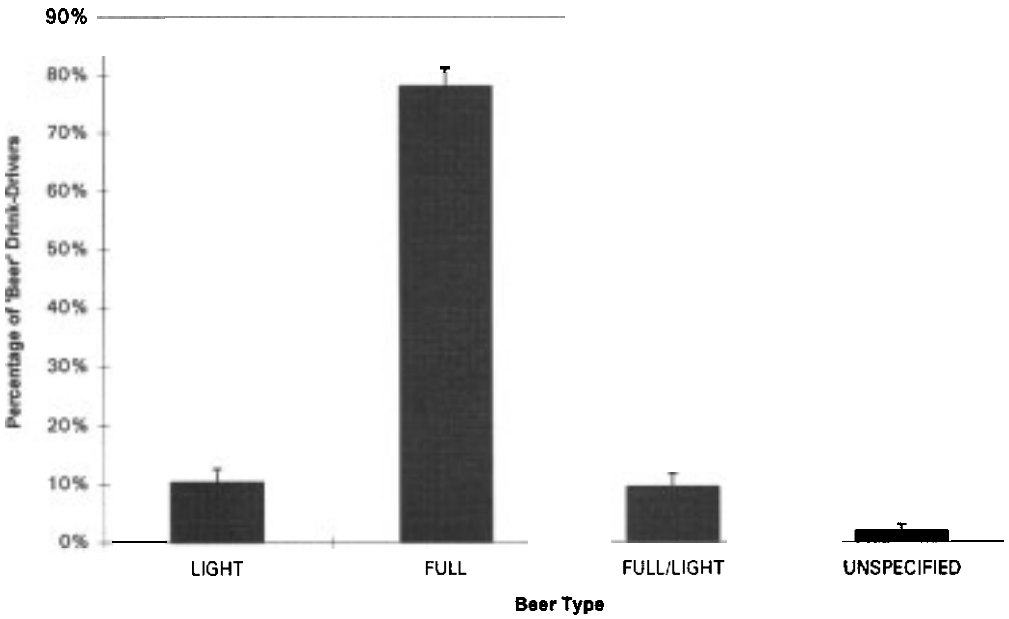


Figure 2.4.1b:Percentage of 'Beer' Drink-Driver Offences for Melbourne by BEER TYPE



Amongst the 647 drink-drivers who consumed beer only , the majority , 78%, consumed full-strength beer, whereas only 10% consumed low-alcohol content beer, (see figure 2.4.1b). Confidence limits for the estimates of the full and light beer proportions are 75% to 82%, and 8% to 13% respectively. Nine percent of the Melbourne drink-drivers consumed a combination of full-strength and low-alcohol beer. Tables of the alcohol type and beer type consumption for the Melbourne sample are given in the Appendix (Tables 1.1 and 1.1a).

Beer Consumption by Driver Sex

The random sample of 1015 drink-drivers apprehended in Melbourne consisted of 871 (or 86%) males and 142 (or 14%) females. Male drink-drivers consumed beer *only* in greater proportions than females, 70% compared to 25%, (figure 2.4.1c). Confidence limits for the male proportion estimate ranged from 67% to 74%, whilst the corresponding female confidence interval was much wider, ranging from 18% to 32%. Whilst males were the greater beer drinkers, females were more than five times as likely to have consumed wine than males (ie: 53% of females consumed wine compared with 10% of males). Spirit consumption was also greater for female drink-drivers than males, 13% and 8% respectively.

Male and female drink-drivers appear to differ significantly in the type of alcohol they consume. The association between alcohol type and sex was highly significant ($p<0.0001$). Note however that the widths of the confidence intervals for the female estimates are larger than for the males, with widths ranging from 10% to 16%. The greater widths are due to the relatively small sample of women drink-drivers.

Figure 2.4.1d gives the proportions of full-strength and light beer drinkers amongst those drivers who consumed beer only. A greater proportion of female beer drinkers consumed full-strength beer than male beer drinkers - 87% and 78% respectively. Low alcohol-content beer was more likely to be consumed by male beer drinkers than females. Only one female (or 3%) consumed light beer amongst the Melbourne sample. Tables 1.2 and 1.2a in the Appendix give the percentages and confidence limits by alcohol type, beer type and sex for the Melbourne sample.

Figure 2.4.1c: Percentage of Drink-Driver Offences for Melbourne by ALCOHOL TYPE and SEX

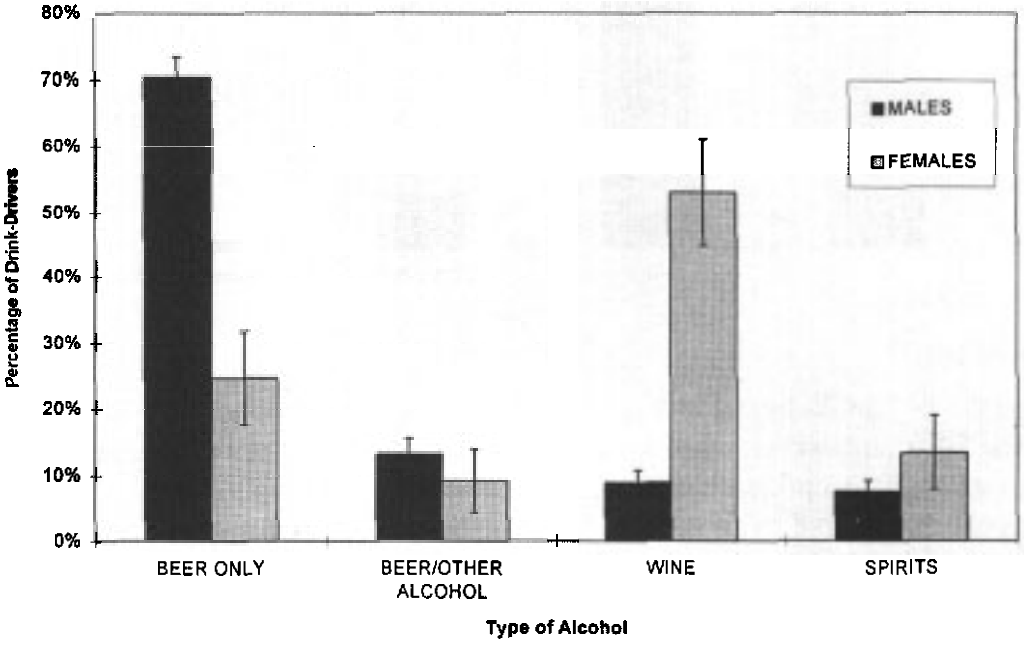
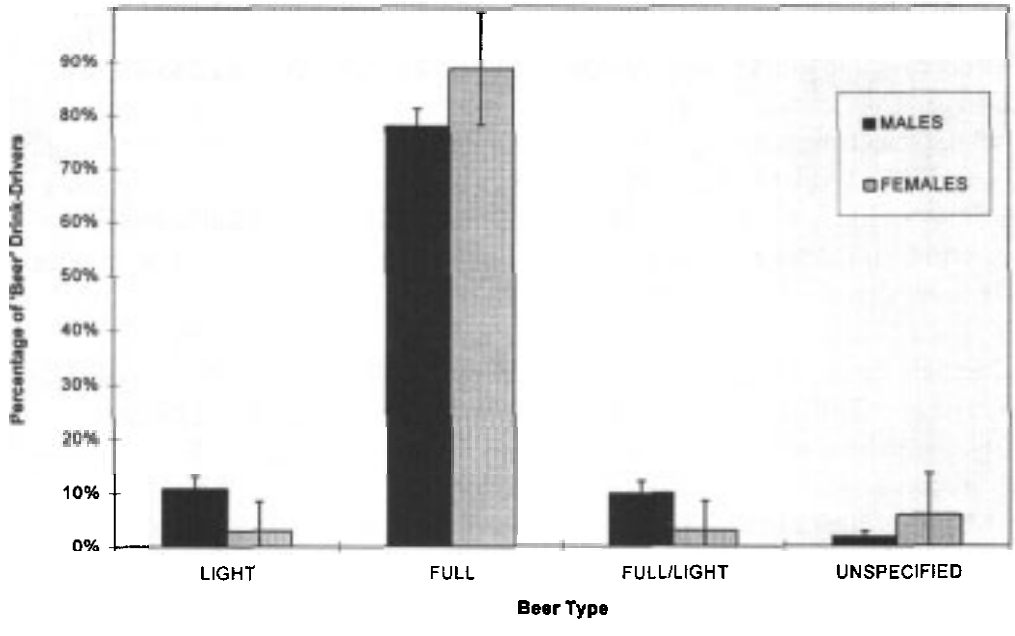


Figure 2.4.1d: Percentage of 'Beer' Drink-Driver Offences for Melbourne by BEER TYPE and SEX



Beer Consumption by Driver Age

Melbourne drink-drivers aged over 50 years consumed beer in smaller proportions than younger drink-drivers (see figure 2.4.1e). Just over half of the older drink-drivers consumed beer only, whereas younger drivers aged under 26 years and those aged between 26 and 50 years consumed beer in similar proportions, 67% and 66% respectively. Wine consumption increased with age. Twenty-two percent of the drink-drivers aged over 50 years consumed wine, but only 6% of the younger drivers did so. Beer in combination with other alcoholic beverages was also greatest for the older age-group. Spirit consumption decreased with age amongst the Melbourne drink-driving sample. Eleven percent of the under 26 year-old drink-driving population consumed spirits. The differences found between the type of alcohol consumed and the age of the drink-driver were significant ($p<0.0001$).

Amongst the Melbourne drink-drivers who consumed beer only, the consumption of full-strength beer decreased with age, whereas light beer consumption showed the opposite trend, increasing with age. Eighty-seven percent of young (under 26 years) beer drink-drivers consumed full-strength beer but only 2% drank low alcohol-content beer exlusively. Light beer consumption was greatest for the Melbourne drink-drivers aged over 50 years (see figure 2.4.1f). The Appendix contains the alcohol and beer type proportions and confidence limits by age in tables 1.3 and 1.3a.

Figure 2.4.1e: Percentage of Drink-Driver Offences for Melbourne by ALCOHOL TYPE and AGE

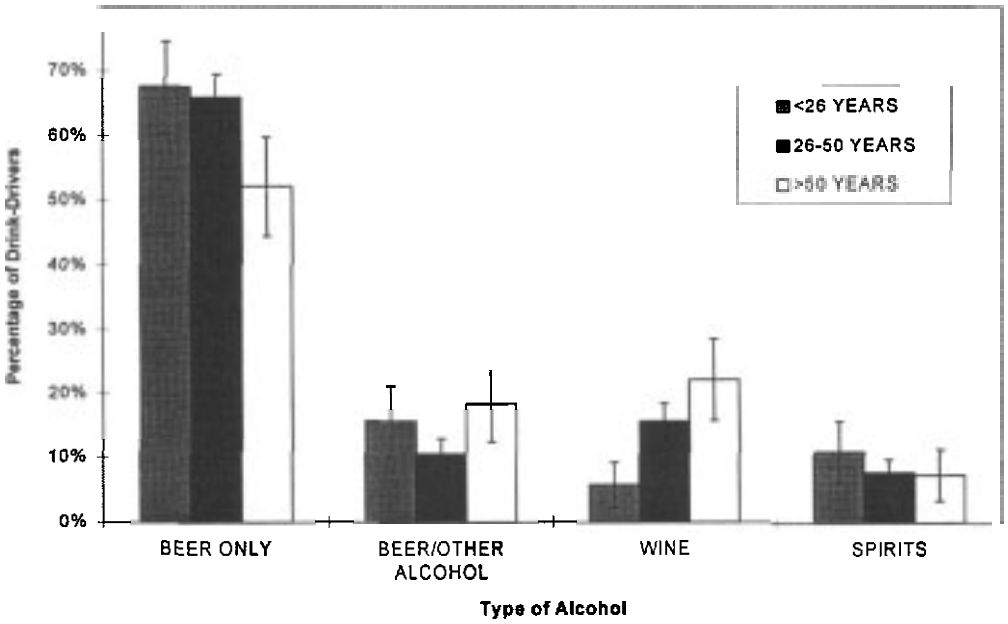
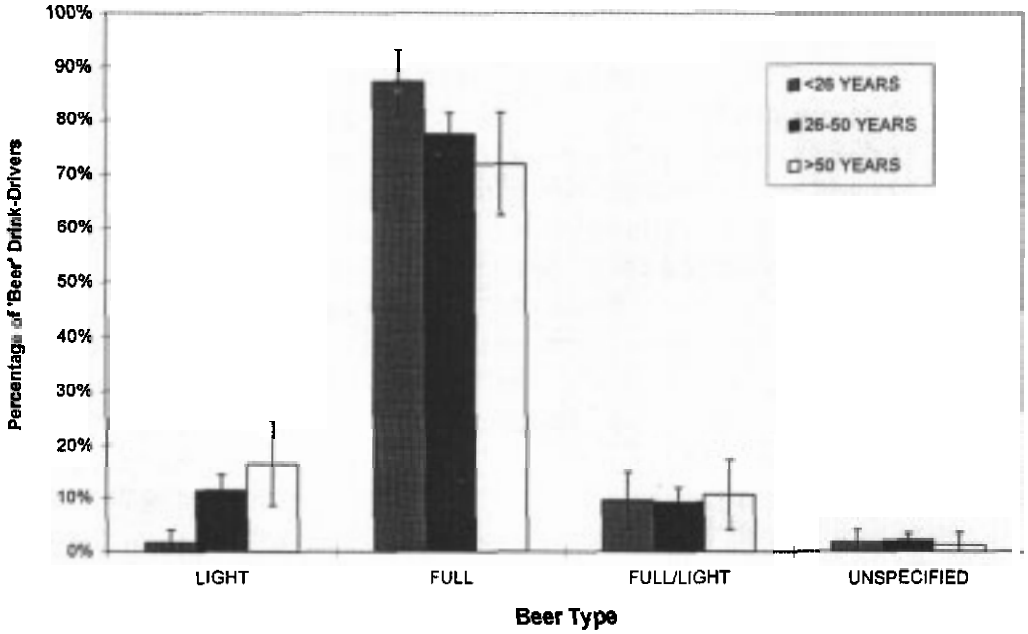


Figure 2.4.1f: Percentage of 'Beer' Drink-Driver Offences for Melbourne by BEER TYPE and AGE



Beer Consumption and BAC

Drink-drivers with BAC in the range 0.100g/100ml to 0.149g/100ml were most likely to have consumed beer only (67%), whereas those with lower BAC readings were least likely (60%), (figure 2.4.1g). There was little difference in BAC levels for wine drink-drivers, but low illegal BAC readings of below 0.100g/ml were most likely to occur amongst spirit drink-drivers (10%). Note that no statistically significant association existed between the type of alcohol consumed and the drink-driver's BAC level, (p=0.431).

Figure 2.4.1h shows beer drink-drivers who had extreme illegal BAC readings of 0.150g/100ml and above were more likely to have consumed full-strength beer, (81%), than those with lower BAC readings, whereas the proportion of light beer drink-drivers decreased with increasing BAC level. Twelve percent of drink-drivers with a BAC reading below 0.100g/100ml consumed light beer, but only 9% with excessive BAC readings did so.

BAC group by alcohol type and beer type proportions and confidence limits are given in tables 1.4 and 1.4a in the Appendix.

Figure 2.4.1g: Percentage of Drink-Driver Offences for Melbourne by ALCOHOL TYPE and BAC

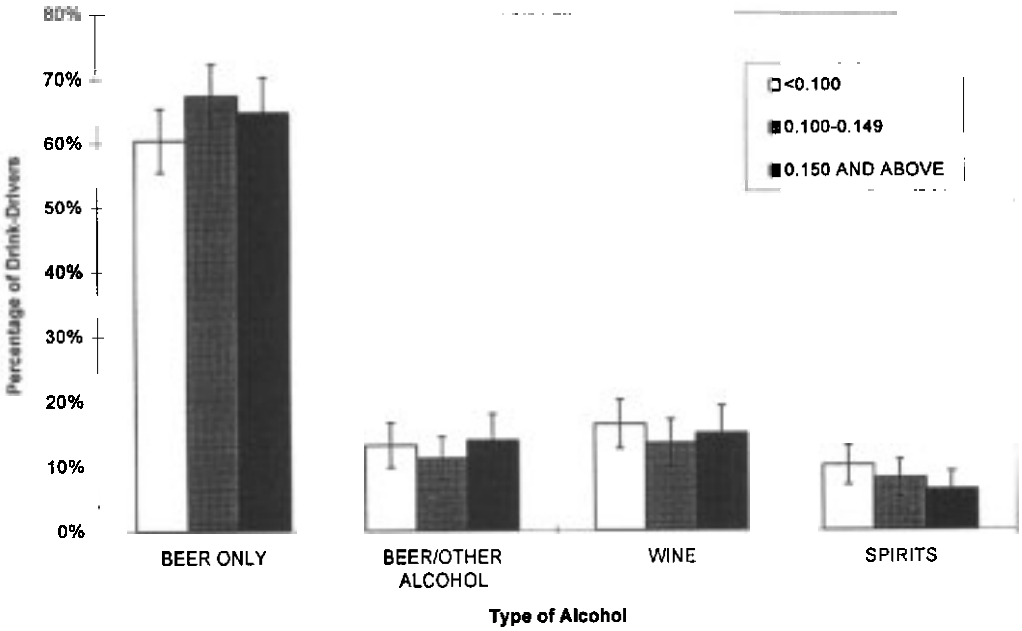
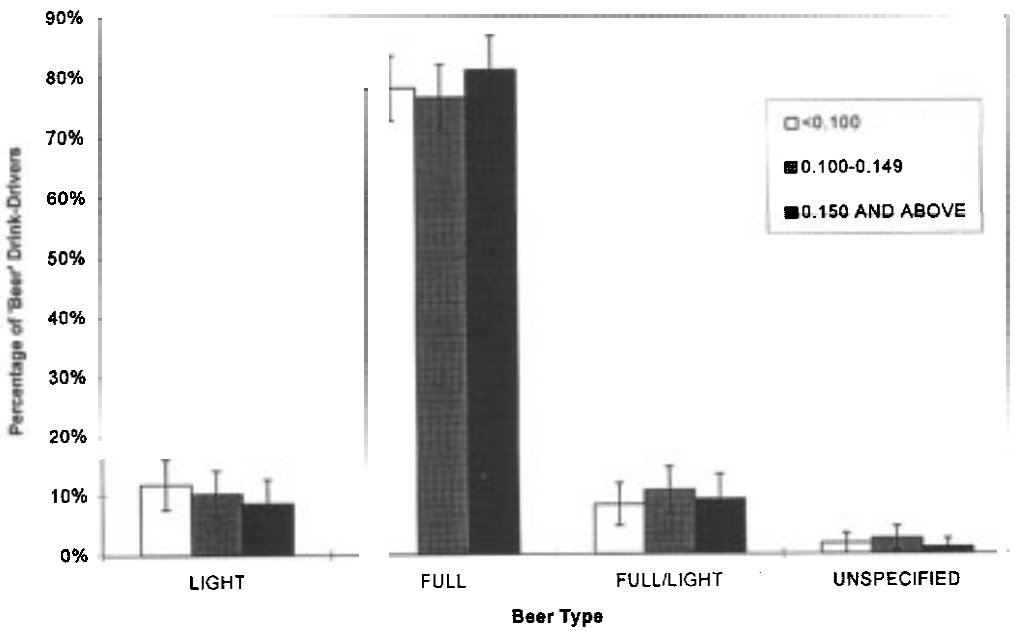


Figure 2.4.1h: Percentage of 'Beer' Drink-Driver Offences for Melbourne by BEER TYPE and BAC



Beer Consumption and Place of Drinking

Beer-only consumption was greatest for Melbourne drink-drivers who had recently consumed alcohol at a sportsclub or workplace. Drink-drivers were less likely to drink beer only at a restaurant or their own home compared to other drinking locations, (figure 2.4.1i). Opposite findings occurred for wine consumption. Drink-drivers who had recently consumed alcohol in a restaurant or their own home were most likely to have drunk wine. Beer in combination with other alcoholic beverages was also consumed mostly at restaurants by drink-drivers in Melbourne. The Melbourne sample produced a statistically significant association between the alcohol type consumed and the drink-driver's place of drinking prior to apprehension, ($p<0.0001$).

Figure 2.4.1i: Percentage of Drink-Driver Offences by ALCOHOL TYPE and PLACE OF DRINKING

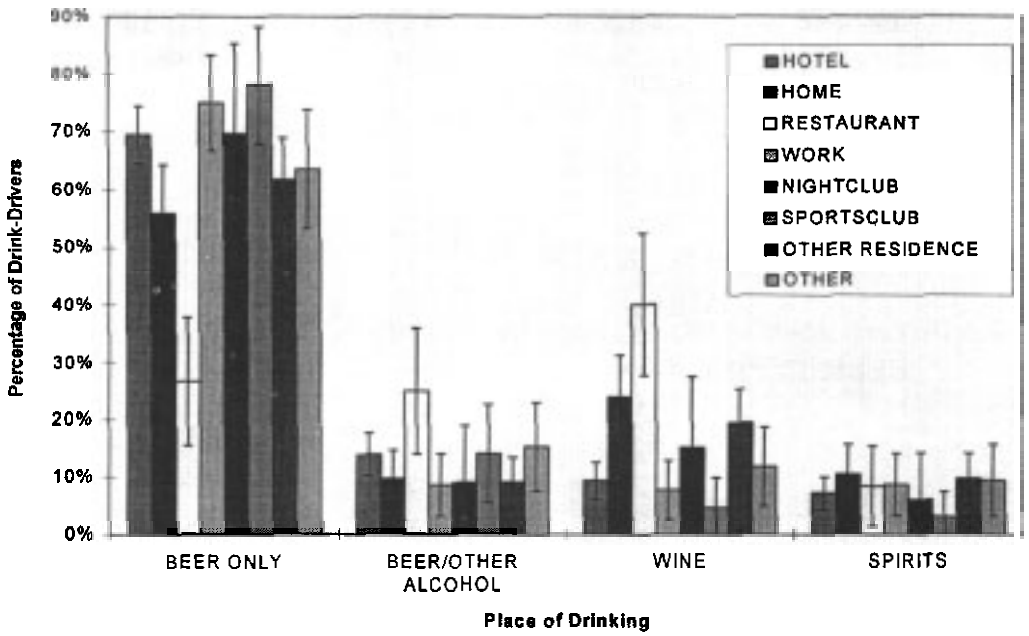
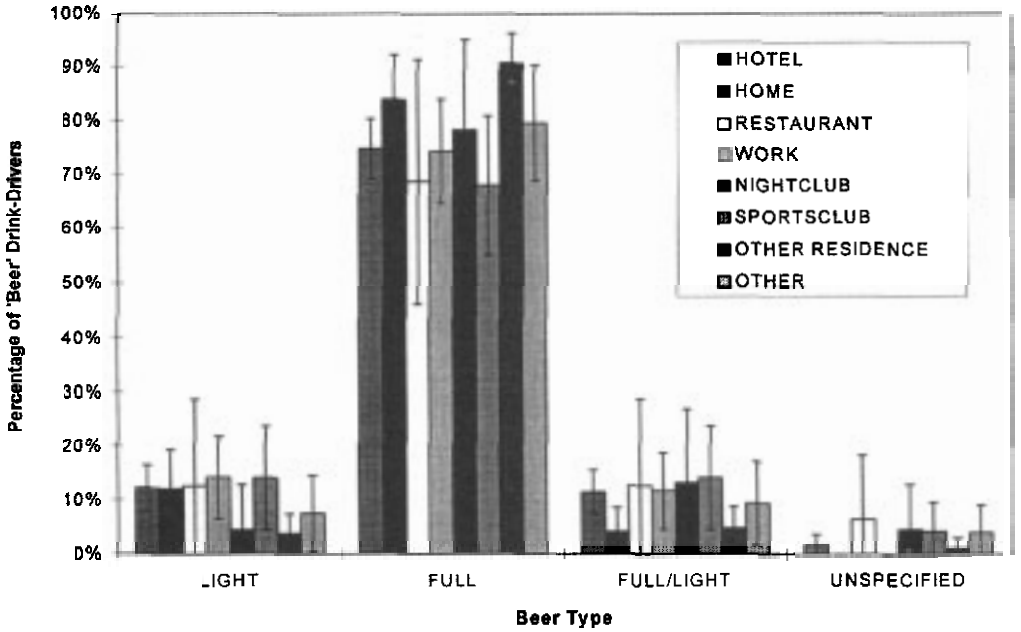


Figure 2.4.1j gives the place of drinking for full-strength and light beer consumption amongst Melbourne drink-drivers. Beer drinkers apprehended after drinking at their workplaces or a sportsclub were most likely to have consumed low alcohol-content beer. However, beer drink-drivers who had been drinking at another residence were most likely to have been consuming full-strength beer. Tables 1.5 and 1.5a in the Appendix give the percentages of drink-drivers by the type of alcohol consumed and the place of drinking for the Melbourne sample.

Figure 2.4.1j: Percentage of 'Beer' Drink-Driver Offences for Melbourne by BEER TYPE and PLACE OF DRINKING



2.4.2 Drink-Drivers Apprehended in the Rest of Victoria

The alcoholic beverage consumed most frequently amongst the 531 drink-drivers in the Rest of Victoria was beer. Seventy-eight percent of the drink-drivers consumed beer only, and a further 11% drank beer in combination with other alcohol. Ninety-five percent confidence limits on the beer only estimate ranged from 74% to 82%. Wine and spirit consumption was relatively low, with percentages of 6% and 5% respectively (figure 2.4.2a).

Figure 2.4.2b gives the proportion of full-strength and light beer drinkers amongst the Rest of Victoria beer-only drinkers. Only 9% of the 414 beer drinkers consumed low alcohol-content beer, with a further 9% drinking a combination of full-strength and light beer. Most of the beer drinkers apprehended in the Rest of Victoria, 80%, consumed full-strength beer. Confidence limits for the estimates of the full and light beer proportions ranged from 76% to 84% and 7% to 12% respectively. The Appendix gives the alcohol type and beer type proportions for the Rest of Victoria sample in tables 1.6 and 1.6a.

Figure 2.4.2a: Percentage of Drink-Driver Offences for 'Rest of Victoria' by ALCOHOL TYPE consumed

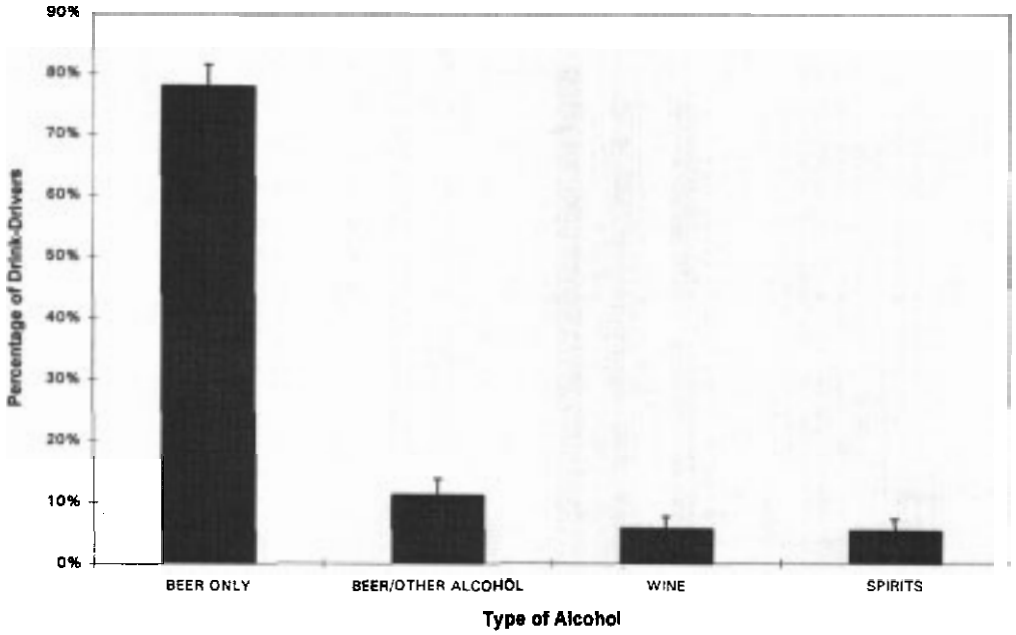
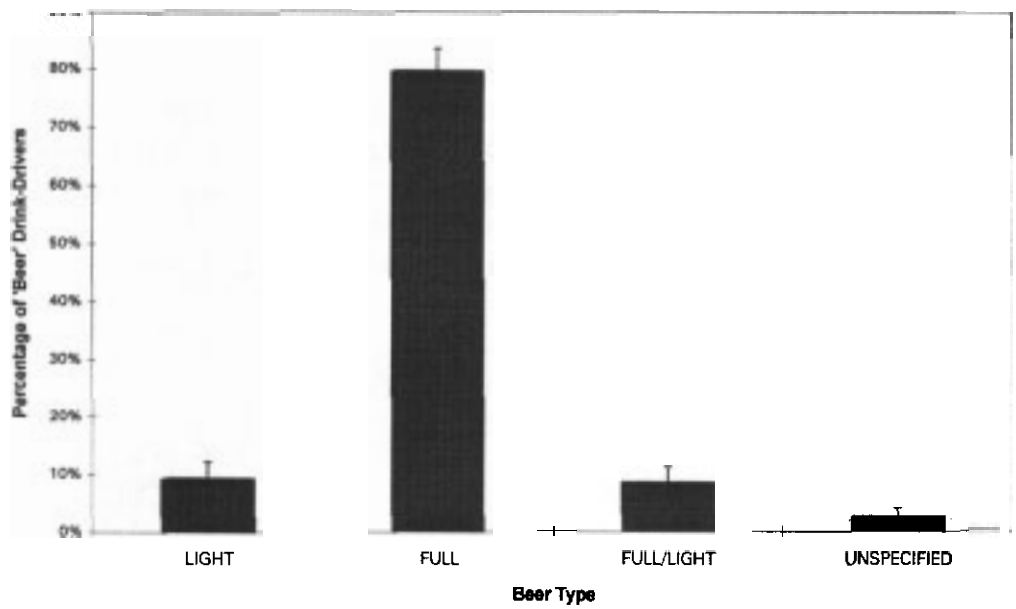


Figure 2.4.2b: Percentage of 'Beer' Drink-Driver Offences for 'Rest of Victoria' by BEER TYPE consumed

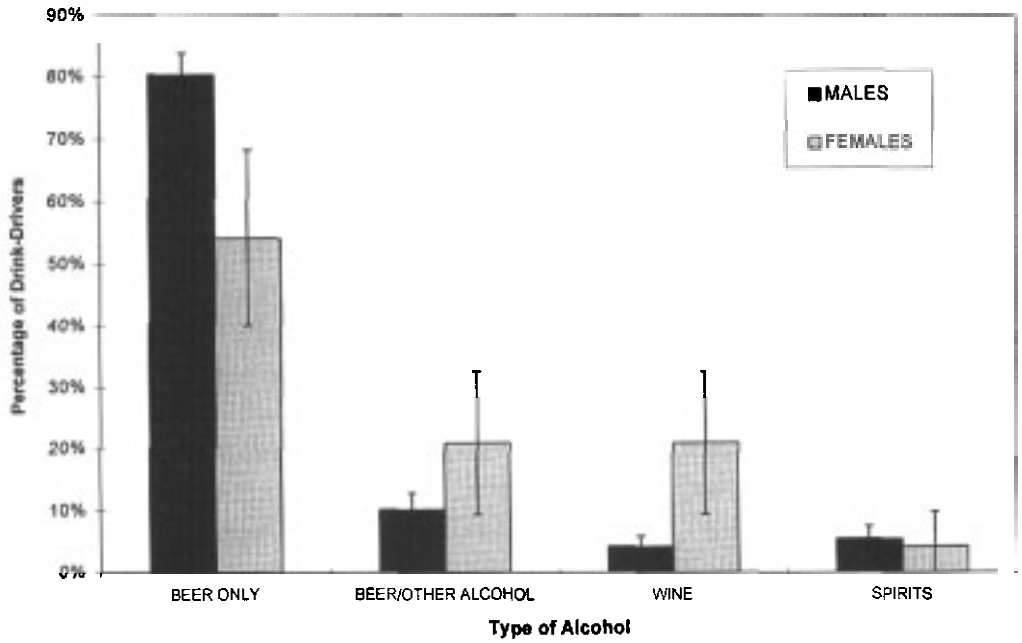


Beer Consumption by Driver Sex

Beer-only consumption amongst the 531 drink-drivers in the Rest of Victoria was greater for males than females. Eighty percent of males consumed only beer prior to drink-driving, whereas only 54% of females did so (figure 2.4.2c). Females, however, consumed beer in combination with other alcoholic beverages in greater proportions

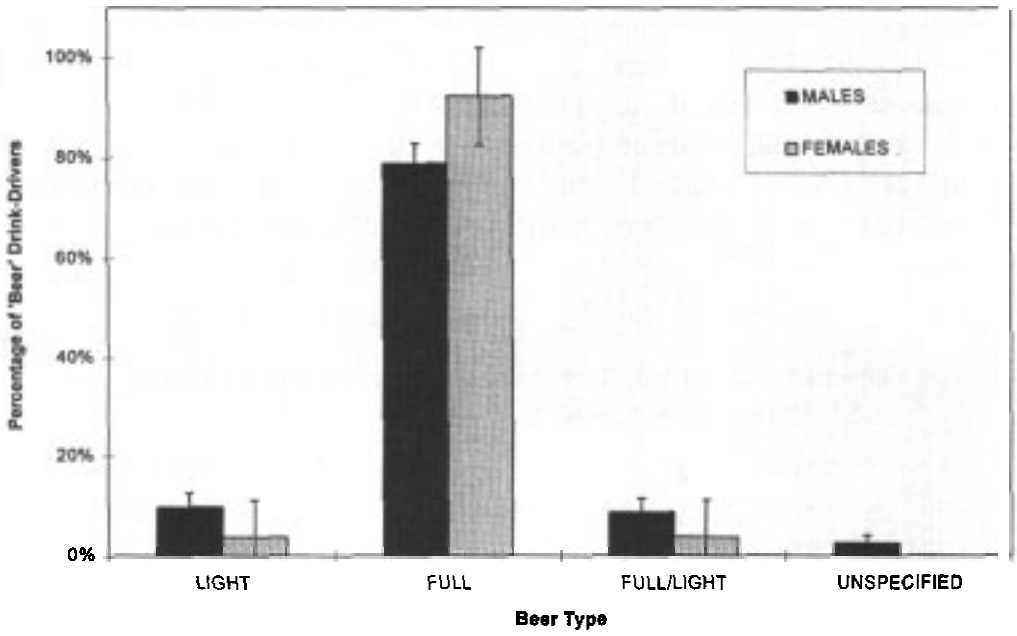
than males - 21% compared to 10%. Wine consumption was also greater amongst female drink-drivers than males in the Rest of Victoria. Twenty-one percent of females consumed wine before driving but only 4% of males did. Spirit consumption was relatively low, occurring in similar proportions for both male and female drink-drivers. The differences found between male and female drink-drivers and the type of alcohol consumed were statistically significant, ($p<0.0001$). Note however the confidence intervals for the female proportions are wider than the male intervals, with widths as high as 28%. The relatively small sub-sample of female drink-drivers in the Rest of Victoria sample, 48 females compared to 483 males, would account for the large widths.

Figure 2.4.2c: Percentage of Drink-Driver Offences for 'Rest of Victoria' by ALCOHOL TYPE and SEX



Full-strength beer was more likely to be consumed by female beer drink-drivers, 92%, than males, 79%, in the Rest of Victoria (figure 2.4.2d). The opposite trend was found for light beer and the combination of light beer and full-strength beer consumption. A greater proportion of male beer drinkers consumed light beer, 10%, than females, 4%. A similar male to female ratio of 2.5:1 was found for the low alcohol-content and full-strength beer combination. Tables 1.7 and 1.7a in the Appendix give the proportions and confidence limits by alcohol type, beer type and sex for the Rest of Victoria sample.

Figure 2.4.2d:Percentage of 'Beer' Drink-Driver Offences for 'Rest of Victoria' by BEER TYPE and SEX



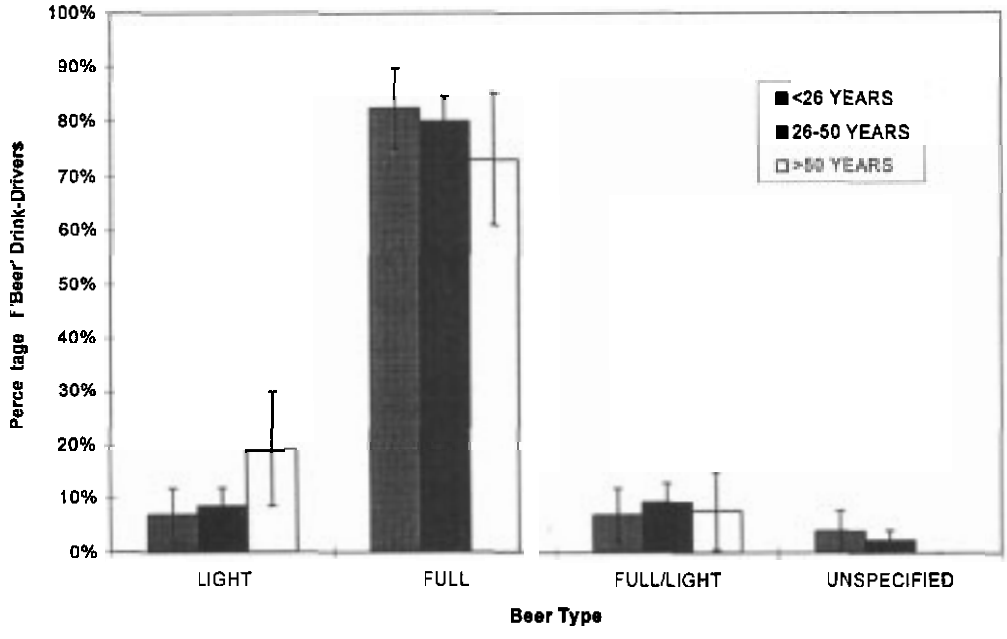
Beer Consumption by Driver Age

Drink-drivers aged between 26 years and 50 years were most likely to consume beer only, 80%, in the Rest of Victoria, whereas amongst younger (under 26 years) and older (over 50 years) drink-drivers, beer consumption occurred in similar proportions, approximately 74%. However, the proportions drinking beer in combination with other alcoholic beverages decreased with age (figure 2.4.2e). Young drink-drivers were twice as likely to consume beer with other alcohol than the older age-groups. Wine consumption increased with age, with only 3% of drink-drivers aged under 26 years consuming wine. Spirit consumption, however, was greatest for young drink-drivers with 9% of the youngest age-group consuming spirits before driving. A statistically significant association was found to exist between the type of alcohol consumed and the age of the drink-driver in the Rest of Victoria, ($p=0.0270$).

Amongst the 414 drink-drivers who consumed beer only in the Rest of Victoria, the consumption of full-strength beer decreased with age (figure 2.4.2f). Eighty-two percent of drivers aged under 26 years drank full-strength beer, whereas the corresponding proportion for those drink-drivers aged over 50 years was 73%. Low alcohol-content beer consumption showed the opposite trend - an increase in consumption with an increase in age. Nineteen percent of beer drink-drivers in the over 50 age-group consumed light beer but only 7% of the under 26 year-old drivers did so. Note the widths of the confidence intervals for the over 50 year age-group are fairly large, ranging from 15% to 24%. This can be explained by the relatively small sub-sample of 52 drink-drivers for this age-group. The Appendix contains the alcohol type and beer type proportions and confidence intervals by age in tables 1.8 and 1.8a.

Figure 2.4.2e: Percentage of Drink-Driver Offences for 'Rest of Victoria' by ALCOHOL TYPE and AGE

Figure 2.4.2f: Percentage of 'Beer' Drink-Driver Offences for 'Rest of Victoria' by BEER TYPE and AGE



Beer Consumption and BAC

Figure 2.4.2g shows there was little difference in BAC levels for beer-only drink-drivers in the Rest of Victoria, with proportions of approximately 78% existing in all three BAC groups. However, the proportion of drink-drivers consuming beer in combination with other alcohol increased with increasing BAC level. Wine

consumption decreased with increasing BAC, with drink-drivers who registered low illegal BAC readings displaying the greatest proportion, 8%. Drink-drivers with BAC in the range 0.100g/100ml to 0.149g/100ml were twice as likely to have consumed spirits, 8%, than those drivers with low or excessive illegal BAC readings. However, the differences found between the type of alcohol consumed and the driver's BAC reading were not statistically significant, (p=0.4135) for the Rest of Victoria sample.

Figure 2.4.2g: Percentage of Drink-Driver Offences for 'Rest of Victoria' by ALCOHOL TYPE and BAC

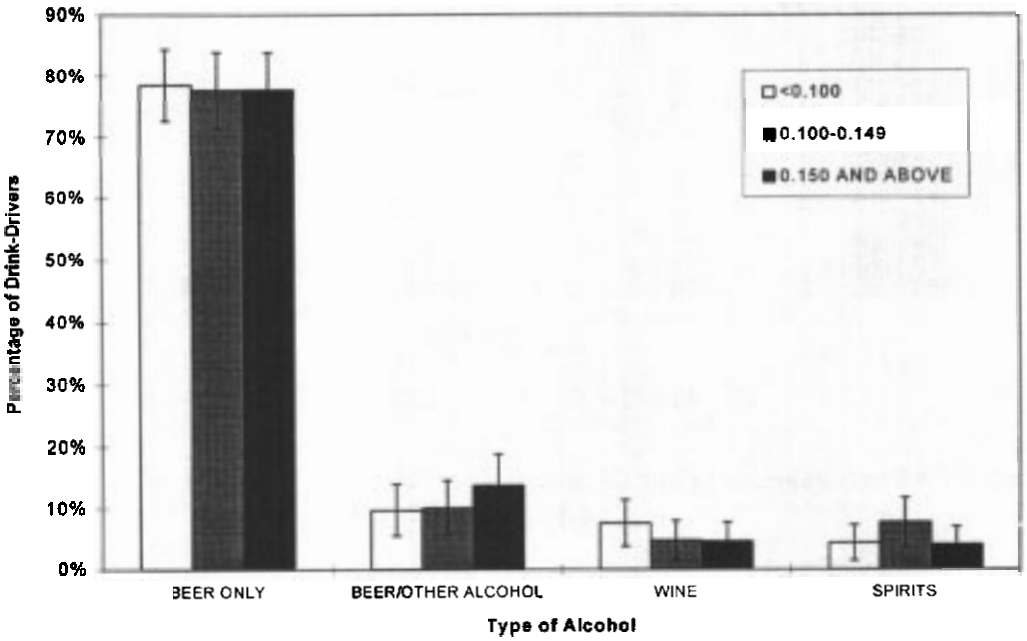
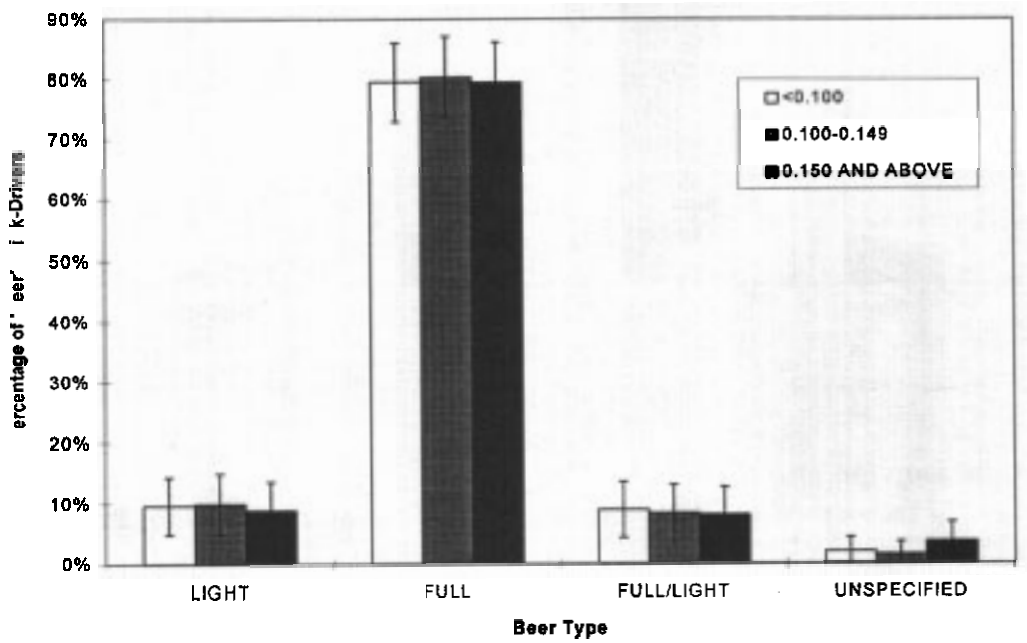


Figure 2.4.2h: Percentage of 'Beer' Drink-Driver Offences for 'Rest of Victoria' by BEER TYPE and BAC



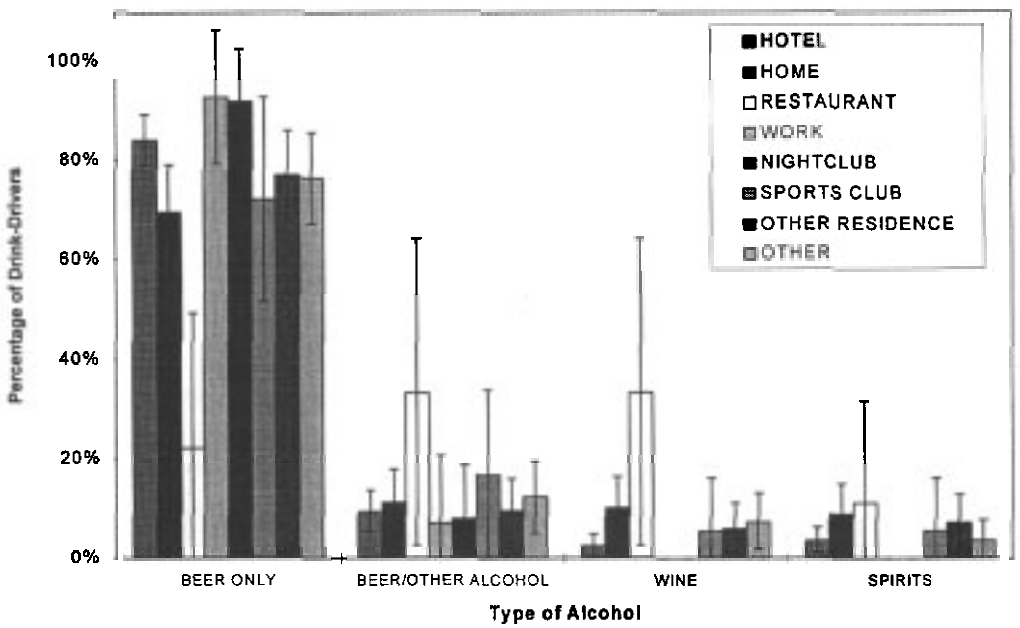
There was little or no difference in BAC readings for each beer type consumed amongst beer drink-drivers in the Rest of Victoria (figure 2.4.2h). The proportion of full-strength beer drinkers remained fairly constant, approximately 80%, over all BAC levels. Drink-drivers with low, high and excessive illegal BAC readings also drank low alcohol-content beer in similar proportions, approximately 10%. Tables 1.9 and 1.9a in the Appendix give the alcohol type and beer type proportions by BAC group.

Beer Consumption and Place of Drinking

Beer-only consumption occurred mostly at the drink-driver's workplace, 93%, or at a nightclub, 92%, prior to Police apprehension in the Rest of Victoria (figure 2.4.2i). However, the number of drink-drivers consuming alcohol at work was only 14, whilst at a nightclub the corresponding frequency was also relatively low at 25. Hence, the confidence interval widths for these two proportion estimates are wide and unreliable - at least 22%. Note that beer-only consumption was also high, at 84% for drink-drivers who had recently consumed alcohol at a hotel. This estimate although lower than the 'work' and 'nightclub' beer-only estimates is more reliable because of its smaller confidence interval width.

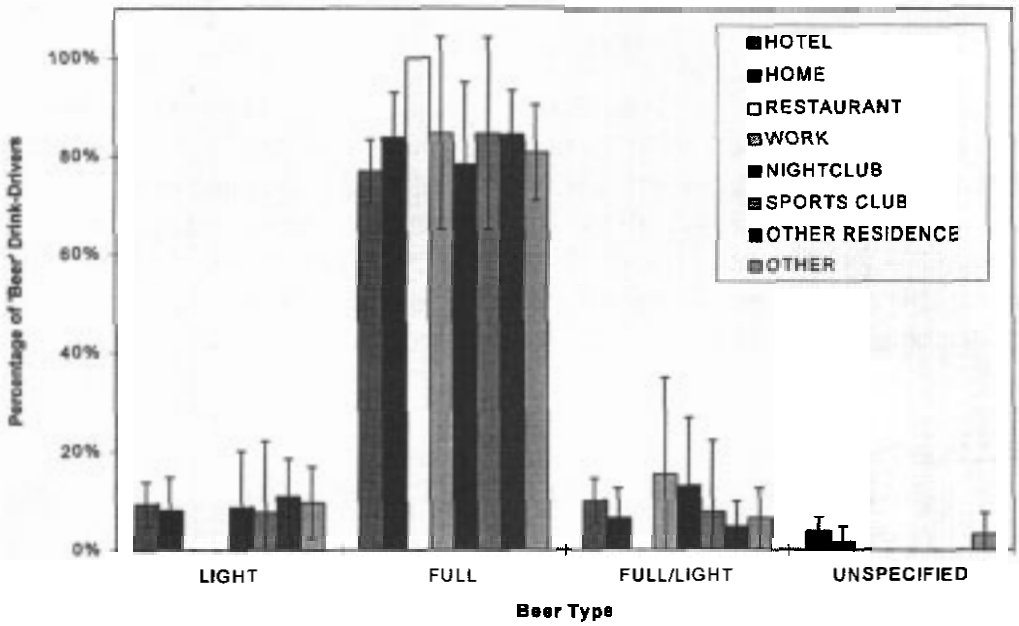
Beer in combination with other alcoholic beverages was consumed most frequently, (33%), in a restaurant for the Rest of Victoria. Again the very small sub-sample of nine restaurant drink-drivers makes this estimate unreliable. Wine and spirit consumption was also greater for drink-drivers who had consumed alcohol at a restaurant, (33% for wine and 11% for spirits), or at home (approximately 10%). Statistically, the association between the alcohol type consumed and the drink-driver's place of drinking was significant, (p=0.0130), for the Rest of Victoria sample.

Figure 2.4.2i: Percentage of Drink-Driver Offences for Rest of Victoria by ALCOHOL TYPE and PLACE OF DRINKING



The place of drinking for light and full-strength beer consumption is given in figure 2.4.2j. Beer drink-drivers who had been drinking at another residence or at a hotel were most likely to have consumed low alcohol-content beer. However, beer drink-drivers apprehended after drinking at home, at work, at a sportsclub or at another residence were most likely to have consumed full-strength beer (approximately 85% for each place of drinking). Note also that both of the beer-drinkers who consumed alcohol at a restaurant drank full-strength beer prior to Police apprehension. A combination of light and full-strength beer was most likely to have been consumed at the drink-driver's workplace, 15%, or at a nightclub, 13%. Again, due to the small sub-samples of drink-drivers at each of these establishments, these estimates are likely to be unreliable. Tables 1.10 and 1.10a in the Appendix give the percentages and confidence limits by the type of alcohol, beer type and place of drinking for the Rest of Victoria sample of drink-drivers.

Figure 2.4.2j: Percentage of 'Beer' Drink-Driver Offences for Rest of Victoria by BEER TYPE and PLACE OF DRINKING



2.4.3 Comparison of Melbourne and Rest of Victoria Drink-Driver Apprehensions

The alcoholic beverage consumed most frequently by drink-drivers in both samples was beer only. However, the proportion of beer-only drink-drivers was greater in the Rest of Victoria, 78%, than in Melbourne, 64%. Wine consumption amongst drink-drivers was more than twice as large in Melbourne, 15%, as in the Rest of Victoria, 6%. For drink-drivers who drank beer only, the proportions consuming full-strength and light beer were similar in both samples.

Statistically significant sex differences existed in both Melbourne and the Rest of Victoria with regard to the type of alcohol consumed by a drink-driver. Males were more likely to consume beer than females prior to drink-driving, but females consumed wine or spirits more frequently. Amongst the beer drink-drivers, males consumed light beer in greater proportions than females, whereas the trend was reversed for full-strength beer.

For Melbourne drink-drivers, beer consumption decreased with age, but for the Rest of Victoria, beer consumption was greatest for drivers aged between 26 years and 50 years. Full-strength beer consumption decreased with age, whilst low alcohol-content beer consumption increased with increasing age in both samples. Wine consumption also increased with the drink-driver's age. The association found between the type of alcohol consumed and the age of the drink driver was statistically significant for both Melbourne and the Rest of Victoria. Note, however, the absence of a statistically significant relationship between the BAC reading of the drink-driver and the alcoholic beverage consumed for both samples.

Beer-only drink-driver consumption was most likely to occur at work or at a nightclub in the Rest of Victoria, and at work or a sportsclub in Melbourne. However, low-alcohol beer was predominantly drunk at another residence or at a hotel for Rest of Victoria drink-drivers, but at work or a sportsclub amongst the Melbourne beer drink-drivers. Full-strength beer consumption featured highly amongst drivers drinking at another residence in both samples.

3. CRASH-INVOLVED DRINK-DRIVERS

There is good information regarding the estimated risk of crash involvement for drink-drivers at given BAC levels (Borkenstein et al 1964; McLean et al 1980). There is also information regarding the increased risks for young drivers (Drummond and Yeo, 1992) and of the interaction between driver age and BAC level (Mayhew et al 1986). Information of this type was used to convert the information described in Section 2 above into estimates relevant to drink-drivers involved in crashes.

3.1 RELATIVE RISK ESTIMATES

The Mayhew data on relative risks of crash involvement was used to convert the estimates of the proportions of drink-drivers on the road who consumed beer only and other alcoholic beverages (obtained from Section 2), to estimates of drink-drivers involved in crashes using a weighting procedure. The weights used were based on relative risk estimates from the Mayhew study categorized by driver age-group and BAC group as shown in Table I.

Each drink-driver was categorized according to the age and BAC groups presented in Table I, and then given a relative risk or weight depending on their age and BAC reading. Younger drink-drivers with excessive BAC of 0.100g/100ml or more were weighted more highly than older drivers with low illegal BAC readings. Thus the weighted Melbourne and Rest of Victoria samples reflect the drink-drivers involved in crashes during 1993/1994 in each locations.

TABLE I: Risk Relative to all Sober Drivers by AGE and BAC

	BAC GROUP				
AGE	0.000-0.014	0.015-0.049	0.050-0.079	0.080-0.099	0.100 and above
16-19	1.8	2.8	9	40	90
20-24	1.1	1.4	3.2	9	20
25-34	1.3	1.6	3.4	4.5	14
35-44	0.7	0.5	2	5.1	12
45-54	0.6	0.8	1.4	5	9
55+	0.5	1.1	1.2	4	8

The proportion of drink-drivers involved in crashes who had consumed beer recently was estimated for the Melbourne and Rest of Victoria weighted samples. The role of beer was also re-examined for crash-involved drink-drivers within the sex and age-group sub-samples. Confidence limits for the crash-based estimates have not been determined, as the method used by Walpole and Myers (1989) in Section 2 is not applicable to estimates weighted by relative risks.

3.2 MELBOURNE CRASH-INVOLVED DRINK-DRIVERS

Figure 3.2a gives the type of alcohol consumed by drink-drivers estimated to have been involved in crashes for the weighted Melbourne sample. The alcoholic beverage most likely to have been consumed by Melbourne drink-drivers involved in crashes was beer only with an estimated proportion of 65%. Wine consumption and beer consumption in combination with other alcohol occurred in similar proportions, 13%, for estimated crash-involved drink-drivers. Only nine percent of drivers involved in crashes consumed spirits.

The majority, 80%, of crash-involved beer drink-drivers were estimated to have consumed full-strength beer, but only 9% drank low alcohol-content beer (figure 3.2b). A further 9% of drink-drivers consumed a combination of full-strength and light beer prior to crash involvement in Melbourne. Tables 2.2 and 2.2a in Appendix B give the estimated percentages of crash-involved drink-drivers by alcohol type and beer type.

Figure 3.2a: Percentage of Crash-Involved Drink-Drivers for Melbourne by TYPE OF ALCOHOL consumed

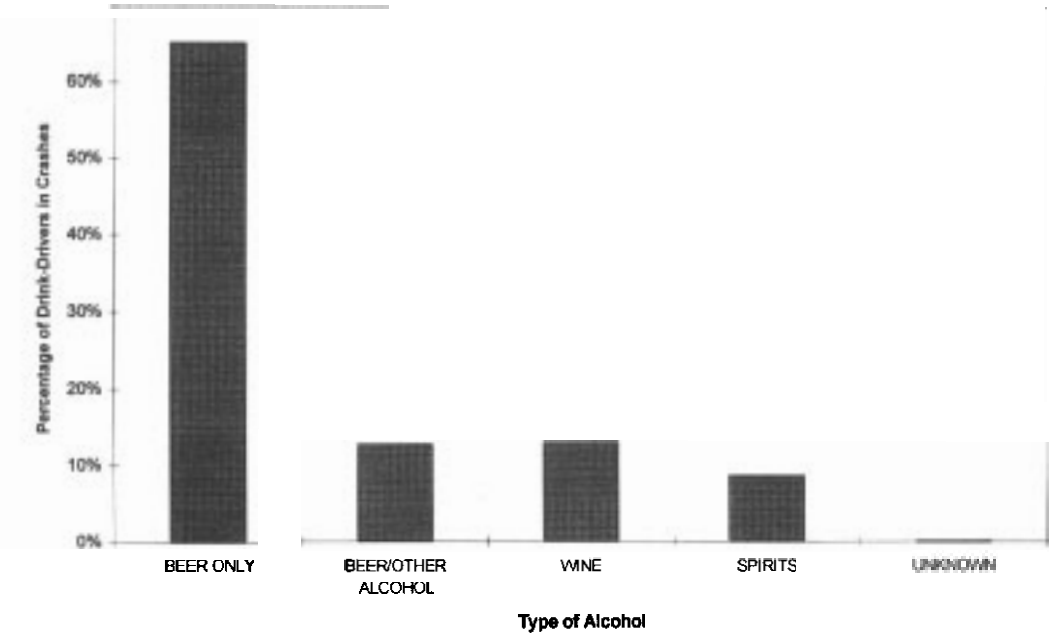
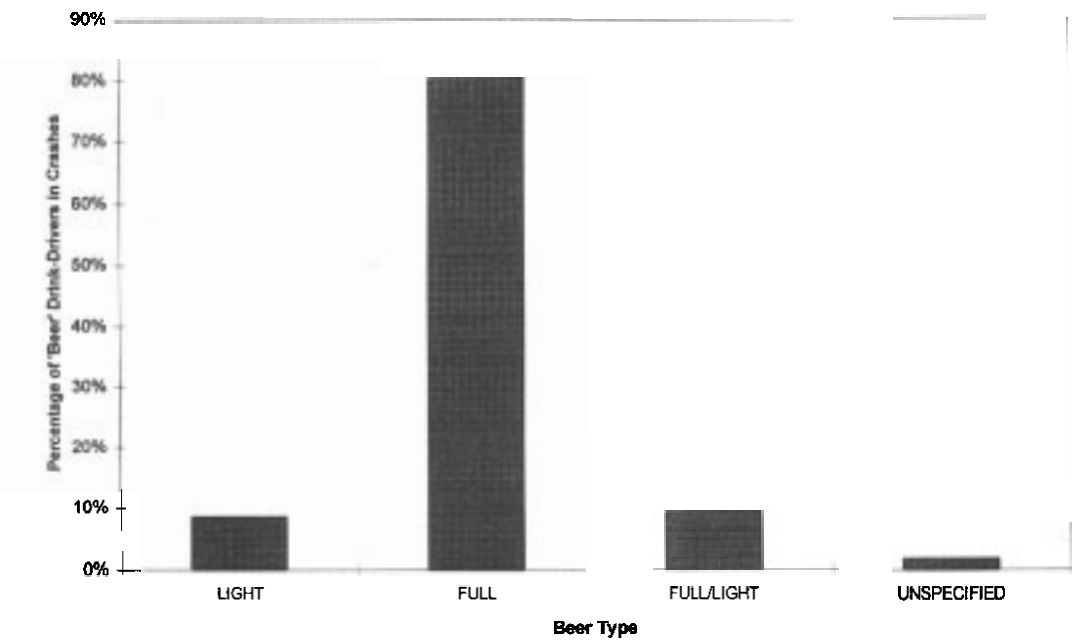


Figure 3.2b: Percentage of Crash-Involved 'Beer' Drink-Drivers for Melbourne by BEER TYPE



There was little difference between drivers on the road generally and the estimated proportions for those involved in crashes with regard to the type of alcohol or the type of beer consumed prior to drink-driving (figures 2.4.1a, 2.4.1b). Wine consumption was slightly greater amongst drink-drivers on the road, whilst full-strength beer consumption was marginally greater for crash-involved drink-drivers.

Beer Consumption by Driver Sex

Beer only consumption was estimated to be much greater amongst male drink-drivers involved in crashes in Melbourne than amongst females, with proportions of 71% and 27% respectively (figure 3.2c). These estimates are only marginally larger than the corresponding on-road drink-driver estimates (figure 2.4.1c). Female crash-involved drink-drivers were almost six times as likely to consume wine as males (47% of females consumed wine compared to 8% of males). This male to female 'wine consumption' ratio is even larger than the ratio of approximately 5:1 observed for male and female drink-drivers in general.

Beer consumed with other alcoholic beverages occurred in similar estimated proportions for male and female crash-involved drink drivers, (approximately 13%), whereas female beer/other alcohol consumption was less amongst general drink-drivers. The spirit consumption estimates for the crash-involved drink-drivers were identical to the on-road estimates - 13% of females consumed spirits ,only 8% of males did.

Almost all (95%) of the female crash-involved 'beer' drink-drivers were estimated to have consumed full-strength beer, compared to 80% of males. However, beer-drinking males involved in crashes were more likely to consume light beer than females (figure 3.2d). A greater estimated proportion of beer drinkers, male and female, consumed full-strength beer for the crash-based sample as compared to drink-drivers in general in Melbourne (figure 2.4.1d). Tables 2.2 and 2.2a in Appendix B give the alcohol and beer types by sex for crash-involved drink-drivers in Melbourne.

Figure 3.2c: Percentage of Crash-Involved Drink-Drivers for Melbourne by ALCOHOL TYPE and SEX

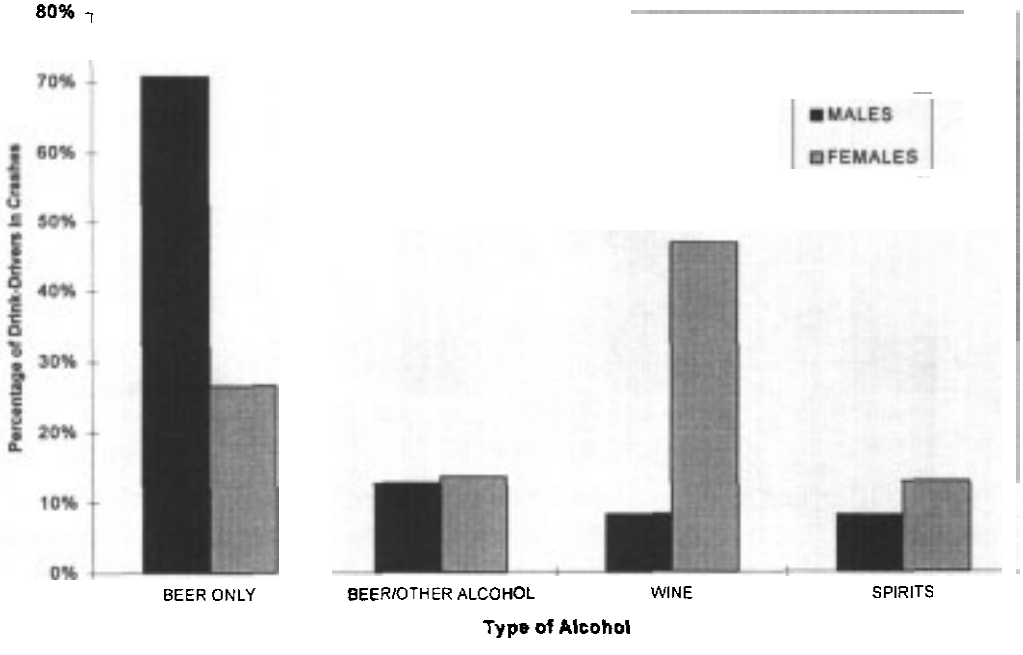
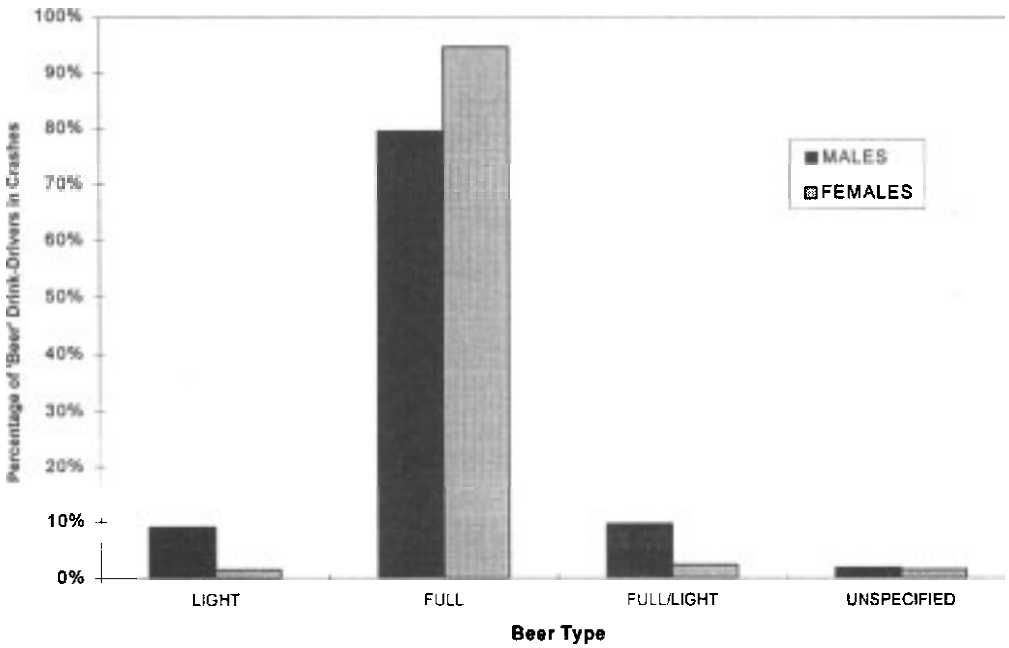


Figure 3.2d: Percentage of Crash-Involved 'Beer' Drink-Drivers for Melbourne by BEER TYPE and SEX



Beer Consumption by Driver Age

Melbourne crash-involved drivers aged between 26 years and 50 years were most likely to consume beer only prior to drink-driving with an estimated proportion of 68%. However, only 53% of older (over 50 years) crash-involved drink-drivers consumed beer only (figure 3.2e). Wine consumption increased with age for Melbourne crash-involved drink-drivers, whereas spirit consumption decreased with age. Beer in combination with other alcohol was estimated to have been consumed in greatest proportions by drivers aged over 50 years. The patterns shown in figure 3.2e are similar to the corresponding on-road age proportions (figure 2.4.1e), except for a slightly greater spirit consumption amongst crash-involved drink-drivers.

Younger crash-involved 'beer' drink-drivers were more likely to consume full-strength beer than older drivers. Nearly 90% of drivers aged under 26 years who were involved in crashes were estimated to have consumed full-strength beer prior to drink-driving (figure 3.2f). Consumption of light beer, however, was greatest amongst crash-involved beer drink-drivers aged between 26 and 50 years, 12%, and least amongst the youngest age-group, 1%.

Note that crash-involved older 'beer' drink-drivers consumed full-strength beer in greater proportions than older drink-drivers in general (figure 2.4.1f). However the reverse trend occurred for light beer consumption. Older drink-drivers in general consumed more light beer than older crash-involved drink-drivers. Tables 2.3and 2.3a in Appendix B give the alcohol and beer types by age for crash-involved drink-drivers in Melbourne.

Figure 3.2e: Percentage of Crash-Involved Drink-Drivers for Melbourne by ALCOHOL TYPE and AGE

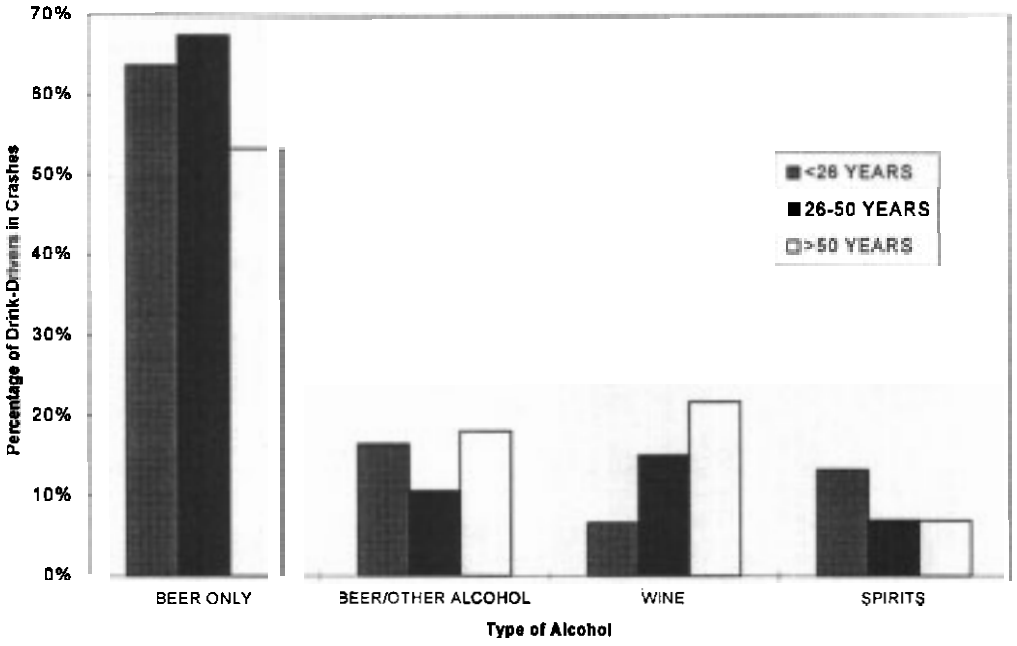
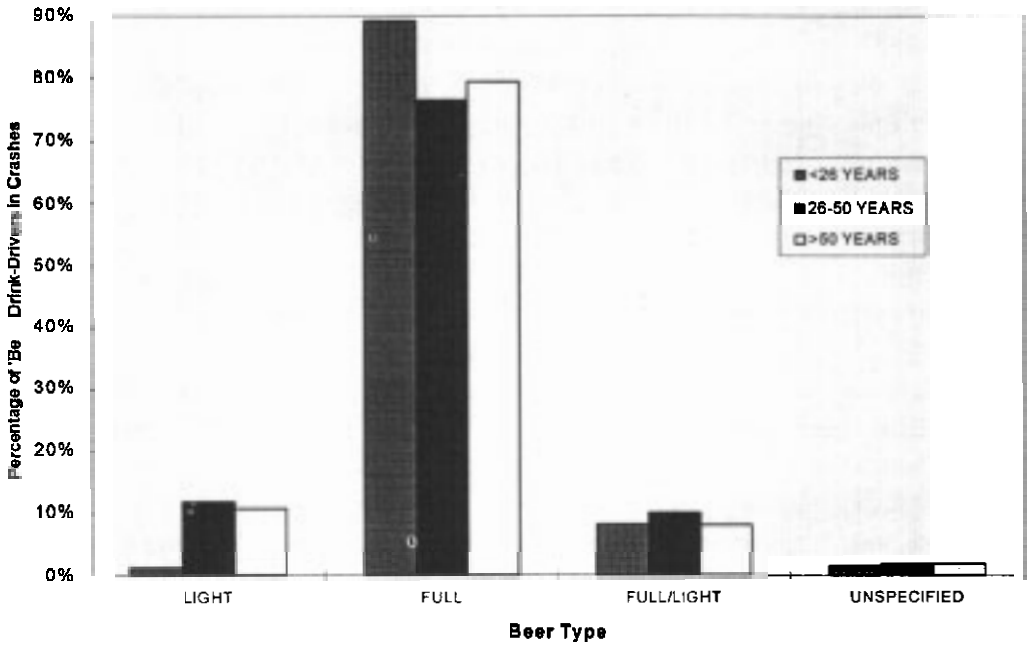


Figure 3.2f: Percentage of Crash-Involved 'Beer' Drink-Drivers for Melbourne by BEER TYPE and AGE



3.3 CRASH-INVOLVED DRINK-DRIVERS IN THE REST OF VICTORIA

Figure 3.3a gives the estimated proportion of drink-drivers involved in crashes for the Rest of Victoria by the type of alcohol they consumed. Beer-only consumption was greatest at 74%, whilst 11% of crash-involved drink-drivers consumed beer in combination with other alcohol. Spirit consumption was also relatively high at 11%, with wine consumption occurring least amongst drink-drivers involved in crashes in the weighted Rest of Victoria sample. Except for spirit consumption the crash-based estimates are similar to the estimates for drink-drivers in general. Spirit consumption amongst crash-involved drink-drivers was more than double that of drink-drivers on the road (figure 2.4.2a).

Beer drink-drivers involved in crashes were most likely to consume full-strength beer with an estimated proportion of 79% (figure 3.2b). Note there is little difference between the 'beer type' estimated proportions for crash-involved drink-drivers and the corresponding general drink-driver estimates (figure 2.4.2b). Tables 2.4 and 2.4a in Appendix B give the percentages of crash-involved drink-drivers by alcohol type and beer type in the Rest of Victoria.

Figure 3.3a: Percentage of Crash-Involved Drink-Drivers for 'Rest of Victoria' by ALCOHOL TYPE consumed

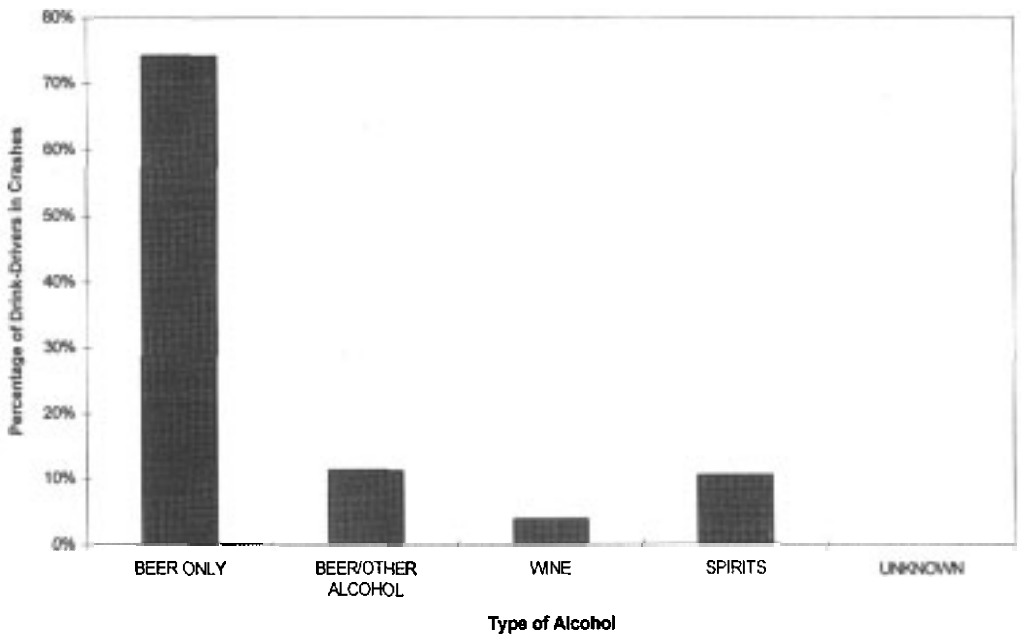
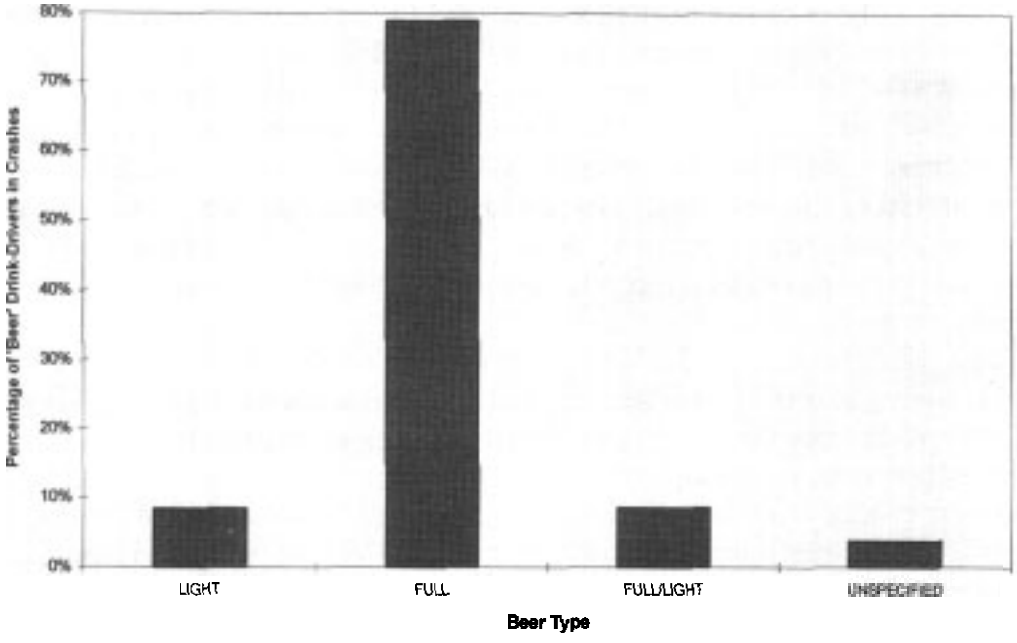


Figure 3.3b: Percentage of Crash-Involved 'Beer' Drink-Drivers for 'Rest of Victoria' by BEER TYPE consumed



Beer Consumption by Driver Sex

Amongst crash-involved drink-drivers in the Rest of Victoria, males consumed beer-only in greater proportions than females, with estimated proportions of 76% and 58% respectively (figure 3.3c). However, for drink-drivers in general in the Rest of Victoria, the male and female proportions were 80% and 54%. Wine consumption, and beer consumption in combination with other alcohol was greater for female crash-involved drink-drivers than for males. The opposite finding resulted for spirit consumption. An estimated 11% of males in crashes consumed spirits prior to drink-driving but only 1% of females did. Spirit consumption was also greater amongst male crash-involved drink-drivers than male drink-drivers in general, 5% (figure 2.4.2c).

Figure 3.3d gives the estimated proportion of beer types consumed by crash-involved 'beer' drink-drivers for both sexes in the Rest of Victoria. Full-strength beer consumption was greater amongst females than males - with estimated proportions of 91% and 78% respectively, whereas crash-involved male 'beer' drink-drivers consumed low alcohol-content beer in greater proportions than females. Tables 2.5 and 2.5a in Appendix B give the alcohol and beer types by sex for crash-involved drink-drivers in the Rest of Victoria.

Figure 3.3c: Percentage of Crash-Involved Drink-Drivers for 'Rest of Victoria' by ALCOHOL TYPE and SEX

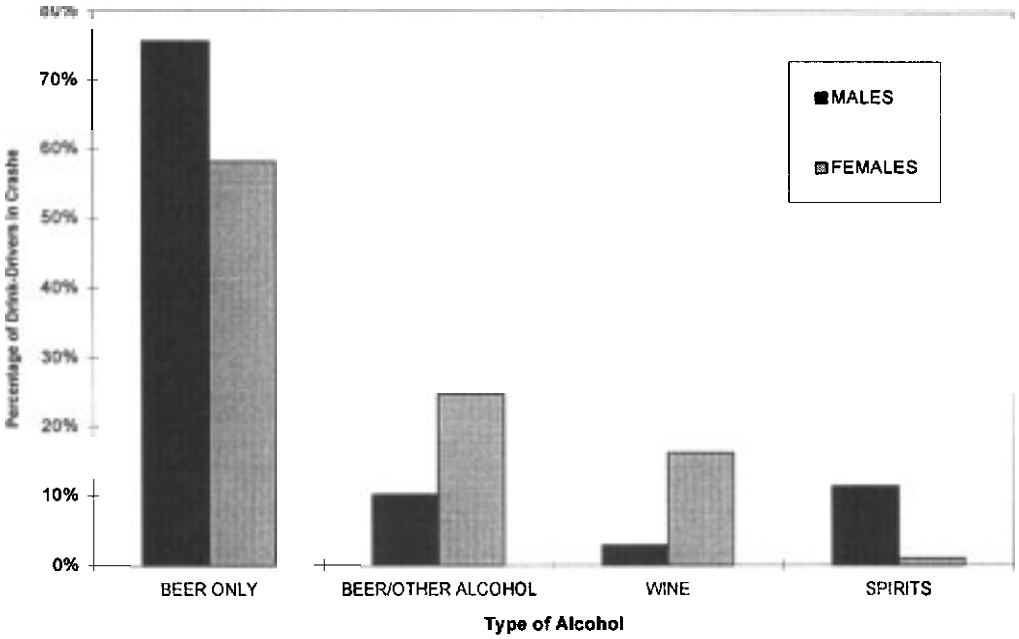
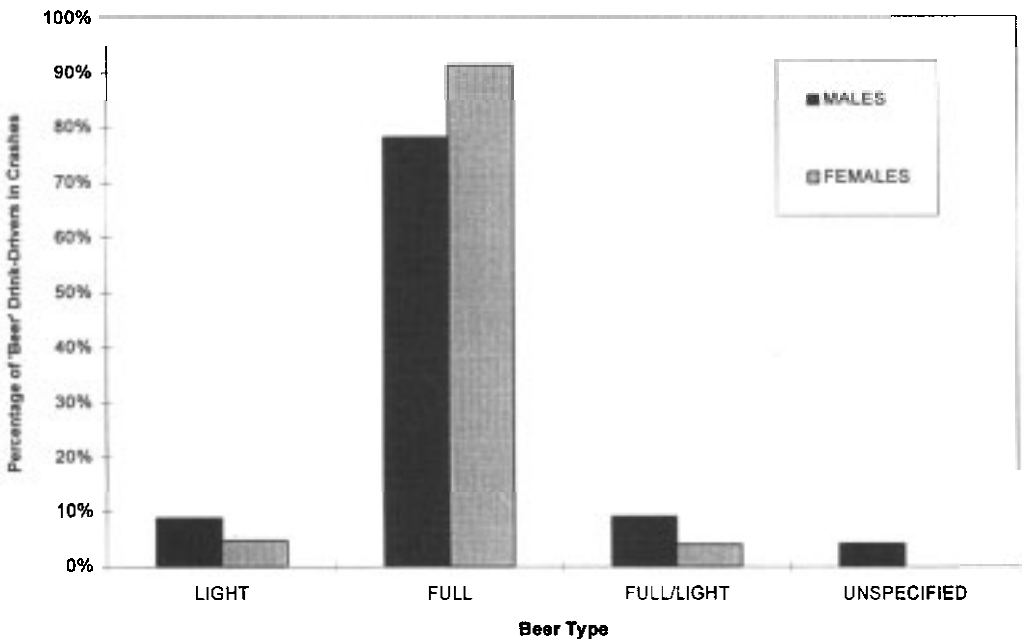


Figure 3.3d: Percentage of Crash-Involved 'Beer' Drink-Drivers for 'Rest of Victoria' by BEER TYPE and SEX



Beer Consumption by Driver Age

The type of alcohol estimated to have been consumed by crash-involved drink-drivers by age-group in the Rest of Victoria is given in figure 3.3e. Consumption of beer only, was greatest amongst drink-drivers aged between 26 years and 50 years, and

least for younger drivers aged below 26 years (ie: estimated proportions of 81% and 66% respectively). Beer in combination with other alcoholic beverages decreased with increasing age, whilst wine consumption increased with age. Spirits were most likely to have been consumed by young drink-drivers involved in crashes in the Rest of Victoria.

Figure 3.3e: Percentage of Crash-Involved Drink-Drivers for 'Rest of Victoria' by ALCOHOL TYPE and AGE

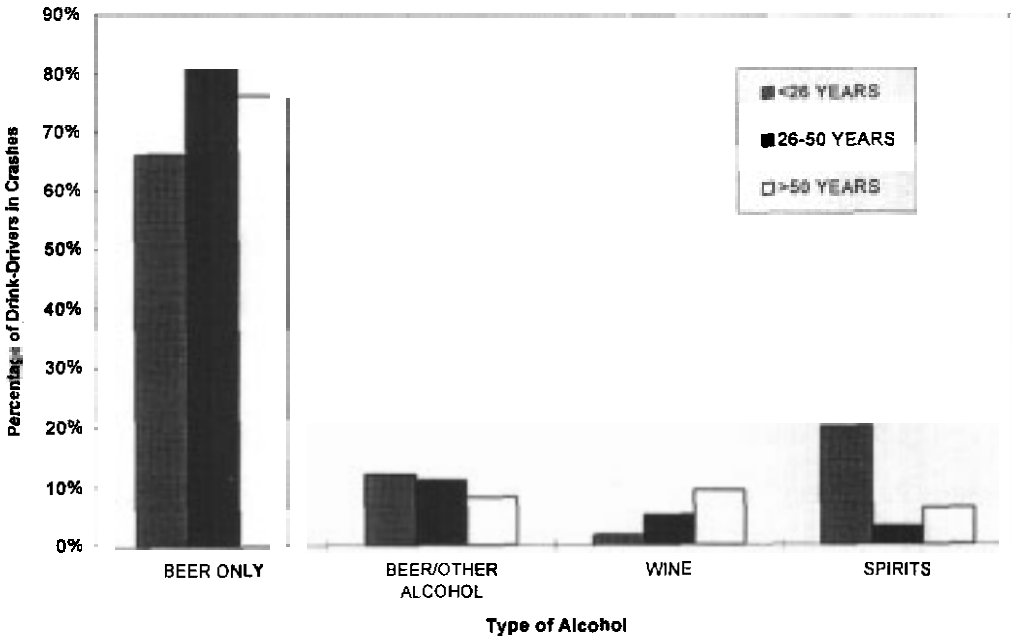


Figure 3.3f Percentage of Crash-Involved 'Beer' Drink-Drivers for 'Rest of Victoria' by BEER TYPE and AGE

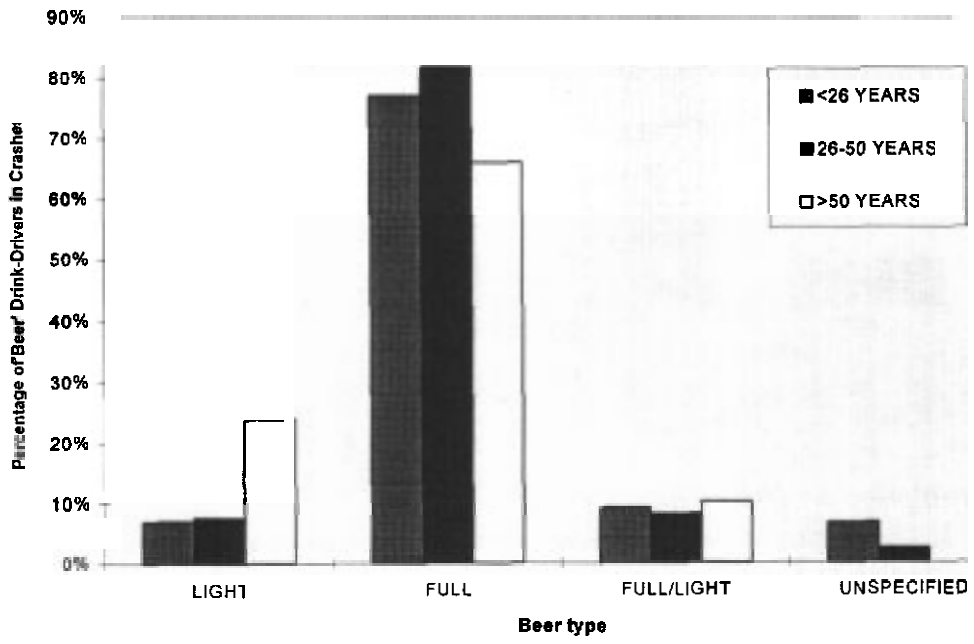


Figure 3.3f gives the estimated proportion of light and full-strength beer consumption amongst beer drink-drivers involved in crashes in the Rest of Victoria. Light beer consumption increased with age, with 24% of older drivers (aged over 50 years) consuming light beer. This estimate is larger than the corresponding on-road low alcohol-content beer proportion for older drivers of 19% (figure 2.4.f). Beer drink-drivers aged between 26 and 50 years, and involved in crashes, were most likely to consume full strength beer, 82%, with older drivers least likely, 66%. The crash-based full-strength beer estimated proportion for older drivers was greater than the corresponding proportion for older drink-drivers in general. Tables 2.6and 2.6a in Appendix B give the alcohol and beer types by age for crash-involved drink-drivers in the Rest of Victoria.

4. ALCOHOL SALES PATTERNS BY ALCOHOL TYPE

The two investigations undertaken in the previous sections provided estimates of the role of beer in drink-driving for Victoria. To establish whether these findings were representative of the situation throughout Australia, Victorian alcohol sales patterns, by type of beverage, were compared with those in other Australian States.

4.1 COMPARISON OF VICTORIA WITH THE REST OF AUSTRALIA

Data on alcohol consumption volumes by type were extracted from the Australian Bureau of Statistics (1993) publication and the Victorian Liquor Commission annual report for the 1992/93 financial year. The alcohol figures by type of beverage were provided in litres consumed and in dollar values purchased. By subtracting the amounts consumed by Victorians from the Australian figures a comparison was then made between Victoria and the Rest of Australia.

The proportions of beer, wine and spirits consumed in litres for Victoria and the Rest of Australia are given in figures 4.1.1 and 4.1.2 (note that the percentages in figure 4.1.2 add to more than 100% due to rounding). Beer consumption as a proportion of the total volume of alcohol consumed, is given in terms of full-strength and low alcohol-content (light) beer.

Figure 4.1.1: Percentage of Alcohol Consumed by ALCOHOL TYPE for VICTORIA, 1992/1993

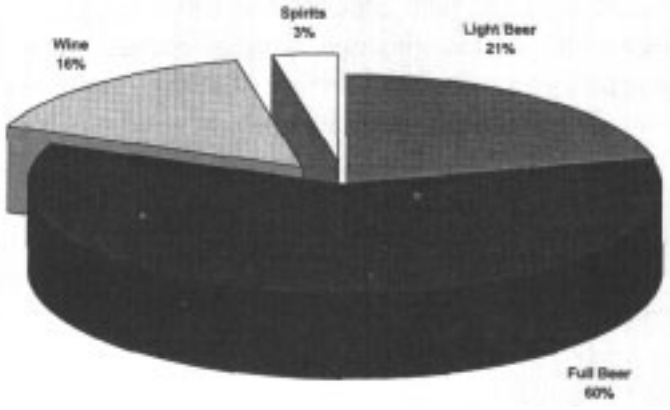
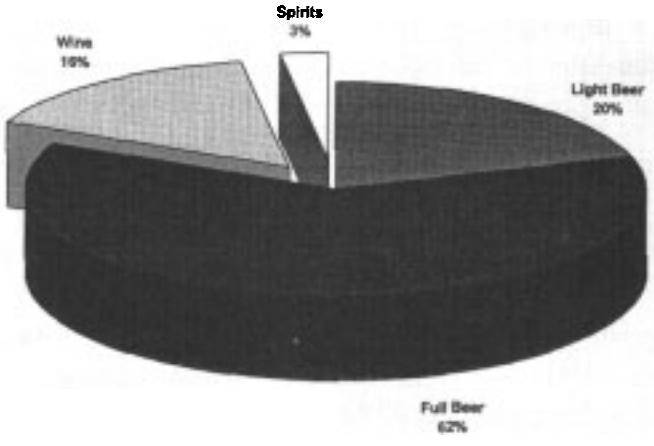


Figure 4.1.2: Percentage of Alcohol Consumed by ALCOHOL TYPE for the REST OF AUSTRALIA, 1992/1993.



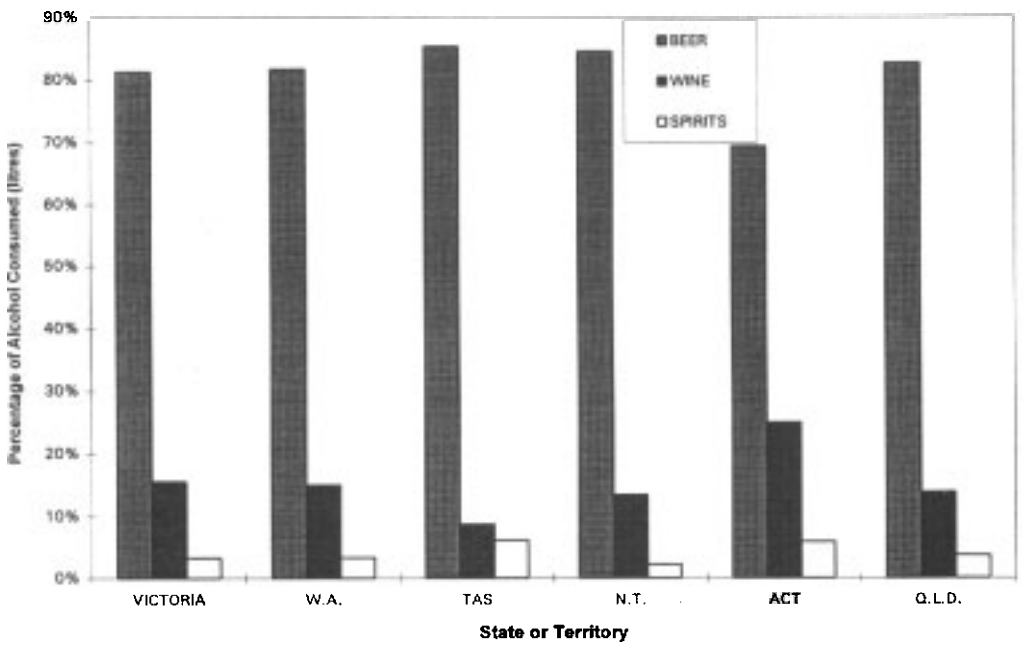
In comparing Figure 4.1 with Figure 4.2, it can be seen that the percentages of beer, (both light and full-strength), wine and spirits consumed in Victoria and the Rest of Australia are all very similar. Victoria consumed marginally more light beer at 21% than the Rest of Australia at 20% for the 1992/1993 financial year. The total beer consumption for both was almost identical as well, with proportions of 81% for Victoria and 82% for the Rest of Australia. Wine and spirits were consumed in equal proportions in Victoria and the Rest of Australia. Sixteen percent of the total alcohol consumed was wine, whilst spirit consumption was less at 3%. Greater detail on the volume of amount of alcohol consumed and the corresponding percentages for Australia, Victoria and the Rest of Australia can be found in Appendix C in tables 3.1, 3.2 and 3.3.

4.2 ALCOHOL CONSUMPTION BY STATE

To further examine alcohol consumption patterns in Victoria compared with the Rest of Australia, alcohol consumption figures were collected from each State, where available. The majority of the states gave these amounts measured in litres. Exceptions include New South Wales who could only provide alcohol sales in terms of the amount purchased, in dollar value, and South Australia who were unable to provide any alcohol consumption data.

Figure 4.2 gives the proportion of beer, wine and spirits consumed for all Australian States and Territories (excluding New South Wales and South Australia), for the financial year, 1992/1993.

Figure 4.2: Percentage of Alcohol Consumed by ALCOHOL TYPE and STATE or TERRITORY, 1992/1993



Victoria showed similar patterns of beer, wine and spirit consumption as Western Australia, Queensland and the Northern Territory. Beer consumption, however, was greatest in Tasmania with a percentage of 85%, and least in the Australian Capital Territory at 69%. Spirit consumption in the Australian Capital Territory and in Tasmania was double that of Victoria (ie: proportions of 6% and 3% respectively). The Australian Capital Territory consumed a larger percentage of wine at 25% than any other jurisdiction. Wine consumption in Tasmania was relatively low at only 9%. Extra detail on alcohol consumption for each Australian state can be found in Appendix C in table 3.4.

Table 3.5 in Appendix C provides a comparison of Victorian and New South Wales alcohol consumption patterns in dollar values, since the New South Wales figures were unavailable in litres. Expenditures on beer, wine and spirits were in similar proportions in Victoria and New South Wales in 1992/1993. However, the percentage of expenditure on low alcohol-content beer in Victoria was more than twice that of New South Wales, with proportions of 13% and 6% respectively.

5. DISCUSSION

By necessity the samples of drink-drivers on the road had to be obtained from Summary Offence Forms completed by Police Breathalyzer Operators at Random Breath Testing stations or via routine Police apprehensions. Due to the sparseness of available apprehensions of drink-drivers at RBT stations in the Rest of Victoria the inclusion of routine Police checks was necessary. Although offences occurring at RBT stations are most likely to be a representative random sample of drink-drivers on the road in general, the inclusion of the routine Police checks creates a bias towards certain driver or vehicle types. Thus the Melbourne and Rest of Victoria samples of drink-drivers on the road collected can only be considered as 'proxy' random samples.

Note also that the answers given by the drink-driver to the Breathalyzer operator may not be entirely accurate. The driver's honesty and their recollection of events prior to apprehension, as well as the possible antagonism towards Police may make some of the responses unreliable. The main results of this study rely on the apprehended drink-drivers describing the type of alcoholic beverages they had consumed truthfully.

A more accurate method would have been to survey representative samples of on-road drink-drivers over the period of the study. The amount and type of alcohol consumed by the driver, as well as their age, sex and place of drinking would have been recorded. This survey method would have allowed a fully random sample of drink-drivers to be selected if constructed validly. Because of time and economic constraints, a survey of this nature was not feasible for this study.

The weighting by relative risks of crash-involvement of the drink-driving population on the road, provided 'pseudo' crash samples of drink-drivers. Hence, the likely pattern of drinking behaviour amongst crash-involved drink-drivers could only be estimated. A survey utilizing hospital admissions data in Melbourne and the Rest of Victoria would have produced a true sample of crash-involved drink-drivers. Drink-drivers involved in crashes with illegal BAC readings, and who were admitted to Victorian hospitals in 1993/1994, could have been surveyed with regard to the alcohol type and volume consumed prior to the crash.

Beer was the most highly consumed alcoholic beverage amongst drink-drivers on the road and those estimated to have been involved in crashes in Melbourne and the Rest of Victoria. The popularity of beer in Australia is likely to have contributed to the large proportions represented by this beverage.

Beer consumption amongst drivers estimated to have been involved in crashes was similar to the on-road drink-driving patterns throughout Victoria. The major difference was the finding that spirit consumption was greater amongst crash-involved drink-drivers than drink-drivers on the road in the Rest of Victoria. This could be explained by the high alcohol content found in spirits, which could result in a higher BAC and hence contribute to a crash.

6. CONCLUSION

This report estimated the proportions of drink-drivers who had consumed beer for both drivers on the road in general and for those involved in crashes. Separate estimates were made for Melbourne and the rest of Victoria during 1993/1994.

It was estimated that 64% of drink-drivers on the road had consumed beer only prior to Police apprehension in Melbourne, with 95% confidence limits on this estimate ranging from 61% to 67%. Amongst drink-driver apprehensions in the rest of Victoria an estimated 78% of drivers had consumed beer only with a confidence interval from 74% to 82%. An additional 13% of drink-drivers on the road in Melbourne and 11% in the rest of Victoria had consumed beer in combination with other alcoholic beverages.

In comparison an estimated 65% of drivers involved in crashes had consumed beer only prior to drink-driving in Melbourne. In the rest of Victoria, the estimated proportion of crash-involved drink-drivers who had consumed beer only was 74%. Additionally an estimated 13% of crash-involved drink-drivers in Melbourne and 11% in the rest of Victoria had consumed beer in combination with other alcohol.

Victorian beer consumption (and alcohol consumption in general) was representative of other Australian States for the 1992/1993 financial year. Hence the estimates of the proportion of drink-drivers who consumed beer in Victoria are likely to reflect the drink-driving patterns of the rest of Australia.

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Appendix A

Drink-Driver Apprehensions

MELBOURNE DRINK-DRIVER APPREHENSIONS

TABLE 1.1
Percentages of ALCOHOL TYPES Consumed Amongst Drink-Drivers, Melbourne

Alcohol Type	Frequency	Percentage	Confidence Interval (%)
Beer Only	647	63.7%	(60.8 , 66.7)
Beer/Other Alcohol	129	12.7%	(10.7 , 14.8)
Wine	152	15.0%	(12.8 , 17.2)
Spirits	84	8.3%	(6.6 , 10.0)
Unknowns	3	0.3%	(0.6 , 0.3)
Total	1015	100.0%	

TABLE 1.1a
Percentages of BEER TYPES Consumed Amongst Drink-Drivers, Melbourne

Beer Type	Frequency	Percentage	Confidence Interval (%)
Light	67	10.4%	(8.0 , 12.7)
Full	507	78.4%	(75.2 , 81.5)
Full/Light	61	9.4%	(7.2 , 11.7)
Unspecified	12	1.9%	(0.8 , 2.9)
Total	647	100.0%	

TABLE 1.2
Percentages of Drink-Drivers by ALCOHOL TYPE and SEX, Melbourne

Sex group		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total *
Males	Frequency	612	115	77	65	869
	Percent	70.4%	13.2%	8.9%	7.5%	100.0%
	Confidence Interval (%)	(67.4 , 73.5)	(11.0 , 15.5)	(7.0 , 10.8)	(5.7 , 9.2)	
Females	Frequency	35	13	75	19	142
	Percent	24.6%	9.2%	52.8%	13.4%	100.0%
	Confidence Interval (%)	(17.6 , 31.7)	(4.4 , 13.9)	(44.6 , 61.0)	(7.8 , 19.0)	

TABLE 1.2a
Percentages of Drink-Drivers by BEER TYPE and SEX, Melbourne

Sex group		Light	Full	Full/Light	Unspecified	Total
Males	Frequency	66	476	60	10	612
	Percent	10.8%	77.8%	9.8%	1.6%	100.0%
	Confidence Interval (%)	(8.3 , 13.2)	(74.5 , 81.1)	(7.4 , 12.2)	(0.6 , 2.6)	
Females	Frequency	1	31	1	2	35
	Percent	2.9%	88.6%	2.9%	5.7%	100.0%
	Confidence Interval (%)	(0.0 , 8.4)	(78.0 , 99.1)	(0.0 , 8.4)	(0.0 , 13.4)	

TABLE 1.3
Percentages of Drink-Drivers by ALCOHOL TYPE by AGE, Melbourne

Age Group		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total *
<26 years	Frequency	116	27	10	19	172
	Percent	67.4%	15.7%	5.8%	11.0%	100.0%
	Confidence Interval (%)	(60.4 , 74.4)	(10.3 , 21.1)	(2.3 , 9.3)	(6.4 , 15.7)	
26 - 50 years	Frequency	446	72	106	53	677
	Percent	65.9%	10.6%	15.7%	7.8%	100.0%
	Confidence Interval (%)	(62.3 , 69.5)	(8.3 , 13.0)	(12.9 , 18.4)	(5.8 , 9.9)	
>50 years	Frequency	85	30	36	12	163
	Percent	52.1%	18.4%	22.1%	7.4%	100.0%
	Confidence Interval (%)	(44.5 , 59.8)	(12.5 , 24.4)	(15.7 , 28.5)	(3.4 , 11.4)	

TABLE 1.3a
Percentages of Drink-Drivers by BEER TYPE and AGE, Melbourne

Age Group		Light	Full	Full/Light	Unspecified	Total
<26 years	Frequency	2	101	11	2	116
	Percent	1.7%	87.1%	9.5%	1.7%	100.0%
	Confidence Interval (%)	(0.0 , 4.1)	(81.0 , 93.2)	(4.2 , 14.8)	(0.0 , 4.1)	
26 - 50 years	Frequency	51	345	41	9	446
	Percent	11.4%	77.4%	9.2%	2.0%	100.0%
	Confidence Interval (%)	(8.5 , 14.4)	(73.5 , 81.2)	(6.5 , 11.9)	(0.7 , 3.3)	
>50 years	Frequency	14	61	9	1	85
	Percent	16.5%	71.8%	10.6%	1.2%	100.0%
	Confidence Interval (%)	(8.6 , 24.4)	(62.2 , 81.3)	(4.0 , 17.1)	(0.0 , 3.5)	

TABLE 1.4
Percentages of Drink-Drivers by ALCOHOL TYPE and BAC, Melbourne

BAC group		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total *
<0.099	Frequency	228	50	62	38	378
	Percent	60.3%	13.2%	16.4%	10.1%	100.0%
	Confidence Interval (%)	(55.4 , 65.2)	(9.8 , 16.6)	(12.7 , 20.1)	(7.0 , 13.1)	
0.1-0.149	Frequency	234	39	47	28	348
	Percent	67.2%	11.2%	13.5%	8.0%	100.0%
	Confidence Interval (%)	(62.3 , 72.2)	(7.9 , 14.5)	(9.9 , 17.1)	(5.2 , 10.9)	
>0.15	Frequency	185	40	43	18	286
	Percent	64.7%	14.0%	15.0%	6.3%	100.0%
	Confidence Interval (%)	(59.1 , 70.2)	(10.0 , 18.0)	(10.9 , 19.2)	(3.5 , 9.1)	

TABLE 1.4a
Percentages of Drink-Drivers by BEER TYPE by BAC, Melbourne

BAC group		Light	Full	Full/Light	Unspecified	Total
<0.099	Frequency	27	178	19	4	228
	Percent	11.8%	78.1%	8.3%	1.8%	100.0%
	Confidence Interval (%)	(7.6 , 16.0)	(72.7 , 83.4)	(4.7 , 11.9)	(0.1 , 3.5)	
0.1-0.149	Frequency	24	179	25	6	234
	Percent	10.3%	76.5%	10.7%	2.6%	100.0%
	Confidence Interval (%)	(6.4 , 14.1)	(71.1 , 81.9)	(6.7 , 14.6)	(0.5 , 4.6)	
>0.15	Frequency	16	150	17	2	185
	Percent	8.6%	81.1%	9.2%	1.1%	100.0%
	Confidence Interval (%)	(4.6 , 12.7)	(75.4 , 86.7)	(5.0 , 13.4)	(0.0 , 2.6)	

TABLE 1.5
Percentages of Drink-Drivers by ALCOHOL TYPE by PLACE OF DRINKING, Melbourne

Place of Drinking		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total *
Hotel	Frequency	230	46	31	24	331
	Percent	69.5%	13.9%	9.4%	7.3%	100.0%
	Confidence Interval (%)	(64.5 , 74.4)	(10.2 , 17.6)	(6.2 , 12.5)	(4.5 , 10.0)	
Home	Frequency	75	13	32	14	134
	Percent	56.0%	9.7%	23.9%	10.4%	100.0%
	Confidence Interval (%)	(47.6 , 64.4)	(4.7 , 14.7)	(16.7 , 31.1)	(5.3 , 15.6)	
Restaurant	Frequency	16	15	24	5	60
	Percent	26.7%	25.0%	40.0%	8.3%	100.0%
	Confidence Interval (%)	(15.5 , 37.9)	(14.0 , 36.0)	(27.6 , 52.4)	(1.3 , 15.3)	
Work	Frequency	78	9	8	9	104
	Percent	75.0%	8.7%	7.7%	8.7%	100.0%
	Confidence Interval (%)	(66.7 , 83.3)	(3.3 , 14.1)	(2.6 , 12.8)	(3.3 , 14.1)	
Nightclub	Frequency	23	3	5	2	33
	Percent	69.7%	9.1%	15.2%	6.1%	100.0%
	Confidence Interval (%)	(54.0 , 85.4)	(0.0 , 18.9)	(2.9 , 27.4)	(0.0 , 14.2)	
Sports club	Frequency	50	9	3	2	64
	Percent	78.1%	14.1%	4.7%	3.1%	100.0%
	Confidence Interval (%)	(68.0 , 88.3)	(5.5 , 22.6)	(0.0 , 9.9)	(0.0 , 7.4)	
Other Res.	Frequency	108	16	34	17	175
	Percent	61.7%	9.1%	19.4%	9.7%	100.0%
	Confidence Interval (%)	(54.5 , 68.9)	(4.9 , 13.4)	(13.6 , 25.3)	(5.3 , 14.1)	
Other	Frequency	54	13	10	8	85
	Percent	63.5%	15.3%	11.8%	9.4%	100.0%
	Confidence Interval (%)	(53.3 , 73.8)	(7.6 , 22.9)	(4.9 , 18.6)	(3.2 , 15.6)	

TABLE 1.5a
Percentages of Drink-Drivers by ALCOHOL TYPE by PLACE OF DRINKING, Melbourne

Place of Drinking		Light	Full	Full/Light	Unspecified	Total
Hotel	Frequency	28	172	26	4	230
	Percent	12.2%	74.8%	11.3%	1.7%	100.0%
	Confidence Interval (%)	(7.9 , 16.4)	(69.2 , 80.4)	(7.2 , 15.4)	(0.0 , 3.4)	
Home	Frequency	9	63	3	0	75
	Percent	12.0%	84.0%	4.0%	0.0%	100.0%
	Confidence Interval (%)	(4.6 , 19.4)	(75.7 , 92.3)	(0.0 , 8.4)	(0.0 , 0.0)	
Restaurant	Frequency	2	11	2	1	16
	Percent	12.5%	68.8%	12.5%	6.3%	100.0%
	Confidence Interval (%)	(0.0 , 28.7)	(46.0 , 91.5)	(0.0 , 28.7)	(0.0 , 18.1)	
Work	Frequency	11	58	9	0	78
	Percent	14.1%	74.4%	11.5%	0.0%	100.0%
	Confidence Interval (%)	(7.5 , 25.3)	(78.4 , 94.7)	(5.3 , 21.6)	(0.0 , 0.0)	
Nightclub	Number	1	18	3	1	23
	Percent	4.3%	78.3%	13.0%	4.3%	100.0%
	Confidence Interval (%)	(0.0 , 12.7)	(61.4 , 95.1)	(0.0 , 26.8)	(0.0 , 12.7)	
Sports club	Frequency	7	34	7	2	50
	Percent	14.0%	68.0%	14.0%	4.0%	100.0%
	Confidence Interval (%)	(4.4 , 23.6)	(55.1 , 80.9)	(4.4 , 23.6)	(0.0 , 9.4)	
Other Res.	Frequency	4	98	5	1	108
	Percent	3.7%	90.7%	4.6%	0.9%	100.0%
	Confidence Interval (%)	(0.1 , 7.3)	(85.3 , 96.2)	(0.7 , 8.6)	(0.0 , 2.7)	
Other	Frequency	4	43	5	2	54
	Percent	7.4%	79.6%	9.3%	3.7%	100.0%
	Confidence Interval (%)	(0.4 , 14.4)	(68.9 , 90.4)	(1.5 , 17.0)	(0.0 , 8.7)	

* Frequencies will not **total** to 1015 due to the non-responses of offenders in the certain sections of the survey.

DRINK-DRIVERS APPREHENDED IN THE REST OF VICTORIA

TABLE 1.6
Percentages of ALCOHOL TYPES Consumed Amongst Drink-Drivers, Rest of Victoria

Alcohol Type	Frequency	Percentage	Confidence Interval (%)
Beer Only	414	78.0%	(74.4 , 81.5)
Beer /Other Alcohol	59	11.1%	(8.4 , 13.8)
Wine	30	5.6%	(3.7 , 7.6)
Spirits	28	5.3%	(3.4 , 7.2)
Total	531	100.0%	

TABLE 1.6a
Percentages of BEER TYPES Consumed Amongst Drink-Drivers, Rest of Victoria

Beer Type	Frequency	Percentage	Confidence Interval (%)
Light	39	9.4%	(6.6 , 12.2)
Full	330	79.7%	(75.8 , 83.6)
Full/Light	35	8.5%	(5.8 , 11.1)
Unspecified	10	2.4%	(0.9 , 3.9)
Total	414	100.0%	

TABLE 1.7
Percentages of Drink-Drivers by ALCOHOL TYPE and SEX, Rest of Victoria

Sex group		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
Males	Frequency	388	49	20	26	483
	Percent	80.3%	10.1%	4.1%	5.4%	100.0%
	Confidence Interval (%)	(76.8 , 83.9)	(7.5 , 12.8)	(2.4 , 5.9)	(3.4 , 7.4)	
Females	Frequency	26	10	10	2	48
	Percent	54.2%	20.8%	20.8%	4.2%	100.0%
	Confidence Interval (%)	(40.1 , 68.3)	(9.3 , 32.3)	(9.3 , 32.3)	(0.0 , 9.8)	

TABLE 1.7a
Percentages of Drink-Drivers by BEER TYPES and SEX, Rest of Victoria

Sex group		Light	Full	Full/Light	Unspecified	Total
Males	Frequency	38	306	34	10	388
	Percent	9.8%	78.9%	8.8%	2.6%	100.0%
	Confidence Interval (%)	(6.8 , 12.8)	(74.8 , 82.9)	(5.9 , 11.6)	(1.0 , 4.2)	
Females	Frequency	1	24	1	0	26
	Percent	3.8%	92.3%	3.8%	0.0%	100.0%
	Confidence Interval (%)	(0.0 , 11.2)	(82.1 , 100.00)	(0.0 , 11.2)	(0.0 , 0.0)	

TABLE 1.8
Percentages of Drink-Drivers by ALCOHOL TYPE and AGE, Rest of Victoria

Age Group		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
<26 years	Frequency	102	19	4	12	137
	Percent	74.5%	13.9%	2.9%	8.8%	100.0%
	Confidence Interval (%)	(67.1 , 81.8)	(8.1 , 19.7)	(0.1 , 5.7)	(4.0 , 13.5)	
26 - 50 year	Frequency	260	35	18	11	324
	Percent	80.2%	10.8%	5.6%	3.4%	100.0%
	Confidence Interval (%)	(75.9 , 84.6)	(7.4 , 14.2)	(3.1 , 8.0)	(1.4 , 5.4)	
>50 years	Frequency	52	5	8	5	70
	Percent	74.3%	7.1%	11.4%	7.1%	100.0%
	Confidence Interval (%)	(64.0 , 84.5)	(1.1 , 13.2)	(4.0 , 18.9)	(1.1 , 13.2)	

TABLE 1.8a
Percentages of Drink-Drivers by BEER TYPE and AGE, Rest of Victoria

Age Group		Light	Full	Full/Light	Unspecified	Total
<26 years	Frequency	7	84	7	4	102
	Percent	6.9%	82.4%	6.9%	3.9%	100.0%
	Confidence Interval (%)	(2.0 , 11.8)	(75.0 , 89.8)	(2.0 , 11.8)	(0.2 , 7.7)	
26 - 50 year	Frequency	22	208	24	6	260
	Percent	8.5%	80.0%	9.2%	2.3%	100.0%
	Confidence Interval (%)	(5.1 , 11.8)	(75.1 , 84.9)	(5.7 , 12.7)	(0.5 , 4.1)	
>50 years	Frequency	10	38	4	0	52
	Percent	19.2%	73.1%	7.7%	0.0%	100.0%
	Confidence Interval (%)	(8.5 , 29.9)	(61.0 , 85.1)	(0.4 , 14.9)	(0.0 , 0.0)	

TABLE 1.9
Percentages of Drink-Drivers by ALCOHOL TYPE and BAC, Rest of Victoria

BAC group		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
<0.099	Frequency	146	18	14	8	186
	Percent	78.5%	9.7%	7.5%	4.3%	100.0%
	Confidence Interval (%)	(72.6 , 84.4)	(5.4 , 13.9)	(3.7 , 11.3)	(1.4 , 7.2)	
0.1-0.149	Frequency	132	17	8	13	170
	Percent	77.6%	10.0%	4.7%	7.6%	100.0%
	Confidence Interval (%)	(71.4 , 83.9)	(5.5 , 14.5)	(1.5 , 7.9)	(3.7 , 11.6)	
>0.15	Frequency	136	24	8	7	175
	Percent	77.7%	13.7%	4.6%	4.0%	100.0%
	Confidence Interval (%)	(71.5 , 83.9)	(8.6 , 18.8)	(1.5 , 7.7)	(1.1 , 6.9)	

TABLE 1.9a
Percentages of Drink-Drivers by BEER TYPE and BAC, Rest of Victoria

BAC group		Light	Full	Full/Light	Unspecified	Total
<0.099	Frequency	14	116	13	3	146
	Percent	9.6%	79.5%	8.9%	2.1%	100.0%
	Confidence Interval (%)	(4.8 , 14.4)	(72.9 , 86.0)	(4.3 , 13.5)	(0.0 , 4.4)	
0.1-0.149	Frequency	13	106	11	2	132
	Percent	9.8%	80.3%	8.3%	1.5%	100.0%
	Confidence Interval (%)	(4.8 , 14.9)	(73.5 , 87.1)	(3.6 , 13.0)	(0.0 , 3.6)	
>0.15	Frequency	12	108	11	5	136
	Percent	8.8%	79.4%	8.1%	3.7%	100.0%
	Confidence Interval (%)	(4.1 , 13.6)	(72.6 , 86.2)	(3.5 , 12.7)	(0.5 , 6.8)	

TABLE 1.10
Percentages of Drink-Drivers by ALCOHOL TYPE and PLACE OF DRINKING, Rest of Victoria

Place of Drinking		Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
Hotel	Frequency	160	18	5	7	190
	Percent	84.2%	9.5%	2.6%	3.7%	100.0%
	Confidence Interval (%)	(79.0 , 84.2)	(5.3 , 13.6)	(0.4 , 4.9)	(1.0 , 6.4)	
Home	Frequency	62	10	9	8	89
	Percent	69.7%	11.2%	10.1%	9.0%	100.0%
	Confidence Interval (%)	(60.1 , 79.2)	(4.7 , 17.8)	(3.8 , 16.4)	(3.0 , 14.9)	
Restaurant	Frequency	2	3	3	1	9
	Percent	22.2%	33.3%	33.3%	11.1%	100.0%
	Confidence Interval (%)	(0.0 , 49.4)	(2.5 , 64.1)	(2.5 , 64.1)	(0.0 , 31.6)	
Work	Frequency	13	1			14
	Percent	92.9%	7.1%	0.0%	0.0%	100.0%
	Confidence Interval (%)	(79.4 , 100.00)	(0.0 , 20.6)	(0.0 , 0.0)	(0.0 , 0.0)	
Nightclub	Frequency	23	2			25
	Percent	92.0%	8.0%	0.0%	0.0%	100.0%
	Confidence Interval (%)	(81.4 , 102.6)	(18.6 , 0.0)	(0.0 , 0.0)	(0.0 , 0.0)	
Sports Club	Frequency	13	3	1	1	18
	Percent	72.2%	16.7%	5.6%	5.6%	100.0%
	Confidence Interval (%)	(51..5 , 92.9)	(0.0 , 33.9)	(0.0 , 16.1)	(0.0 , 16.1)	
Other Res	Frequency	64	8	5	6	83
	Percent	77.1%	9.6%	6.0%	7.2%	100.0%
	Confidence Interval (%)	(68.1 , 86.1)	(3.3 , 16.0)	(0.9 , 11.1)	(1.7 , 12.8)	
Other	Frequency	62	10	6	3	81
	Percent	76.5%	12.3%	7.4%	3.7%	100.0%
	Confidence Interval (%)	(67.3 , 85.8)	(5.2 , 19.5)	(1.7 , 13.1)	(0.0 , 7.8)	

TABLE 1.10a
Percentages of Drink-Drivers by BEER TYPE and PLACE OF DRINKING, Rest of Victoria

Place of Drinking		Light	Full	Full/Light	Unspecified	Total
Hotel	Frequency	15	123	16	6	160
	Percent	9.4%	76.9%	10.0%	3.8%	100.0%
	Confidence Interval (%)	(4.9 , 13.9)	(70.3 , 83.4)	(5.4 , 14.6)	(0.8 , 6.7)	
Home	Frequency	5	52	4	1	62
	Percent	8.1%	83.9%	6.5%	1.6%	100.0%
	Confidence Interval (%)	(1.3 , 14.8)	(74.7 , 93.0)	(0.3 , 12.6)	(0.0 , 4.7)	
Restaurant	Frequency	0	2	0	0	2
	Percent	0.0%	100.0%	0.0%	0.0%	100.0%
	Confidence Interval (%)	(0.0 , 0.0)	(100.0 , 100.0)	(0.0 , 0.0)	(0.0 , 0.0)	
Work	Frequency	0	11	2	0	13
	Percent	0.0%	84.6%	15.4%	0.0%	100.0%
	Confidence Interval (%)	(0.0 , 0.0)	(65.0 , 100.0)	(0.0 , 35.0)	(0.0 , 0.0)	
Nightclub	Frequency	2	18	3	0	23
	Percent	8.7%	78.3%	13.0%	0.0%	100.0%
	Confidence Interval (%)	(0.0 , 20.2)	(61.4 , 95.1)	(0.0 , 26.8)	(0.0 , 0.0)	
Sports club	Frequency	1	11	1	0	13
	Percent	7.7%	84.6%	7.7%	0.0%	100.0%
	Confidence Interval (%)	(0.0 , 22.2)	(65.0 , 100.0)	(0.0 , 22.2)	(0.0 , 0.0)	
Other Res.	Frequency	7	54	3	0	64
	Percent	10.9%	84.4%	4.7%	0.0%	100.0%
	Confidence Interval (%)	(3.3 , 18.6)	(75.5 , 93.3)	(0.0 , 9.9)	(0.0 , 0.0)	
Other	Frequency	6	50	4	2	62
	Percent	9.7%	80.6%	6.5%	3.2%	100.0%
	Confidence Interval (%)	(2.3 , 17.0)	(70.8 , 90.5)	(0.3 , 12.6)	(0.0 , 7.6)	

Appendix B

Estimated Crash-Involved Drink-Driver Apprehensions

TABLE 2.1
Percentages of ALCOHOL TYPES Consumed Amongst Crash-Involved Drink-Drivers, Melbourne

Alcohol Type	Percentage
Beer Only	65.2%
Wine	13.1%
Spirits	8.7%
Unknowns	0.1%
Total	100.0%

TABLE 2.1a
Percentages of BEER TYPES Consumed Amongst Crash-Involved Drink-Drivers, Melbourne

Beer Type	Percentage
Light	8.6%
Full	80.3%
Full/Light	9.3%
Unspecified	1.8%
Total	100.0%

Sex Group	Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
Males	70.8%	12.7%	8.3%	8.2%	100.0%
Females	26.6%	13.6%	46.9%	12.9%	100.0%

Sex Group	Light	Full	Full/Light	Unspecified	Total

TABLE 2..3
Percentages of Crash-Involved Drink-Drivers by ALCOHOL TYPE and AGE, Melbourne

Age Group	Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
<26 years	63.7%	16.4%	6.6%	13.3%	100.0%
26-50 years	67.5%	10.6%	15.0%	6.9%	100.0%
>50 years	53.3%	18.0%	21.8%	6.9%	100.0%

Age Group	Light	Full	Full/Light	Unspecified	Total
<26 years	1.2%	89.2%	8.1%	1.5%	100.0%
26-50 years	11.6%	76.6%	9.9%	1.9%	100.0%
>50 years	10.6%	79.5%	8.0%	1.9%	100.0%

TABLE 2.4
Percentages of ALCOHOL TYPES Consumed Amongst Crash-Involved Drink-Drivers, Rest of Victoria

Alcohol Type	Percentage
Beer Only	74.2%
Beer/Other Alcohol	11.3%
Wine	3.9%
Spirits	10.5%
Total	100.0%

TABLE 2.4a
Percentages of BEER TYPES Consumed Amongst Crash-Involved Drink-Drivers, Rest of Victoria

Beer Type	Percentage
Light	8.5%
Full	79.0%
Full/Light	8.6%
Unspecified	3.9%
Total	100.0%

TABLE 2.5
Percentages of Crash-Involved Drink-Drivers by ALCOHOL TYPE and SEX, Rest of Victoria

Sex Group	Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
Males	75.6%	10.2%	2.8%	11.4%	100.0%
Females	58.3%	24.7%	16.1%	1.0%	100.0%

TABLE 2.5a
Percentages of Crash-Involved Drink-Drivers by BEER TYPE and SEX, Rest of Victoria

Sex Group	Light	Full	Full/Light	Unspecified	Total
Males	8.8%	78.2%	9.0%	4.1%	100.0%
Females	4.7%	91.3%	4.0%	0.0%	100.0%

TABLE 2.6
Percentages of Crash-Involved Drink-Drivers by ALCOHOL TYPE and AGE, Rest of Victoria

Age Group	Beer Only	Beer/Other Alcohol	Wine	Spirits	Total
<26 years	66.2%	12.1%	1.7%	20.1%	100.0%
26-50 years	80.8%	11.1%	5.1%	3.1%	100.0%
>50 years	76.2%	8.2%	9.3%	6.3%	100.0%

TABLE 2.6a
Percentages of Crash-Involved Drink-Drivers by BEER TYPE and AGE, Rest of Victoria

Age Group	Light	Full	Full/Light	Unspecified	Total
<26 years	7.0%	77.1%	9.2%	6.7%	100.0%
26-50 years	7.6%	81.9%	8.1%	2.4%	100.0%
>50 years	23.9%	66.1%	10.1%	0.0%	100.0%

Appendix C

Alcohol Sales Pattern by Alcohol Type

TABLE 3.1
Consumption of Beer/Wine/Spirits for Australia - 92/93

Alcohol Type	Amount ('000 Litres)	Percentage
Light Beer	417655	20.3%
Full Beer	1262199	61.4%
Total Beer	1679854	81.8%
Wine	319463	15.5%
Spirits**	55268	2.7%
Total	2054585	100.0%

TABLE 3.2
Consumption of Beer/Wine/Spirits for Victoria - 92/93

Alcohol Type	Amount ('000 Litres)	Percentage
Light Beer	90275	21.1%
Full Beer	257515	60.1%
Total Beer	347790	81.2%
Wine	66560	15.5%
Spirits	13978	3.3%
Total	428328	100.0%

TABLE 3.3
Consumption of Beer/Wine/Spirits for The Rest of Australia - 92/93

Alcohol Type	Amount ('000 Litres)	Percentage
Light Beer	327380	20.1%
Full Beer	1004684	61.8%
Total Beer	1332064	81.9%
Wine	252903	15.6%
Spirits	41289	2.5%
Total	1626256	100.0%

** An amount for the litres of spirits consumed in Australia was obtained by dividing the spirits measured in alcoholic content, Australian Bureau of Statistics (1993), by 37% .

TABLE 3.4
STATE AND TERRITORY COMPARISONS OF LIQUOR CONSUMPTION FOR THE 1992/93 FINANCIAL YEAR (LITRES)

STATE/ TERRITORY		BEER			WINE			SPIRITS	TOTAL
		Light Beer	Full Beer	TOTAL BEER	L.A. Wine	Ord'y Wine	TOTAL WINE		
VIC.	Amount	90,274,880	257,515,209	347,790,089	289,044	66,271,289	66,560,333	13,978,073	428,328,495
	Percent	21.1%	60.1%	81.2%	0.1%	15.5%	15.5%	3.3%	100.0%
W.A.	Amount	69,178,000	111,054,000	180,232,000	1,986,000	31,184,000	33,170,000	7,377,000	220,779,000
	Percent	31.3%	50.3%	81.6%	0.9%	14.1%	15.0%	3.3%	100.0%
TAS.	Amount			49,923,934			5,081,598	3,593,786	58,599,318
	Percent			85.2%			8.7%	6.1%	100.0%
N.T.	Amount	9,735,161	19,099,178	28,834,339	9,595	4,576,986	4,586,581	760,285	34,181,205
	Percent	28.5%	55.9%	84.4%	0.03%	13.4%	13.4%	2.2%	100.0%
ACT.	Amount	3,767,592	28,803,540	32,571,132		11,687,215	11,687,215	2,751,587	47,009,934
	Percent	8.0%	61.3%	69.3%		24.9%	24.9%	5.9%	100.0%
QLD	Amount			342,494,122			57,303,603	15,085,763	414,883,488
	Percent			82.6%			13.8%	3.6%	100.0%
S.A.	Amount			N/A			N/A		N/A
NSW	Amount			N/A			N/A		N/A

* A.C.T figures for LA Beer were only estimates for the first 3 quarters of 1992/93

TABLE 3.5
VICTORIA AND NEW SOUTH WALES COMPARISON OF LIQUOR CONSUMPTION FOR THE 1992/93 FINANCIAL YEAR ($)

STATE		BEER			WINE			SPIRITS	TOTAL
		Light Beer	Full Beer	TOTAL BEER	L.A. Wine	Ord'y Wine	TOTAL WINE		
VIC.	Value	147,402,385	511,856,949	659,259,334	554,765	265,976,128	266,530,893	233,083,868	1,158,874,095
	Percent	12.7%	44.2%	56.9%	0.05%	23.0%	23.0%	20.1%	100.0%
NSW	Value	122,568,000	1,011,936,000	1,134,504,000		464,191,000	464,191,000	445,023,000	2,043,718,000
	Percent	6.0%	49.5%	55.5%		22.7%	22.7%	21.8%	100.0%