The effects of select socialisation agents in adolescent choices about alcohol

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Abstract

This research project focuses on consumers of alcoholic beverages aged 13 to 17 years. In particular, it examines the influences of social factors on individual and group consumption of alcohol. The research examines the powerful social factors, such as peer group association and parental approval, as compared to marketing factors, such as television advertising, sales promotions and brand merchandise, and the influence these factors have on the creation of underage niche markets. The main focus is the relationship between these factors and the preference for select alcoholic brands by underage consumers. Potential gender differences, age and drinking situations are also considered.

Two models relating to adolescent alcohol choices are developed. The first model is for adolescent alcohol consumption and proposes socialisation agents that influence the adolescents’ decision of whether to drink alcohol. The second model is for adolescents’ alcohol brand choice and proposes the influences on the choice of alcoholic brand. This research covers important social issues by examining factors influencing underage drinking. The increasing concern expressed by parents, educators, health workers and the government about underage drinking is bringing the topic to the attention of policy makers and the general public. The research has contributed to the debate by adding a rationalisation of both psychological factors and market driven influences to provide a broader understanding of the issues.
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Chapter 1

Introduction

1.1 Background to the research

The alcoholic beverage market in Australia has changed significantly over the past 20 years, particularly with the emergence of new niche markets such as premium beer, flavoured wine and spirits, and pre-mixed spirits. Within these new niche markets several brands have gained dominance and are favoured by underage drinkers. These brands have now become part of the drinking culture for many young Australians. The popularity of these brands together with an increase in binge drinking by teenagers has highlighted the need for further research. Concern has been raised by parents, educators, health workers and government agencies about the increase in underage drinking. However, the focus has tended towards the consequences of drinking rather than the importance of alcoholic brands and their social significance.

The growing body of Australian research on underage drinking includes the negative social and health aspects of drinking, and the long-term consequences of excessive drinking. Topics of prior research have included violence (assault, self-harm, intimidation and threatening behaviour) and sexual promiscuity (lowering self-esteem, sexually transmitted diseases, underage sex and unwanted pregnancies) associated with adolescent drinking. Previous research has also examined a relationship between
drinking and injury from road accidents, and adolescent drinking and the later adoption of drug use. Government funding has also contributed to a more epidemiological focus on drinking through the National Drug Research Institute. Whereas these issues are of vital importance to health educators and public policy makers, they tend to focus on the consequences rather than the factors influencing the adoption of drinking behaviours.

In addition to the epidemiological research, extensive research has also been undertaken both in Australia and overseas from the broad perspectives of marketing, social marketing, public policy, education, health science, economic theory and social psychology. This research has contributed a number of models which present influences on adolescent alcohol consumption. Of interest to this research project, is the work by Sancho, Miguel and Aldás which presents a model for factors influencing youth alcohol consumption intention (Sancho, Miguel & Aldás 2011) within the consumer socialisation theory framework (Moschis & Churchill 1978). The model proposes parents, peers and advertising as key influencers. The research is however, limited to advertising as part of media content and does not consider the much broader aspects of marketing. In addition to advertising, other promotional elements of marketing include sales promotions, branded merchandise and word-of-mouth recommendations. Broader aspects for consideration also include availability, price and attributes of the product such as taste.

The intention of this research project is to present a model of socialisation factors which support the influences of parents, peers and marketing on
adolescent alcohol consumption but, from a much broader perspective than just advertising. This model will then build a background for a further model of the effects of select socialisation agents on adolescent alcohol brand choice within an Australian context.

1.2 Research problem and hypotheses

Alcohol consumption is a complex yet common occurrence. Consumption behaviour including whether individuals choose to drink, how much they drink and what type of alcohol they drink is influenced by a multitude of factors. These factors include among others, the individual’s personal values, perceived behavioural control, perceived self-efficacy, expectancies, and subjective and descriptive norms. These characteristics are developed within a family and peer structure and are further influenced by marketing activity. Marketers direct their activity to potential consumers in an effort to encourage purchases. This is achieved by developing products which attempt to satisfy consumer’s needs, and these products are then promoted to create awareness of them amongst the potential consumers. The products are competitively priced, and made readily available to purchase. Within this context, consumers make conscious decisions to choose specific brands. The complexities of these decisions are further influenced by underage drinkers’ restrictions regarding purchasing and consumption.

The research problem which this report addresses is:

What are the significant influences on alcohol consumption and brand choice for underage drinkers in Australia?

Essentially the report addresses the relationship between adolescent alcohol consumption and alcohol brand choice. The philosophy underpinning the
research is the assumption that the socialisation agents influencing the decision to consume alcohol are not necessarily the same, or of the same significance, as those influencing alcohol brand choice. In order to support this assumption, the research investigates 13 hypotheses which are grouped according to their relevance to peer, family or marketing influence:

**Peer influence hypotheses**

H1: The number of different brands of beer, pre-mix and spirit that friends drink will have a positive association with alcohol consumption

H2: The number of different occasions when drinking takes place with friends will have a positive association with alcohol consumption

**Family influence hypotheses**

H3: The younger individuals were when they first consumed alcohol will have a positive association with alcohol consumption

H4: Parental approval of adolescents’ drinking will have a positive association with alcohol consumption

H5: The number of different occasions when drinking takes place with parents will have a positive association with alcohol consumption

H6: Parental knowledge of adolescents’ drinking will be positively associated with alcohol consumption

**Marketing influence hypotheses**

H7a: Recognition of television advertising for select alcoholic brands will have a positive association with alcohol consumption

H7b: Recognition of television advertising for select alcoholic brands will not be associated with alcohol brand choice for those brands
H8a: The number of sales promotions participated in for alcoholic products will have a positive association with alcohol consumption

H8b: The level of importance of sales promotions for alcoholic products will have a positive association with alcohol brand choice

H9a: The number of alcohol branded merchandise items owned or exposed to in the home will have a positive association with alcohol consumption

H9b: The level of importance of alcohol branded merchandise will have a positive association with alcohol brand choice

H10a: Price sensitivity for select alcoholic products will be an effect in alcohol consumption

H10b: Price reductions for select alcoholic brands will be an effect in alcohol brand choice

H11: Word-of-mouth brand recommendations from friends will be positively associated with alcohol brand choice

H12: The availability of select alcoholic brands will be an effect in alcohol brand choice

H13: Taste will be positively associated with alcohol brand choice

These hypotheses are tested through the development of two models; the conceptual model of adolescent alcohol consumption and the conceptual model of adolescent alcohol brand choice.

1.3 Justification for the research

The significant difference between this research project and previous research is that this study examines underage drinking in relation to brand choice. Alcoholic beverage producers gather data on consumer brand preferences and competitive marketing activity on a regular basis. However, it would be unethical for these producers to research the underage market because legally their products are required to be sold to people 18 years and
older. There is also an extensive body of academic research from the perspective of adolescent alcohol consumption; however, studies on adolescent alcohol brand choice are limited. Studies conducted in the United States examined youth alcohol preferences and found that there was a concentration among a relatively small number of alcohol brands (Siegel et al. 2011a, Siegel et al. 2013). To date, similar Australian research has been limited to a study by Jones and Reis (2012) which examined the determinants of choice from the perspective of pre-mixed alcohol drinkers. There is a gap in the literature relating to factors influencing adolescent brand choice across the four main types of alcohol: beer, spirits, pre-mixed spirits and wine. This research project challenges the notion of adolescent alcohol consumption being predominately influenced by media advertising and investigates other forms of marketing, and a broader spectrum of social influences. The research also considers the influence of a variety of marketing activities on establishing a distinguishable image for products which are preferred by adolescent drinkers. The relevance of this brand image to various social groups is also explored as a significant factor in brand adoption.

The potential significance of the findings of this research would be a model of underage drinkers’ brand choice. This model could be used to direct further research into the factors influencing selection of individual brands by underage drinkers. Whereas much research has been undertaken into adolescent alcohol consumption, a model proposing the significance of factors influencing brand choice has not been developed in an Australian context. The model could be used as a guide for researchers to determine the
Chapter 1 - Introduction

popularity of select brands based on the strength of specific socialisation agents. The model would be relevant for public policy about issues, such as binge drinking and for the delivery of social marketing messages. The alcohol industry may also be dissuaded from delivering advertising messages for individual brands that could be construed as appealing to underage drinkers.

1.4 Methodology

The research methodology used for this research was a mixed methods approach (Teddlie & Tashakkori 2009) using qualitative and quantitative research methods. The research components included exploratory and explanatory research. The exploratory research was qualitative in nature and sought to answer the question “what are the variables involved?” (Perry 1998, p.75). Two methods of exploratory research were used: focus groups and interviews. The exploratory research began with eight focus groups of TAFE (Technical and Further Education) students between the ages of 16 to 17 years. This method was considered appropriate because it provided an environment in which students were familiar with one another and were willing to discuss their experiences. The purpose of the research was to gather data on the students’ favoured brands and drinking behaviours. The second stage of the exploratory research was interviews with drive-in bottle department staff at hotels in south-east metropolitan Perth. These interviews were conducted to inform the researcher about the retail environment and to elicit background information on the brands favoured by adolescent drinkers. The exploratory research was resourceful for the formation of the hypotheses and for the development of the explanatory research.
A seven-page questionnaire was the main data collection method for the explanatory component of the research and sought to answer the question “what are the precise relationships between variables?” (Perry 1998, p.75). The questionnaire was completed by 670 students from four high schools in the south-eastern metropolitan area of Perth. This research method was considered the most effective way to gather responses from a larger sample of potential underage drinkers.

A combination of descriptive analysis, linear regression, and structural equation modelling were used for data analysis. The data analysis tested the individual hypotheses and the two conceptual models of adolescent alcohol consumption and adolescent alcohol brand choice.

1.5 Outline of the thesis

The structure of the thesis comprises the following:

Chapter 1 - Introduction

In this chapter the background to the research and the research problem are discussed. Two conceptual models for socialisation agents influencing adolescent alcohol choices are proposed. These models are presented within the context of 13 hypotheses which form the framework for the research. The justification for the research is presented and the gaps in the current literature are identified. An outline of the methodology used for the research is also discussed.
Chapter 2 - Research issues

This chapter reviews the relevant literature and builds a theoretical foundation on which to test the key research issues. The literature review begins by examining the extent of underage drinking in Australia and makes a comparison between consumption rates in other countries. The literature is then grouped according to the socialisation agents, peers, family and marketing, which are generally regarded as influences on adolescent alcohol consumption. The review of the marketing literature begins with consideration of the influence of the system of self-regulation of alcohol advertising in Australia. Literature relating to various marketing aspects such as advertising, product development, sales promotions, brand merchandise, price, availability and taste are also reviewed. A review of literature relevant to preferred types of alcohol for adolescents and adolescent brand choice are then discussed.

Chapter 3 - Conceptual development and hypothesis

In this chapter the background to the development of the two conceptual models: the conceptual model of adolescent alcohol consumption and the conceptual model of adolescent alcohol brand choice are discussed. The 13 hypotheses tested in the research, are also presented.

Chapter 4 - Methodology

This chapter describes the methodology used to collect data to address the hypotheses and test the two conceptual models. The research methodology was a mixed methods approach using qualitative and quantitative research. The data collection began with exploratory research including focus groups
and interviews. The responses from this research were then used to build a framework for the conceptual models and to develop a questionnaire to test the 13 hypotheses. The quantitative component of the research was the questionnaire which generated the main source of data for the research.

**Chapter 5 - Data analysis**

This chapter begins by describing the methods used for data cleaning and missing data. The methods used to measure statistical fit are then discussed. A summary of the data from the quantitative research is then presented in descriptive form to show the overall pattern of results. The 13 hypotheses are then individually analysed using descriptive analysis and linear regression. The two models are then tested using structural equation modelling. The analysis for each model is undertaken separately and each of the constructs is tested for model fit and reliability before being tested in full correlated models.

**Chapter 6 - Conclusions and implications**

In this chapter, the findings from the analysis of the data and the relevance to the hypotheses are discussed. Support for the conceptual models is established, with some modifications and recommendations for further research. Limitations of the research are recognised together with public policy and managerial implications. The contribution of the research to the field of marketing, and in particular the contribution to a broader understanding of adolescents’ alcohol brand choices is discussed.
Chapter 2

Research Issues

2.1 Background

The factors influencing initial and ongoing alcohol consumption and associated behaviours are complex and of interest to many disciplines. This complexity is evident in the significant body of research that has been undertaken on alcohol consumption in Australia and overseas from the perspectives of marketing, social marketing, public policy, education, health science and social psychology.

The epidemiological effects of drinking have also been researched and monitored over several years (Bonomo 2005; Chikritzhs & Pascal 2004; Rehm et al. 2009). To a lesser extent, alcohol consumption by adolescents in Australia has been the focus of research and public comment (Bonomo et al. 2004; Bowring et al. 2011; Chitritzhs et al. 2003; Chikritzhs & Pascal 2004; King, Taylor and Carroll 2005a; White 2001; White & Smith 2009). The latter research, the majority of which has been conducted over the last 20 years, has found some concerning trends in underage drinking in relation to behavioural and health issues (McBride et al. 2004; Chikritzhs & Pascal 2004; White & Hayman 2006; White & Smith 2009). For example, the epidemiological data gathered from research by the Commonwealth funded National Drug Research Institute at Curtin University into underage drinking in Australia reveals an increasing health risk for young Australians.
(Chikritzhs & Pascal 2004). And concerning trends in alcohol use by
Australian adolescents, such as widespread early onset of drinking and
regular binge drinking, have been identified (Bonomo 2005). Over the
period 1990 to 2001 there was an increase in consumption of alcohol for 14
to 17 year-olds, and an increase in drinking in excess of the safe drinking
guidelines (Chikritzhs & Pascal 2004). These findings on patterns of
consumption are supported by an extensive longitudinal survey series
conducted by the Australian Institute of Health and Welfare in the form of
the National Drug Strategy Household Survey. The 2001 survey indicated
that approximately 23% of 14 to 17 year-olds drank in excess of the
National Health & Medical Research Council's (NHMRC) 2001 safe
drinking guidelines for acute harm at least once a month (Chikritzhs et al.
2003). The safe drinking guidelines for 2001 were: 6 standard drinks per
day for males and 4 standard drinks per day for females (NHMRC 2001).
Although these guidelines have since been amended, with the lower level of
2 drinks per session for both males and females recommended in the 2009
guidelines, an ongoing comparison can still be made (NHMRC 2009).

Findings from subsequent National Drug Strategy Household Surveys show
a similar pattern of alcohol consumption by adolescents to the 2001 survey.
For example, the 2004 survey indicated 24% of males and females aged 14
to 19 years were drinking on a weekly basis, with 70% of teenagers
nominating private parties as the usual place of alcohol consumption
(Australian Institute of Health & Welfare 2005). The 2007 survey indicated
a slight decline in weekly drinking by 14 to 19 year-olds to 21% (Australian
Institute of Health & Welfare 2008). But similar research conducted for the
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Department of Health and Ageing in 2008 reported 23% of 12 to 17 year-olds drinking on a weekly basis (White & Smith 2009). By 2010 the National Drug Strategy Household Survey indicated that 18% of 14 to 19 year-olds were drinking on a weekly basis and that 65% were recent drinkers, that is, they had consumed at least a full serve of alcohol in the previous 12 months (Australian Institute of Health & Welfare 2011).

A summary of the data collected over the past 20 years, despite some minor fluctuations, indicates a fairly steady trend of more than 20% of 12 to 19 year-olds drinking on a regular basis. However, these estimates may be below the actual consumption level because population surveys of self-reported alcohol consumption generally indicate lower levels compared to alcohol sales data (Dawson 2000; Stockwell et al. 2004). Also of concern is the indication that although many adolescents have an accurate understanding of alcohol-related risks they still report drinking to harmful levels (Bowring et al. 2011). These alcohol-related risks can include short-term harm such as physical injury, assault and car accidents and long-term harm such as brain and liver damage and alcohol dependency (Anderson, Chisholm & Fuhr 2009a).

Similar patterns of adolescent alcohol consumption have been observed in New Zealand, with research indicating an increase in alcohol consumption and an ongoing trend in the increase of alcohol consumed per drinking session. In 2000, one in three 16 and 17 year-old males drank eight or more drinks in a session, which had increased from one in five in 1995 (Walsh 2003). This research is supported by similar findings in the United States,
where by age 18, more than 70% of adolescents had at least one drink. With underage drinking accounting for 11% of all alcohol consumed in the United States in 2009, it was also estimated that more than 90% of underage drinking is consumed by binge drinking (Centre on Alcohol Marketing and Youth 2006; National Institute on Alcohol and Alcohol Abuse 2013; O’Malley, Johnston & Bachman 1998).

The various Australian Government responses to underage drinking have focused on restrictions and warnings intended to act as deterrents. A combination of limitations on the sale, consumption, pricing and advertising of alcohol have been introduced, together with education programs focusing on the health risks associated with drinking. Media campaigns highlighting the negative social and health consequences have also been used. For example, the 2004 media campaign ‘Enough is enough’ (Strutt 2004) portrayed young males as violent and abusive when intoxicated and targeted adolescents through placement in youth music newspapers and television advertising. In 2008 the ‘Don’t turn a night out into a nightmare’, $20 million campaign on television, radio and billboards, targeted young binge drinkers (Toohey 2008). In addition to the Federal Government’s response, in 2008 DrinkWise, an alcohol industry and Government funded organisation which promotes responsible drinking, also ran television advertising to convey that youth are influenced by their parent’s drinking behaviour (DrinkWise 2008; Toohey 2008). Over the past 10 years, the Australian government has invested millions of dollars in drink driving media campaigns and has introduced tougher penalties for drink driving offences. The recommendation of some government agencies, such as the
Office of Road Safety and select community groups, have been in support of a uniform zero alcohol tolerance for learner and provisional plate drivers. This amendment was applied to the Western Australian Road Traffic Act in 2011 (ABC News 2010; Road Traffic Act 1974).

Teenage binge drinking has also attracted widespread attention, and the Australian Government’s 2008 introduction of a higher tax on pre-mixed alcohol has been the subject of much debate. The tax increase was designed to increase the price of pre-mixed drinks and therefore act as a deterrent to consumption for teenage binge drinkers. The tax increase closed a loophole that had been created by the introduction of the Goods and Services Tax in 2000, whereby pre-mixed spirits were taxed at a lower rate and therefore cheaper (Skov et al. 2011). Pre-mixed spirits, or ‘alcopops’ as they are commonly known are one of the more popular alcoholic beverages for underage drinkers (Giga et al. 2011; White & Hayman 2006). A similar price rise was introduced in New Zealand in 2003, with an increase in the price of light spirits containing between 14% and 23% alcohol by volume. Some media reports suggested the response from New Zealand underage drinkers was that despite a price increase, they would still continue to drink, by pooling financial resources (Walsh 2003). Following the introduction of the higher tax in Australia, a similar response was reported in the Australian media with suggestions that to combat the price rise teenagers would mix spirits with fruit juices or cola themselves rather than pay the higher price for pre-mixed drinks (Macdonald 2008). It has also been suggested that teenagers switched to cheaper and potentially higher alcohol content drinks (Kisely et al. 2011).
The initial effect of the price increase in Australia was a decline in sales of pre-mixed products; however, this was offset by an increase in the sales of sprits (Kerr 2008; Toohey 2008). The ongoing effect of the price rise has, however, been a reduction in the sales of pre-mixed spirits (Chikritzhs et al. 2009; Skov et al. 2011) with a reduction in the per capita consumption of pure alcohol in litres for pre-mixed products from 1.09 in 2006-07 to 0.68 in 2011-12 (Australian Bureau of Statistics 2013). The introduction of the tax and its impact on binge drinking remains a matter for debate amongst concerned community groups and the alcohol industry. Binge drinking continues to be an aspect of drinking behaviour amongst Australian adolescents despite the increased cost of pre-mixed drinks and educational programs introduced by the Government. The issue of binge drinking is a complex phenomenon, with recent research indicating that rather than a one-dimensional approach to the classification of binge drinking, based on the number of standard drinks consumed, there are three distinct types of binge drinking: initiation, indulgence, and moderation with each displaying different kinds of drinking behaviours (Kubacki, Dariusz & Rundle-Thiele 2011).

Despite government action, lobbying by community groups, and raised awareness in the media, underage drinking remains an enduring aspect of youth culture in Australia (Toohey 2008), characterised by the following aspects which encourage its continuance and growth:

- Experimentation with alcohol is seen by many as a common aspect of teenage psychosocial development (Bonomo 2005).
- Generally, there is a favourable attitude to drinking and Australian teenagers grow up in a culture of drinking (Roche et al. 2007).

- For many Australians, alcohol is “a popular, regularly consumed commodity which appears integral to the national culture” (Tobin, Moodie & Livingstone 2011, p.1471).

- The Australian climate is favourable to outdoor activities and many teenagers enjoy a casual lifestyle with ready access to motor vehicles, they are quick to adopt the latest form of communication and technology and, being media savvy, are attuned to marketing and brands (Casswell 2004).

- The majority of teenagers (58%) are in the labour force, primarily in part-time employment (Robinson, Long & Lamb 2011), which funds their leisure activities and drinking (Finch, Mortimer & Ryu 1997; Hemphill, Munro & Oh 2007).

To sum up: the majority of Australian teenagers (67%) have tried alcohol and, for many, drinking is part of their lifestyle (Australian Institute of Health & Welfare 2011).

The widespread acceptance of alcohol amongst both adults and adolescents presents a challenge for community groups and government agencies looking to address the adverse effects of adolescent alcohol consumption. Deeper social issues contribute to adolescents’ behavioural choices, which are influenced by key socialisation agents such as peer, family and marketing. However, there is conjecture in the literature about the influence of these socialisation agents and how they occur. Modelling theorists argue that adolescent drinking depends on exposure to others exhibiting that
behaviour (Margulies, Kessler & Kandel 1977; Smart, Gray & Bennett 1978), whereas normative theorists support the view that drinking depends on whether drinking behaviour is approved and sanctioned by other people such as peers and parents (Burkett & Jensen 1975; Jessor & Jessor 1975; Tittle & Rowe 1973). The nature of social influence and why peers or parents might influence adolescent drinking is also debated. A case is put forward by Whitehead and Harvey (1974) that adolescent drinking is influenced by internalisation, and the pressures of expectations to drink or not to drink. The type of relationship and the strength of the relationship that an adolescent has with peers and parents have also been considered when examining possible determinants of social influence on drinking behaviours (Biddle, Bank & Marlin 1980).

2.2 Peer influence

The influence of peers on teenage behaviour has been well documented across many areas, including the consumption of alcohol and smoking (Bray et al. 2003; Donohew et al. 1999; Duncan et al. 2005; Henry, Slater & Oetting 2005; Kiuru et al. 2010; Schulenberg et al. 1999; Urberg, Degirmencioğlu & Pilgrim 1997). Both drinking and smoking are illegal and generally regarded as harmful for teenagers to participate in. However, in the case of alcohol consumption, many teenagers enjoy the experience of what might be considered risky behaviour and for some drinking provides a temporary high and has become a regular practice (Adalbjarnardottir 2002).

The degree to which this behaviour is influenced by peers and over what time period this influence continues is a matter of ongoing debate (Poelen et
al. 2007). As suggested by Morgan and Grub (1991), the peer influencing process remains relatively constant across the adolescent years from 13 to 17 years. However, other researchers suggest that perceived peer approval of drinking may have more influence on behaviour during early adolescence when there is less direct peer pressure, than in later adolescence (Andrews et al. 2008; Bauman & Ennett 1996; Engels et al. 1997; Kelly et al. 2012; Trucco, Colder & Wieczorek 2011). In support of the influence of perceived peer approval, social learning theory suggests that adolescents don’t need to actually experience peer drinking behaviour, but that peer approval of the behaviour is sufficient to promote adoption (Petraitis, Flay & Miller 1995; Trucco, Colder & Wieczorek 2011). Peer influence has also been found to be associated with the adolescents’ gender and their friends’ gender (Kiuru et al. 2010; Schulenberg et al. 1999; Simons-Morton et al. 2001; Suls & Green 2003; Wechsler et al. 1995). Alcohol use by teenage girls has been more closely linked to their friends’ drinking behaviours as compared to that of teenage boys. However, teenagers of both genders are more likely to drink if they have friends of the opposite sex who also drink (Dick et al. 2007).

Peer influence is also implicated in binge drinking (Courtney & Polich 2009; Wechsler & Nelson 2001) and problem drinking by adolescents (Ham & Hope 2005). Longitudinal studies in the United Kingdom have also suggested an association between adolescent alcohol consumption and binge drinking in adulthood (Jefferis, Power & Manor 2005). Investigation into the different reasons for binge drinking by males and females indicates that males are more inclined to initiate binge drinking to gain peer approval (Liu
& Kaplan 1996). Generally, studies have shown that binge drinking is more prevalent within a peer group environment and can often result from the desire to have an enjoyable social experience with friends or from perceived peer pressure (Northcote 2011). Research suggests that peer pressure relating to alcohol consumption can be a combination of three possible influences: explicit offers of alcohol, modelling of peers’ drinking behaviour, and perceived social norms (Borsari & Carey 2001). Examples of explicit offers of alcohol could vary from suggestions to try a new product or to more intense pressure such as the threat of being ostracised from a group if an individual doesn’t drink. Modelling is when an individual copies another individual’s or group’s drinking behaviours, and perceived social norms is when alcohol use can appear to be more common than it is within a peer group (Borsari & Carey 2001). These factors often contribute to an over estimation of the amount of alcohol consumed by peers (Hansen & Graham 1991) with greater estimates by males than females (Schulte, Ramo & Brown 2009). Over estimation may lead to excessive consumption of alcohol in an effort to achieve a perceived accepted norm. Further to this, an American study of university students’ drinking habits found that the number of drinks consumed by friends, and the frequency of drinking sessions of friends’, were significant predictors of an individual’s total weekly consumption (Jamison & Myers 2008). A similar influence can be seen in Australia, with on-campus drinking by 17 year-olds in social groups at taverns and residential colleges (Hughes 2012).

A key factor relating to the influence of peers on alcohol consumption appears to be whether an individual’s initiation to alcohol has already
commenced. One of the factors that influence an adolescent’s initiation to alcohol is their perception of peers who drink alcohol. This perception has been further developed into the concept of prototypes of drinking peers, which entails the social images of adolescent drinkers and their possible impact on adolescents who are preoccupied with image and appearance (Gibbons & Gerrard 1995; Spijkerman et al. 2007). If these images form a favourable impression of drinkers then the adolescent also tends to form a positive attitude to drinking. Research has shown that these prototypes directly influence behaviour because they affect people's decisions and willingness to behave in the same manner. These images can develop subliminally and influence drinking choices without the adolescent being aware of the influence (Economic and Social Research Council 2004). These prototypes of drinking peers are generally evaluated more positively by drinkers than non-drinkers (Blanton et al. 1997; Chassin, Tetzloff & Hershey 1985; Spijkerman et al. 2004). In a study by Gerrard and colleagues (2002) the idea that adolescents would begin to drink in order to gain a favourable self-image was proposed. The researchers found that this was dependent on the individual's drinker prototypes and whether they were favourable or not. Non-drinkers had generally developed unfavourable drinker prototypes, which supported their decision not to drink. The opposite was found to be generally applicable for drinkers.

Research from the United States suggests that an appropriate predictor of an adolescent’s drinking behaviour is the drinking behaviour of their friends (Weitzman, Nelson & Wechsler 2003b). Adolescents with friends who drink are more likely to drink themselves (Andrews et al. 2002; Bahr, Hawks &
Wang 1993; Gaughan 2006; Kiuru et al. 2010; Reis & Riley 2000). Associating with peers who drink and who approve of drinking is likely to influence adolescents’ alcohol expectancies (Zamboanga et al. 2009). This is extended to adolescents who have friends who engage in heavy drinking or binge drinking, with the likelihood that they too will become heavy drinkers (Barnes, Farrell & Banerjee 1994; Wechsler et al. 1998). The peer cluster theory explains the effect that peer group clusters such as groups of close friends can have on an individual’s alcohol use. The theory supports activities such as drinking as being primarily social behaviour, and that peer clusters are the dominant influence on individual behaviour within that environment (Henry, Slater & Oetting 2005).

Further research suggests that underage drinking is significantly influenced by the degree of social acceptability of drinking and positive beliefs about the effects of alcohol (Komro & Toomey 2002; Stacy, Bentler & Flay 1994). However, adolescents often overestimate how much alcohol their peers consume (Del Boca & Darkes 2003; King, Borsari & Chen 2010) and how favourable their peers’ attitudes are toward alcohol. Accordingly, alcohol prevention programs based on this research often include social norms education and target behavioural skills development such as the ability to react appropriately to peer group pressure (Baer 2002). This approach, however, fails to take into account the positive attitudes to drinking that have been developed through the influence of marketing.

Whereas peer drinking is widely viewed as being a contributing factor to adolescent alcohol use (Bauman & Ennett 1996; Bot et al. 2005; Crosnoe &
McNeely 2008; Urberg, Degirmencioglu & Pilgrim 1997), the empirical evidence needs to be interpreted with consideration of whether the drinking behaviour is due to selection or causation or a combination of both. That is, whether adolescents select peers with similar drinking behaviours (Jaccard, Blanton & Dodge 2005; Urberg et al. 2003), or whether friends influence one another and therefore contribute to the cause of the behaviour (Hartup 2005; Sieving, Perry & Williams 2000). There are also considerations as to the strength of influence of one’s ‘best friend’ on the drinking behaviour of the individual compared to the effect of a broader network of peers (Bot et al. 2005; Cruz, Emery & Turkheimer 2012; Hill et al. 2008; Poelen et al. 2007). This broader network of peers may create a culture that encourages drinking behaviours, but this may change over time (Cruz, Emery & Turkheimer 2012). Changes in the dynamics of the group and shifts in interests and relevance to the individual can also determine the ongoing strength of influence of the group (Cruz, Emery & Turkheimer 2012).

Peer influence has long been recognised as a powerful factor in the development of certain behaviours and lifestyle choices (Carter, Bennetts & Carter 2003). For adolescents, the need to fit in and be accepted by their peers can influence whether or not they choose to drink alcohol and the type of alcohol they drink (Trucco, Colder & Wieczorek 2011). Peer acceptance can also be reflected in their brand choices and behaviour that supports their desired lifestyle image.

In summary, the review of the literature on peer relationships and adolescent alcohol consumption indicates a positive influence. This influence may
fluctuate over time and vary according to the importance of the peer relationship. The need to be accepted by one’s peers and to use peers as a model for individual behaviour is also indicated in alcohol consumption. The literature also supports peer influences being linked to patterns of drinking behaviour such as binge drinking and ongoing alcohol consumption. A review of literature in relation to family influence on adolescent alcohol consumption is addressed in the next section.

2.3 Family influence

In addition to peers, family influences are considered to be a significant factor in the development of drinking behaviours in adolescents. This influence can develop from early childhood, as children learn from their parents the values, attitudes and behaviours that are appropriate to their cultural and societal acceptance (Gilligan, Kypri & Lubman 2012c). This process of socialisation as advanced in social learning theory (Bandura 1977), is ongoing through a child’s development and is influenced not only by parents but also by interaction with others. These interactions can take place in other settings apart from the home (Ward 1974). But it is parents who usually have the opportunity to influence and interact with their children from the very early stages of their development. Because of this, the family context of interpersonal communication is believed to play a significant role in consumer socialisation (Moschis 1985). Patterns of behaviour are observed and copied by children and, in many instances, adopted to seek their parents’ approval. Several studies have indicated that parents have a profound effect in the drinking behaviours of their children (Cranford et al. 2010; Fitzgerald, Davies & Zucker 2002; Wills & Yaeger 2002).
Accordingly, parents’ drinking behaviours have come under close scrutiny as research has also shown that children of parents who drink are more likely to drink themselves (Barnes, Farrell & Cairns 1986; Casswell, Pledger & Pratap 2002; Johnson & Johnson 2001; Latendresse et al. 2008; Lieb et al. 2002; Weitzman & Wechsler 2000).

For the majority of teenagers, their family and in particular their parents first introduce them to alcohol (Gilligan, Kypri & Lubman 2012c; Kypri, Dean & Stojanovski 2007; Porter-Serviss, Opheim & Hindmarsh 1994; Strycher, Duncan & Pickering 2003). Australian research indicates that for 31% of teenagers aged 12 to 17 years, they were supplied their first glass of alcohol by their parents (Australian Institute of Health and Welfare 2011).

The age at which this happens has emerged as a factor in continued alcohol use, later alcohol dependence, and associated risk factors (Andrews, Hampson & Peterson 2011; DeWitt et al. 2000; Guo et al. 2000; Guttmannova et al. 2011; Warner, White & Johnson 2007). Based on the National Drug Strategy Household Survey report 2010, for Australians aged 12 to 15 years, the average age for imitation to alcohol is 13.1 years and for 16 to 17 year olds, the average age is 14.6 years (Australian Institute of Health and Welfare 2011). Research conducted in the United States indicates that adults who first drank alcohol before the age of 15 were more than five times more likely to report recent alcohol abuse or dependence compared to those who first drank alcohol at the age of 21 or older (Office of Applied Studies 2004). The research found that of those who began drinking alcohol before the age of 12, 16% reported alcohol abuse or dependence within the past 12 months (Office of Applied Studies 2004).
Whereas the age of first use of alcohol has been widely used in epidemiological studies (DeWit et al. 2000; Sartor et al. 2007; SHAHRP 2004), the accuracy of the estimation of age by the respondents has been questioned (Liang, Chikritzhs & Lee 2012). Recalling age retrospectively can incur bias due to memory error and the age recalled can change with time (Bringham et al. 2010; Johnson, Gerstein & Rasindki 1997). Despite these possible shortcomings, the measure is still an appropriate indication of parental influence particularly with early adolescent drinkers.

Alcohol expectancies are the beliefs individuals have about the effects of alcohol and children can begin to acquire alcohol expectancies at as young as 3 or 4 years old. In early childhood these expectancies tend to be negative (Dunn & Goldman 1998; Lang & Stritzke 1993). However, by the time they reach 9 to 10 years old, children’s expectancies are beginning to turn to the positive aspects of drinking such as improved social interaction (Dunn & Goldman 1998). The younger children are when alcohol use is initiated, the more likely they are to develop positive expectancies to alcohol, and it is believed that parents play a key role in this development (Cranford et al. 2010; Dalton et al. 2005). Adolescents with strong positive alcohol expectancies tend to drink more and are also at risk of problem drinking such as binge drinking. Evidence indicates that alcohol expectancies are among the strongest predictors of drinking in adolescents and can increase over time (Cranford 2010; Darkes, Greenbaum & Goldman 2004; Goldman, Del Boca & Darkes 1999; Killen et al. 1996; Smith et al. 1995).
Adolescent drinking has also been associated with the predisposition to drink caused by alcoholic parents and the exposure to alcohol consumption in the home (Chassin, Rogosch & Barrera 1991; Hussong, Curran & Chassin 1998; Warner, White & Johnson 2007; West & Prinz 1987). However, these factors are not necessarily a determinant of drinking behaviours (Grant 1998). Research conducted in the United States confirmed that although the presence of adults drinking at home was a factor in predicting adolescent alcohol initiation, the degree of influence was difficult to measure because other factors such as increased access and availability of alcohol in the home and the mimicking of adult behaviours by adolescents, should also be considered (Fisher et al. 2007).

The issue of alcohol consumption versus abstinence in adolescence has also been attributed to the powerful influence of susceptibility to consume alcohol. The notion of susceptibility covers a broad spectrum of social and behavioural influences including parental influence (Campbell & Oei 2010; Campbell & Oei 2013). The theory proposes that some individuals will be more susceptible than others to drinking alcohol and possibly developing alcohol-related problems in later life. Since there is a pronounced familial tendency for alcoholism, much debate has centred on whether this is due to the transmission of genetic traits or the influence of the family environment on drinking behaviour (Saunders & Williams 1983; West & Prinz 1987). Personality traits that are formed in part by the influence of the family environment have also been found to act as a predictive indicator of early alcohol misuse (George et al. 2010). To varying degrees, peer group pressure and the influence of social norms (Kiuru et al. 2010) combined
with socio-economic variables (Cruz, Emery & Turkheimer 2012; Berry et al. 2007; Leventhal & Brooks-Gunn 2000; Pitel et al. 2010), culture (Farhat et al. 2012; Oei & Jardim 2007; Shih et al. 2012) and religion (Cox, Black & Muller 2009; Francis, Fearn & Lewis 2005) can also influence alcohol consumption. A more complete profile of the level of susceptibility would consider these factors.

Research has shown that parental drinking and the level of acceptance of teenage drinking can indirectly influence teenage drinking through the teenager’s perceptions of parenting, especially monitoring and discipline received (Bahr & Hoffmann 2010; Latendresse et al. 2008; Patock-Peckham & Morgan-Lopez 2009). The level of parental control and the nature and stability of the family structure have also been shown to influence the development of problematic patterns of adolescent drinking (Alati et al. 2009; Habib et al. 2010). Some parents believe that getting drunk is just a phase that teenagers go through, and that it is part of the learning process for teenagers to establish how much alcohol they can handle prior to establishing appropriate adult behaviour (Gilligan et al. 2012b; National Drug and Alcohol Research Council 2008; Roberts, Breckwith & Watts 2010). Some parents who do not approve of underage drinking may feel ineffectual in influencing their child’s drinking behaviour, believing that peer pressure will have a more significant impact on their child’s decisions (National Drug and Alcohol Research Council 2008).

Parental attitudes towards alcohol use have been shown to significantly predict adolescent alcohol use (Barnes & Welte 1986). Perceived parental
disapproval of drinking may have a moderating effect in an adolescent’s behaviour by altering their outcome expectancies and perceived norms (Martino, Ellickson & McCaffrey 2009). Studies investigating the protective role parents’ play in adolescent alcohol use (Marshal & Chassin 2000; Wood et al. 2004) have found that consistency of discipline and parental support can impact the onset and continuance of adolescent drinking. On the other hand, some parents approve of the use of alcohol in the home and certain social settings in the belief that this tolerance might be helpful in educating teenagers about alcohol (Kypri, Dean & Stojanovski 2007; Jackson, Henriksen & Dickinson 1999; Shortt et al. 2007; Ward & Snow 2011; Ward & Snow 2008). Research indicates that the majority of Australian parents (95%) surveyed believe they have an important role in shaping adolescents’ behaviours and values in relation to drinking (Shanahan & Hewitt 1999). Research has also shown that while parents report using some form of strategy to moderate adolescent alcohol use, these strategies are not necessarily consistent with the Australian National Health and Medical Research Council guidelines (Gilligan & Kypri 2012a; NHMRC 2009). Generally there is a high rate of acceptance of alcohol consumption in Australian society. This broad acceptance is indicated in research conducted in 2009 by health insurer MBF, which found that 59% of Western Australian adults who were surveyed supported underage drinking stating that it was acceptable under adult supervision. Nationally, almost half of those adults surveyed agreed that 15 to 17 year-olds should be able to consume alcohol at home (Tillett 2009b). A powerful link is therefore formed between parental acceptance and underage drinking.
With such wide acceptance of alcohol use, the majority of Australian children grow up in a culture where alcohol use becomes part of family and social life. Accordingly, there is an underlying assumption by teenagers that if their parents drink alcohol it will also be acceptable for them to drink alcohol. Where the lines become blurred, is precisely when young Australians can drink safely and responsibly. The Liquor Control Act 1988 (WA) prohibits public drinking and the purchase of alcohol by anyone under the age of 18 years in Western Australia (Liquor Control Act 1988) and similar legislation applies to other states of Australia. However, many young Australians are introduced to alcohol by their parents well before their 18th birthday. An Australian survey of opinions and behaviours of parents regarding teenage alcohol consumption found that “the majority of parents supported a cautious approach to the introduction of alcohol, especially among the younger teenagers” (King, Taylor & Carroll 2005b, p.1). By the time teenagers were 17, parents presented a more accepting response to teenage drinking (King, Taylor & Carroll 2005b).

During exploratory research for this research project, some focus group participants indicated that their parents introduced them to alcohol at Christmas and birthday celebrations as well as more regular events such as barbeques and family dinners. These results support a wider acceptance of adolescents consuming alcohol, as it could be expected that at these types of functions, friends and extended family members would be present. Several participants in the focus groups also reported that their parents knew they drank alcohol with their friends and didn’t object. As further evidence of
parental acceptance, several participants confirmed that their parents had hosted after-ball parties and had served alcohol. In these instances, parents supplied alcohol not only to their children but also to other adolescents. As the school balls for the Perth high schools within the research area are held in years 11 and 12, the age of students attending these balls and the after-ball parties is between 16 to 17 years.

The issue of secondary supply of alcohol to adolescents outside the home is a current topic of debate in the media and amongst some parents and community groups (Quinton 2013; Thomas 2013). In response to this debate, state governments in Victoria, New South Wales, Queensland and Tasmania have introduced legislation to prohibit the secondary supply of alcohol to underage persons at private premises without parental consent. The Northern Territory has responded by introducing legislation making it an offence to irresponsibly supply alcohol to minors (Roche, Steenson & Andrew 2013). However, Western Australia and South Australia are yet to adopt secondary supply laws (Australian Drug Foundation 2013). A study by Gilligan and colleagues (2012b) has called for further study into the volume of alcohol supplied by parents and the context in which the alcohol is supplied.

Parents play a key role in the supply of alcohol both in the home and for consumption by adolescents outside the home (Gilligan et al. 2012b; Hearst et al. 2007; Komro et al. 2007; Ward & Snow 2011). There is an assumption by some parents that in supplying alcohol for adolescents to consume outside the home they are employing the harm-reduction strategy of
monitoring the amount of alcohol consumed (Ward & Snow 2011). However, many parents are not aware of the exact nature of their children’s drinking habits and often underestimate the amount they actually consume (Bogenschneider et al. 1998; Guilamo-Ramos et al. 2006). The relationship between supplying ‘low risk’ amounts of alcohol at home and responsible drinking behaviour by adolescents outside the home is unclear, but parental supply of alcohol has been found to be associated with increased long term alcohol use (Komro et al. 2007; Ward & Snow 2011).

Instances of parental supply of alcohol were also indicated from interviews with drive-in bottle department staff at four hotels as part of the exploratory research for this research project. During these interviews, the researcher also observed four instances of adults purchasing alcohol for what appeared to be teenagers and in all cases the adults checked and confirmed that they had purchased the alcohol the teenager wanted, and then handed it to them. This behaviour is supported by a 2004 Australian Government funded survey of 24,000 students in years 7 to 12 which found that parents supplied teenagers with 40% of the alcohol that they consumed, and that most teenagers drank at home (Marriner 2004). A 2005 survey of 12 to 15 year-olds also ranked parents as the most common source of alcohol (Hearse 2008). The most recent data gained from the 2008 Australian School Students’ Alcohol and Drug Survey found that 34% of students surveyed reported that their parents gave them their last drink (White & Smith 2009). In response to the widening body of research that confirms parental influence on adolescent drinking, the Australian Government turned its
attention to parental drinking behaviours in its 2008 television advertising campaign. The campaign was aimed at parents to highlight how their influence can be far reaching. The campaign was supported by DrinkWise Australia, an industry funded body, as part of a $3.5 million campaign for the six-month period from June to November 2008. The commercial portrays a family drinking situation at a barbeque in which a boy fetches a beer from the refrigerator for his father. The same situation is then repeated with the boy now a grown man and asking his son for a beer (Lee 2008). The commercial suggests that drinking behaviours are learned and repeated and begs the question ‘is this how you want your children to behave?’ The campaign is an attempt to address well entrenched behaviours and acceptance towards alcohol in Australian society. However, effecting such social change is a considerable challenge because alcohol is commonly used, legal, and considered socially acceptable by the majority of Australia, with three in five adult Australians supporting regular consumption (Australian Institute of Health and Welfare 1999).

In summary, a review of the literature on parental influence on adolescent alcohol consumption and ongoing consumption indicates a positive relationship across a broad range of factors. These factors include the age at which the adolescent was first introduced to alcohol and by whom, the susceptibility to drink being influenced by parental drinking, parental approval of drinking, parental supply of alcohol and the level of parental control (Gilligan, Kypri & Lubman 2012c) and the nature and stability of the family structure. The literature also indicates a significant influence by
parents on adolescents’ attitudes toward alcohol and their decision to abstain or participate in alcohol consumption with their friends.

2.4 Marketing influence

The influence of marketing on underage drinking has been researched in many countries, including the United States, Europe, United Kingdom, New Zealand and Australia (Collins et al. 2007; Gordon, MacKintosh & Moodie 2010; Gunter, Hansen & Touri 2009; Henriksen et al. 2008; Jones & Magee 2011; Morgenstern et al. 2011; Thomsen and Rekve 2004; Unger et al. 2003). Comprehensive reviews of longitudinal studies have also been conducted, and these support an association between exposure to alcohol marketing and underage drinking (Anderson et al. 2009b; Smith & Foxcroft 2009). These studies have mainly focused on the influence of various forms of advertising including television and magazines, sales promotions and promotional merchandise. The focus has also been on adolescent alcohol consumption. However, research specifically examining the influence of marketing on adolescent alcohol brand choice is limited and particularly within an Australian context. The following section of the literature review examines marketing from the perspectives of: the regulations covering alcohol advertising, media advertising, product development, sales promotions, branded merchandise, word-of-mouth, price, availability and taste.

2.4.1 Regulation of alcohol advertising

The growing body of literature in favour of an association between advertising and alcohol consumption has resulted in restrictions on alcohol
advertising in several countries and proposed legislation restricting alcohol advertisements in others (Casswell & Maxwell 2005; Jones, Hall & Munro 2008; Kelly & Edwards 1998). In Australia, alcohol advertising is regulated in aspects such as creative concept, content, purpose and intent, and possible exposure to children. A quasi-regulatory system covering alcohol advertising is administered by a management committee from the Advertising Standards Board comprised of representatives from the alcohol beverage industry, the advertising industry, and government representatives (Pettigrew, Johnson & Daube 2013). The basis of the self-regulation is the Alcohol Beverages Advertising (and Packaging) Code (ABAC), which sets standards for advertising, promotions, and packaging for alcohol beverages. The Code specifically states that advertisements for alcohol beverages must “not have a strong or evident appeal to children or adolescents” (ABAC 2013 p.2; Pettigrew, Johnson & Daube 2013). The same guidelines also apply to promotions and packaging of alcohol beverages (ABAC 2006). The broadcasting industry also self-regulates the content of all commercials screened in Australia through the Australian Association of National Advertisers (AANA). The AANA has an Advertiser Code of Ethics which is administered through the Advertising Standards Board and the Advertising Claims Board, which deals with complaints and breaches of the code.

In addition to self-regulation, the Competition and Consumer Act 2010 (formerly the Trades Practices Act 1974) also sets strict guidelines for misrepresentation and false or misleading information. Television advertising of alcoholic beverages in Australia is also limited by The Children’s Television Standards Act 2009. This Act restricts the screening
times of television commercials for alcoholic products to after 8.30 pm, to reduce exposure to younger children (Children’s Television Standards 2009). However, a loophole permits the broadcast of alcohol advertising during sporting programs on the weekends and public holidays. Despite these restrictions, research into the exposure of adolescents to alcohol advertising on Australian metropolitan free-to-air television indicates that adolescents are exposed to approximately the same level of advertising as young adults (Donovan, Fielder & Winter 2008; Fielder, Donovan & Ouschan 2009).

The effectiveness of the system of self-regulation has been under scrutiny in several studies (Casswell & Maxwell 2005; Jones & Donovan 2001; Jones & Eagleton 2012; Jones & Gordon 2013), with a call for further restrictions and a review of the current system (Munro 2006). As pointed out by Munro and De Wever (2008), with a system of self-regulation, the alcohol industry and the public health lobby will continue to have opposing interests about effectively changing Australian drinking culture.

Industry self-regulation of alcohol advertising in Australia also fails to recognise the drinking situations presented in many television programs that have a high appeal to 14 to 17 year olds. Australian reality television programs such as ‘Big Brother’, which ran for seven years from 2001 to 2008 and again in 2013, featured alcohol consumption and partying in most episodes (Big Brother Australia 2011). Popular Australian sitcoms such as 'Packed to the Rafters' also feature young males drinking beer in social situations on a regular basis. The influence of televised portrayals of
drinking was addressed in experimental studies in the United States (Kotch, Coulter & Lipsitz 1986; Rychtarik et al. 1983); however, the effects were small and obtained within an artificial environment. In the real world, exposure occurs over a longer period (Grube & Waiters 2005; Collins et al. 2007), and the impact of the message can vary depending on the nature of the message, frequency of exposure, and audience characteristics (O’Guinn & Shrum 1997). Research conducted in the United States found that both positive and negative messages relating to alcohol consumption that were screened in youth-orientated television programs were received differently depending on the viewers’ attitudes and beliefs toward drinking (Russell, Russell & Grube 2009).

Product placement of alcoholic products has also appeared in many popular and award-winning films (Everett, Schnuth & Tribble 1998; Roberts, Henriksen & Christensen 1999) and has helped to position alcohol as socially acceptable for many teenagers. These films are not only viewed in cinema theatres but many are also screened on television, including in countries which restrict the broadcasting of advertising for alcoholic products (Jernigan 2010). Research in six European countries has also established a link between alcohol use in movies and adolescent binge drinking (Hanewinkel et al. 2012). References to alcohol are also present in popular music, with American research finding explicit references in one-in-five songs sampled and a quarter of those mentioning specific brands (Primack 2012). With the global expenditure on product placement expected to exceed that of traditional media expenditure and continue to grow in the foreseeable future (Dens et al. 2012), the marketers of alcoholic beverages
are expected to maintain a presence in this medium in the face of advertising bans in traditional media.

### 2.4.2 Advertising

Marketing is often cited as a contributing factor to underage alcohol consumption, with criticism directed toward alcohol advertising, and the prevalent use of image advertising. The main concern relating to the use of image advertising is the possible effect on adolescent behaviour (Jones & Donovan 2001; Kelly & Edwards 1998). The debate concerning the influence of alcohol advertising on alcohol consumption and attitudes towards drinking has continued for many years (Ellickson et al. 2005; Fielder, Donovan & Ouschan 2009; Jones & Jernigan 2010; Pettigrew et al. 2012). Studies generally focus on either an econometric or consumer studies viewpoint, and with differing outcomes.

Econometric studies suggest that there is a minimal effect between advertising and behaviour (Duffy 1989; Nelson 2003), and television advertising and alcohol expectancies (Lipsitz et al. 1993). A well-documented study of 12 to 16 year-old drinkers in the United States found little effect in exposure to advertising and participants’ levels of alcohol consumption (Strickland 1982). Further American research found the effects of advertising are largely neutralised by parental and peer influences (Kinard & Webster 2010). However, the majority of more recent consumer studies support the opposing view that advertising is an influencing factor in alcohol consumption (Hastings et al. 2005). A study using a combination of exposure to television advertising and recall variables for 12 to 13 year-olds
supported an association with alcohol consumption within a 12-month period (Stacy et al. 2004). In another study, self-reported exposure to alcohol advertising in a variety of media was associated with increased drinking for 15 to 26 year-olds (Snyder et al. 2004). And an awareness of beer advertising amongst youth has also been shown to predict increased intentions to drink as an adult (Grube & Wallack 1994).

Although the criticism directed towards alcohol advertisers is usually focused on the persuasive nature of advertising, alcohol advertisers have also been accused of targeting adolescent drinkers with the use of image advertising (Kelly & Edwards 1998). Alcohol marketers rely on images portrayed in advertising to associate their products with positive outcomes such as; achievement and social acceptance, and physical prowess, sexuality and attractiveness (Sorensen 2012). These images are argued to have a strong impact on adolescents who are establishing social relationships (American Public Health Association 1992). This type of image advertising emphasises the lifestyle of the target user rather than the inherent value of the actual product (Kelly & Edwards 1998). Martin et al. (2002) found that the creative concept for the execution of television advertising has a positive effect in recognition, particularly with the use of animation, animals, celebrities and youth orientated music that appeals to adolescents. Research has supported the notion that teenagers are more susceptible to fantasy, such as animation, with the more imaginative the character portrayal, the higher the viewer approval rating (Alcohol Policies Project 1996). This was supported by an American survey of children between the ages of 9 to 11 that reported respondents were more familiar with the comical frogs
featured in the Budweiser beer television commercials than the animated characters used for well-known children’s breakfast cereals (Leiber 1996). A further American study found high levels of advertising awareness amongst 9 and 14 year olds linked to the creative appeal of beer advertising (Collins et al. 2005). A study of Australian primary and secondary students produced similar findings, with three-quarters of students recognising the Bundy Bear from the Bundaberg Rum television commercials and then matching the character to the product (O’Leary 2010).

The recognition of television commercial content can also be related to frequency of exposure (Howard 1978). Television is a vital source of entertainment and information for Australian children. In the 12 months to April 2012, children spent more time watching TV, DVDs or videos than any other recreational activity (Australian Bureau of Statistics 2012). On average, children spent 7½ hours per week watching TV, DVDs or videos outside of school hours (Australian Bureau of Statistics 2012). Viewing patterns vary according to age groups, with pre-teens between the ages of 5-12 years viewing an average of just over an hour of commercial television per day (Brand 2007). Teenagers, between the ages of 13-17 years view an average of two hours and forty minutes of commercial television per day. Of this group, 70% view mainly between 6pm to 10.30pm (Roy Morgan 1999). As the highest frequency of alcohol advertising is between 8.30pm and 10.30pm, adolescent viewers are exposed to alcohol advertising for more than half of their television viewing time and at high levels (Winter, Donovan & Fielder 2008).
A longitudinal research project conducted in New Zealand examined alcohol advertising recognition at ages 13, 15 and 18 and compared this to alcohol consumption (Connolly et al. 1994). The results showed that the number of advertisements recognised by males at the age of 15 was related to the maximum quantity of beer consumed by males at the age of 18 (Connolly et al. 1994). The research, however, failed to establish a similar relationship for wine and spirits or a similar relationship for females. The results were also reflective of the quantity of beer advertising at the time of the survey and the male orientation of the advertising (Connolly et al. 1994).

While there is a weak relationship drawn between advertising recognition and beer consumption for the males surveyed, an issue raised by these findings is whether those males who were heavy beer drinkers at 18 were also heavy beer drinkers at 15. And this longitudinal issue was not measured as part of the New Zealand research. There is however, research to suggest that younger teens have better recall of advertising than young adults (Dubow 1995). Similar studies in the United States and Europe have supported an association between exposure to beer advertising and beer consumption by underage drinkers (Centre on Alcohol Marketing and Youth 2006; Grube & Wallack 1994; Kelly & Edwards 1998; Miller & Mizerski 2005).

In Australia, as in the United States, television advertising for beer has made up the largest proportion of expenditure in the alcohol advertising category. The amount of money spent on media advertising for alcoholic beverages in Australia is significant. Foster’s Group Limited, which owns the beer brands Carlton and VB, is amongst the top 50 media advertisers in Australia with
an estimated spend of $35 - $40 million for the 2008 financial year (B&T 2008). Nielsen Media AIS estimates the total media spend in Australia by alcohol companies to be in excess of $122 million for the 2008 financial year (Lee 2008). This expenditure has increased from an estimate in excess of $70 million a year in 2003 for the major media such as television, radio, magazines and newspapers (Drug Info 2003).

Funds are also being directed into newer alternative forms of communication to capture the attention of the technology savvy younger generation. Viral marketing and interactive media such as the Internet, SMS and email are all being used by alcohol marketers (Jernigan, Ostroff & Ross 2005). The influence of such media on adolescent alcohol consumption in Australia is an area which has recently been examined by Jones and Magee (2011). Their research into adolescent exposure to marketing for alcohol products in several media, including advertising on television, found that 94% of adolescents surveyed indicated they had seen alcohol advertising on television. The study also found that in comparison to other forms of marketing, having seen alcohol advertising on television was not associated with an increased probability of regular alcohol consumption. Other forms of marketing were found to be more likely associated with increased alcohol consumption, alcohol initiation and consumption in the past four weeks, although the type of association varied with age and gender (Jones & Magee 2011). According to the research, other media such as the Internet, magazines, and point-of-sale promotions are now becoming more of an influence on adolescent drinking behaviours in Australia (Jones & Magee 2011).
Adolescent exposure to magazine advertising for alcoholic products is an area of research covered in several American studies. King and colleagues (2009) found that advertising for alcoholic beverages that were popular with adolescents, was more likely to be found in magazines with high youth readership (King et al. 2009). Thomsen and Rekve (2004) tested exposure to alcohol advertising in three different types of magazines and found that positive expectancies about alcohol, normative beliefs that teenagers drink, and recent drinking were positively associated to varying degrees. Further research found that youth were disproportionately exposed to alcohol advertising in magazines (Garfield, Chung & Rathouz 2003; Siegel et al. 2008). This view was not shared in the work by Nelson (2006), who concludes that alcohol advertising and youth readership of magazines does not present targeting at underage youths.

The research on alcohol advertising and underage drinking has failed to establish a causal link. However, several studies have established an association between alcohol advertising and the opinions and intentions of adolescents regarding alcohol consumption (Aitken 1989; Grube & Wallack 1994). Alcohol advertising has also been found to encourage adolescent drinking and assist in establishing drinking habits (Hastings, MacKintosh & Aiken 1992; Wyllie, Zang & Casswell 1998).

### 2.4.3 Product development

The development of alcoholic products that appeal to younger markets has resulted in criticism of the alcohol industry. Marketers have been accused of targeting young drinkers, in particular teenage girls, with pre-mixed...
alcoholic products or so-called ‘designer drinks’ or ‘alcopops’ (Smith, Edwards & Harris 2005), which the critics claim have been designed to appeal to an unsophisticated adolescent palate. The addition of flavouring and carbonated soft drinks to spirits makes the high alcohol content drinks more palatable because it reduces the strong taste of the base spirit and the ‘easy-to-drink’ characteristics makes these products more appealing to younger palates (Jones & Donovan 2001). Australia was the first country to develop alcopops and the alcoholic beverage marketers have continued to update the market with a range of product variants including; low calorie, higher alcohol content, fruit flavours and milk mixes.

The American Medical Association (AMA) raised concerns in 2004 when results of two nationwide polls revealed that approximately one third of teenage girls reported having tried alcopops and one in six had done so in the past six months (Gans 2004). The research also indicated a higher consumption of alcopops by teenage girls (31%) compared to teenage boys (19%) (Gans 2004). Similar consumption patterns of alcopops were found for Australian teenagers (King, Taylor & Carroll 2005a). The gender imbalance in consumption for alcohol categories has largely been attributed to the taste and promotion of the products; however; this has not been linked to brand preference for underage Australian drinkers. American research has, however, supported an association between beer advertising awareness and beer consumption among adolescent males (Collins et al. 2003).

The popularity of niche market segments amongst underage drinkers in Australia has continued to grow. The pre-mixed market has expanded, with
the addition of new products and brand extensions, at a rapid rate. Independent Distillers have led the race by launching flavour variants to their popular Vodka Cruiser range (such as raspberry, lemon lime and pineapple) and higher alcohol products (7% compared to 5%) and low calorie brand extensions (National Liquor News 2005). Pre-mixed has become the key to growth for spirits producers and accounts for around half of all spirit-based standard drinks (Swift & Moore 2005). The unprecedented growth in the pre-mixed market over the past few years has resulted in the fastest growing alcohol category in Australia with an annual value growth of 12.5% in 2004 versus 2003. Pre-mixed is the third largest alcohol category after beer and wine, with a retail value of $1.99 billion in Australian liquor stores and hotels (AC Nielsen 2005). Marketers are continuing to develop this market segment with new flavour and packaging variations and new product concepts such as alcohol energy drinks and milk-based shots (Bastians 2012; Jones 2011). Social media, sales promotions and branded merchandise are widely used by marketers to present these products to the younger adult market. And, each year thousands of new underage drinkers are also choosing the sweet, unsophisticated taste and the colourful presentation of pre-mixed alcoholic drinks.

2.4.4 Sales promotions

Research conducted in the United States suggests that adolescents who participated in or are exposed to promotions for alcoholic products are more likely to consume alcohol (Fisher et al. 2007; Hurtz et al. 2007). Where the research by Fisher and colleagues falls short, is that it fails to identify the
type of sales promotional item and whether or not the sales promotion requires entering a licensed premise. The research broadly grouped alcohol branded merchandise as alcohol promotional items and did not identify other types of sales promotions such as gifts with purchase, coupons for discounts, or free entry tickets.

A pilot study conducted by Jones and Lynch in 2005 in Wollongong, New South Wales was the first Australian study to examine promotions for alcoholic products and their effect in alcohol related attitudes and behaviours (Jones & Lynch 2007). The scope of the study was limited to promotional activities for pre-mixed drinks and beer in alcohol retail stores in Wollongong over an eight week period and classified the promotions into “three categories: gift with purchase; competitions and buy some, get some free” (Jones & Lynch 2007, p. 319). As a pilot study, further research was recommended, and it concluded that “point-of-sale promotions may have the potential to further increase alcohol consumption among young people” (Jones & Lynch 2007, p. 318).

A further study by Jones and Magee (2011) examined adolescent exposure to marketing for alcohol products in advertising on television, magazines, newspapers, the Internet, billboards, in bars or pubs, and promotional materials. Over half the participants in the survey (51%) indicated that they had seen alcohol advertising on promotional material. The research concluded that, “exposure to alcohol advertising in magazines, bottle shops, pubs/bars and via promotional materials was associated with alcohol initiation” (Jones & Magee 2011, p. 634) but, exposure to only some types
of alcohol advertisements was associated with increased alcohol consumption. There were also variations according to age and gender and association to alcohol initiation, consumption and recent consumption. Additional research by Jones and colleagues (2012) on point-of-sale alcohol promotions in Perth and Sydney found that the most prevalent non-price promotion was competitions. The survey was limited to 24 retail outlets but, concluded that a common element of the promotions was the requirement of the purchase of a large number of standard drinks in order to participate.

Sales promotions for alcoholic products are generally designed to encourage a positive association with the product in order to identify with particular target markets and ultimately increase sales of the product (Drug Info 2003). In order to achieve this, many of the promotions on offer for alcoholic products are linked to lifestyle and images that are relevant to teenagers, such as free entry to music festivals and free dance music downloads. Some promotions have targeted very specific demographics, such as young women, with competitions to win a diamond ring with the purchase of a four pack of Vodka Cruiser (Independent Distillers 2008). A group of liquor retailers in Sydney even distributed free condoms and pole dancing kits with the launch of low calorie Vodka Cruiser as a promotion aimed at young women, before family groups expressed objections and the promotion was withdrawn (Naidu 2008).

Research on the effects of promotions on consumer's buying behaviour over both the short-term and long-term has resulted in varying conclusions. The self-perception theory (Bem 1972) supports the view that consumers who
buy products on promotion will more likely attribute their purchasing behaviour to the reduced price than their liking and preference for the product (Dodson, Tybout & Sternthal 1978). Increased promotion and advertising within a mature product category increases the likelihood that purchasers will differentiate brands on price over the short-term (Mela, Gupta & Lehmann 1979). Learning theory (Bolles 1979), however, supports the view that promotions will assist a brand in the long-term by strengthening awareness of the brand through familiarity and experience. However, this long-term effect will likely be reduced for more mature product categories. The alcoholic beverage market is a mature but dynamic market with the pre-mixed and beer categories contributing a constant flow of new product entries.

In order to participate in sales promotions for alcoholic products in Australia, the participant is generally required to do so at a licensed premise or via the purchase of an alcoholic product. For example, taste tests require participation at a licensed premise, and gifts with purchase require the purchase of an alcoholic product. Other sales promotions, such as discount vouchers, are readily available in newspapers, catalogues and on the Internet but must be redeemed from a licensed premise.

2.4.5 Brand merchandise

Research conducted in the United States found that owning, or being willing to use, alcohol branded promotional merchandise had a greater impact than advertising on alcohol use behaviours amongst adolescents (Fisher et al. 2007). The research concluded that owning or using promotional
merchandise, even items such as key rings or t-shirts, contributed to
underage alcohol use and was also associated with binge drinking among
girls (Fisher et al. 2007). A further study of American teenagers supported
these findings and found that the most common alcohol branded
merchandise items owned were items of clothing such as t-shirts and hats
(McClure et al. 2006). The study, which was conducted over a two-year
period, found that at the time of re-interviewing the respondents, those who
owned alcohol branded merchandise were significantly more likely to have
initiated alcohol use during the previous two years than respondents who did
not own alcohol branded merchandise (McClure et al. 2006). It was also
found that ownership of alcohol branded merchandise was associated with
poor school performance, peer drinking, and high-risk behaviors such as
sensation seeking and rebelliousness (Kilgore 2005). The research also
indicated that teenagers who owned alcohol branded merchandise were
more than 1.5 times more likely to have tried alcohol than their peers who
did not own alcohol branded merchandise (Kilgore 2005; McClure et al.
2006).

A further study by McClure and colleagues (2009) in the United States
found that the majority of adolescents surveyed (91%) were given alcohol
branded merchandise as a gift from family or friends. The study also
supported a causal relationship between ownership of alcohol branded
merchandise and drinking, although it failed to identify how ownership of
alcohol branded merchandise actually modified behaviour. The study raised
the possibility of a relationship between receptivity to alcohol marketing
messages as indicated by ownership of alcohol branded merchandise and a
more favourable attitude toward alcohol, which may then lead to alcohol consumption (McClure et al. 2009). This relationship is supported by the theory of cognitive dissonance (Festinger 1957), which suggests that we seek to resolve discrepancies when cognitions are inconsistent with our behaviour by changing either the cognition or the behaviour. Therefore, a teenager who owns alcohol branded merchandise may develop favourable attitudes towards alcohol as a method of justifying the ownership of the merchandise, and a teenager who already has a favourable attitude towards alcohol may acquire alcohol branded merchandise as a way of making their behaviour more congruent with their attitude (McClure et al. 2009).

The wearing of alcohol branded clothing, in particular t-shirts has been associated with a desire to be accepted by one’s peers by relaying the message and stereotype portrayed in the alcohol advertising (Workman, Arseneau & Ewell 2004). Meanings are assigned to clothing by both the wearer and the observer (Darden & Worden 1991), and adolescents strive to portray an image that is congruent with their peers (Klaczynski 1990). The wearing of branded items of clothing can provide this connection. Clothing is the most popular form of branded merchandise for American adolescents (Sargent et al. 1997; Workman 2003), but many branded items are available. In Australia, a broad range of alcohol branded merchandise can be purchased from fashion retailers, gift stores, department stores, discount department stores, and shops dedicated to selling alcohol branded merchandise such as the Coopers Brewery store in Adelaide. This type of merchandise is also available on-line and can be readily purchased by teenagers (Coopers Brewery 2013).
2.4.6 Word of mouth

Word-of-mouth (WOM) communication is a consumer driven method of marketing communication wherein the sender is independent of the marketer (Brown, Broderick & Lee 2007). The message is therefore often regarded by consumers as being more credible and reliable, particularly in the case of positive assessments of products (Arndt 1967; Schiffman & Kanuk 1995). The impact and dynamics of WOM as an effective marketing tool, has been well documented (Arndt 1967; Misner 1999; Yang et al. 2012) and dates back to the mid-1950s (Katz & Lazarsfeld 1955). Current marketers’ foster WOM communication using tools such as the development of brand communities and consumers create interactions with brands through WOM, including brand recommendations. In doing so ‘talkable brands’ are developed and the impact of branding activities is maximized (Lovett, Peres & Shachar 2013; Rosen 2002).

Apparently the communication frequency between peers has a positive influence on motivation, behavior towards, and awareness of socially conspicuous products, such as alcohol brands (Moore & Moschis 1978; Moschis & Churchill 1978). As adolescents spend a considerable amount of time with friends, they are more likely to drink alcohol with their friends, (Australian Institute of Health & Welfare 2011) and the presence of a brand within their drinking experience will encourage brand recall and liking for the brand (Sancho, Miguel & Aldás 2011). Usage situations provide a cue for brand recognition and brands that are used more often within a social environment will encourage top of mind awareness (Berger & Schwartz 2011). And, consequently, friends’ drinking familiar brands will encourage
positive WOM about the brand. This is supported by research, which has found that WOM is generally positive towards brands (by a margin of 6 to 1) and in particular towards consumer packaged goods, which includes alcohol (Keller 2007).

According to Brown and colleagues (2007) communication via WOM takes place within a social context which is influenced by the tie strength of the individuals within the relationship. This tie strength is “represented by the strength of the dyadic interpersonal relationships in the context of social networks” (Money, Gilly & Graham 1998, p.79). Information flow is affected by tie strength and research has shown that the stronger the tie strength, especially between good friends, the more frequently information is exchanged (Brown & Reingen 1987). The strength of the tie relationship is also influenced by the credibility of the information source. Source credibility theory identifies the bias and expertise of the information source and how these are recognised by the information recipient (Birnbaum & Stegner 1979; Buda & Zang 2000). Both theories of tie strength and credibility in relation to WOM are of relevance to adolescent alcohol brand choice because the majority of teenagers drink alcohol on a fairly regular basis with friends (Australian Institute of Health & Welfare 2011). Since teenagers generally value the recommendations of friends as being credible, brand strengths are developed through these recommendations.

### 2.4.7 Price

The pricing of alcoholic products and the effect in alcohol consumption has been well researched since the early 1980s. The general consensus from
studies in several countries has been that price rises in alcohol beverages lead to reductions in drinking and reductions in heavy drinking (Chaloupka, Grossman & Saffer 2002; Chikritzhs et al. 2009; Grossman et al. 1994; Ogilvie, Gruer & Haw 2005; Wagenaar, Salois & Komro 2009; Wagenaar, Toomey & Lenk. 2007). From a different perspective, research examining the effects of price discounting and increased adolescent alcohol consumption has also been conducted, indicating that price reductions in alcoholic products favoured by adolescents will influence an increase in the volume of purchases (Jones & Smith 2011). Research undertaken in the Netherlands also found a link between adolescents’ reported increase in alcohol consumption and corresponding price promotions for alcoholic beverages using price discounts and happy hours offered by cafes (Van Hoof, Van Noordenburg & De Jong 2008). Price discounting has also been associated with binge drinking and behavioural issues in studies of American college students (Kuo et al. 2003; Weitzman et al. 2003a).

An Australian study found that over half the adolescent drinkers surveyed paid for alcohol themselves and that alcohol was the fourth most common item of expenditure (Hemphill, Munro & Oh 2007). However, those adolescents who buy alcohol themselves may be fewer than those who pay for alcohol and get someone else to purchase it for them (Hemphill, Munro & Oh 2007). The importance of alcohol purchases in relation to cost is significant because although adolescents’, who work, generally have money available to purchase alcohol (Finch, Mortimer & Ryu 1997; Hemphill, Munro & Oh 2007), they also have limited funds. Their discretionary income is limited by the amount of casual or part-time work they can
undertake and therefore their alcohol purchases are sensitive to price (Skov 2009). A 2007 World Health Organization (WHO) expert committee report determined that measures that increase the price of alcohol, delay intentions among younger adolescents to initiate drinking and can slow the progression towards heavy drinking (World Health Organization 2007).

The effect of price increases on adolescent alcohol consumption in Australia has been the subject of several studies following the increase in the tax on pre-mixed products in 2008 (Chikritzhs et al. 2009; Skov et al. 2011). The decline in the sales volume of pre-mixed drinks since the price rise (Australian Bureau of Statistics 2013) has further supported a price sensitivity with younger drinkers. The effects of price fluctuations on adolescent alcohol brand choices, have however, received little attention from researchers. A limited study by Jones and Reis (2012) focused on the pre-mixed category and included price amongst features that were determining choice within the category. The study showed the relationship between price and choice was complex and indicated a trade-off between price and alcohol strength when it came to choice.

### 2.4.8 Availability

An American study by Gruenewald and Millar (1993) found that alcohol availability is generally divided between factors relating to “physical, social, economic and subjective” (Gruenewald & Millar (1993), p.40) dimensions. Physical availability relates to the location of alcohol retail outlets. Social availability relates to the availability of alcohol served at social occasions. Economic availability relates to the cost of alcohol relative to the
consumers’ income. Subjective availability relates to how consumers’ view the ease of access to alcohol and their willingness to obtain it (Gruenewald & Millar 1993). However, studies into the availability of alcohol need to account for the dynamic nature of the factors and their degree of influence.

Research in the United States has indicated that ease of access to alcoholic products significantly influences their use for adolescents (American Public Health Assoc. 1992). Widespread access to alcohol in the United States through traditional outlets such as pubs, clubs, cafes, restaurants and bottle shops plus petrol stations, minimarts and supermarkets has also been increased with the removal of limits on the number of outlet licenses in many states (American Public Health Assoc. 1992). However, in Australia, similar proposals for a lessening of the restrictions on the locations of licensed outlets and a removal of the limits on the number of outlet licenses have met with opposition. This opposition has been fuelled by research suggesting easy access to alcohol retailers promotes increased consumption (Huckle et al. 2008; Paschall et al. 2012; Wechsler et al. 2002). The influence of ease of access and increased alcohol consumption is further supported with a survey by the Australian Drug and Alcohol Office into adult purchasing expectations, which found that 41% of respondents would buy more alcohol if a retailer selling discount alcohol opened nearby (Gardiner & Coase 2011).

The ease of access to alcoholic products by adolescents has been supported by research in the United Kingdom, with data suggesting that 16 year-olds have little difficulty in purchasing alcohol (Willner et al. 2000). Further
research found that around 80% of 15 year-olds in the United Kingdom perceived alcohol to be very easy or fairly easy to obtain (Hibell 2004; Ogilvie, Gruer & Haw 2005). The supply of alcohol by older university students to underage students in the United States has also highlighted the ease of access (Brown, Matousek & Radue 2009).

There has been limited research into the relationship between marketing factors and the availability of alcoholic products and underage drinking in Australia. The ease with which teenagers are acquiring alcohol has, however, been identified in a survey of children aged 9 to 18 years at an independent eastern suburbs school in Sydney. The study found that 36% of those surveyed obtained alcohol from friends, 30% from parents, and 14% purchased it themselves. It was also found that for 55% of the younger children surveyed, parents were the most common source of supply (Sydney Morning Herald 2004). Research in Victoria found that the source of alcohol supply was related to risky drinking and alcohol-related problem behaviours among adolescents (Dietze & Livingston 2010). It was also found that older adolescents reported risky drinking and alcohol-related problem behaviours when they obtained alcohol from sources other than their parents (Dietze & Livingston 2010). Although not specifically related to adolescents, research conducted in Melbourne concluded that limitations on the number of off-premise alcohol retailers had the potential to reduce the degree of excessive alcohol consumption (Kavanagh et al. 2011).

Brand loyalty can also influence acquisition of products. Brand loyalty, or favourable attitudes towards a specific brand, can be measured according to
three levels: brand recognition, brand preference and brand insistence (Pride et al. 2006). Brand recognition is where consumers are aware of a brand and consider it a substitute if their preferred brand is not available. Brand preference is where consumers will definitely prefer one brand over another; however, they are still prepared to brand switch if their preferred brand is not available. Brand insistence is where consumers strongly prefer one brand and will not accept a substitute brand, and will actively seek out their preferred brand if it is not available at their usual retailer (Pride et al. 2006).

A consideration for this research was how brand loyalty was related to availability for underage drinkers, taking into consideration the additional complexity of age restrictions on purchases.

**2.4.9 Taste**

The taste of both food and drink is an important factor in its selection and preference. The milder or sweeter the taste, the easier it is to consume, and this is largely the criticism directed at the alcohol manufacturers in the production of alcopops and pre-mixed products (Mosher & Johnsson 2005; Smith, Edwards & Harris 2005). The manufacturers are accused of designing products that are ideally suited to an unsophisticated palate and take less time to mature to the taste (Rohrer 2002). Traditionally, the taste of alcohol has been used as a control because its strong taste deterred young people from drinking (Alcohol Concern Factsheet 2011). This is not the case with pre-mixed products because the alcohol taste is masked with a sweeter non-alcoholic base such as chocolate milk, cola or fruit juice (Copland et al. 2005; Jones & Donovan 2001). The taste of pre-mixed
products may also appeal to teenagers because of familiarity with their soft-drink base such as cola (Stevenson, Copeland & Gates 2007).

Studies have shown that taste is a very individual perception and can be influenced by a range of factors such as verbal and visual cues (Hoegg & Alba 2007). The taste of branded alcoholic beverages can be influenced by verbal cues such as the written information on the label, and visual cues such as the shape of the bottle or can and colour of the product (Jones 2011). This is particularly evident with alcopops which feature bright pink and silver labels and the drink is coloured pink to match the perceived image of guava or watermelon. Smell is also an important element of taste and the fresh fruity aromas of many of the alcopops match the perceived image of a fruit mixer drink.

Whereas the sweet fruity taste of alcopops or the light refreshing taste of beers may appeal to some younger consumers, the product is also surrounded by the image created by the marketer to support these taste perceptions and develop the brand image. Blind taste tests have confirmed that for some beverage categories consumers find it hard to distinguish one brand from another once the packaging and image have been removed. Research conducted in the United States using blind taste tests of beer confirmed that respondents were generally not able to distinguish the different tastes of selected beer brands. However, once labels were applied to the brands respondents were influenced by the labels and their perceived associations (Allison & Uhl 1964).
Consumers frequently report that the taste of a food or beverage was a significant influence in their choice of that product (Clark 1998; Glanz et al. 1998). However, taste preferences can be based on a number of complex factors, including the innate preference for a particular taste or flavour that can in some cases be attributed to cultural references (Germov & Williams 1999). Taste perceptions can also be influenced by past experiences, which can reinforce a positive sensory experience (Allen, Gupta & Monnier 2008). For example, if an individual enjoyed the taste of a product they may remember that experience and choose that brand again, thereby increasing the frequency of consumption.

Taste evaluations are also swayed by cultural symbols attributed to a food or beverage such as food habits and taste preferences (Allen, Gupta & Monnier 2008). This can be illustrated by the broad assumption that some Australian males are macho beer drinkers and brands such as VB reinforce this image in their advertising (Victoria Bitter 2013). However, an individual’s value priorities, which are complex in nature and a more subjective factor, can also influence taste. This is supported by the self-congruity theory (Sirgy 1986) and the assumption that consumers apply symbolic meanings to products using a category based judgement (Holbrook & Moore 1981). These symbolic meanings can further develop the image of a brand amongst a particular reference group. For example, the image that Vodka Cruiser is sweet and light in taste reinforces the idea that it is a drink designed for females.
In summary, a review of the literature in relation to the influence of alcohol marketing on adolescent alcohol consumption indicates a positive relationship across a broad range of factors. These factors include exposure to and subsequent recognition of television advertising, participation in sales promotions, and ownership of branded merchandise. Price variations have also been shown to influence alcohol consumption, together with taste perceptions and availability. Whereas extensive international research has been gathered on many areas of marketing, there are still gaps in the literature about the influence of marketing on underage drinking in Australia. The impact of price variations and product availability are two areas worthy of further research and are addressed in this research project. There is also a lack of Australian research on the relationship between marketing factors and adolescent alcohol brand choice. In response to this, word-of-mouth, sales promotions, and brand merchandise have been addressed in this research project.

2.5 Adolescent preferred type of alcohol

Once adolescents have made the decision to drink alcohol, they choose the type of alcohol and then the brand within the category. Studies investigating the type of alcohol preferred by adolescents have been conducted in several countries, including Switzerland (Kuntsche, Knibble & Gerhard 2006), Italy (Graziano et al. 2012), Canada (Smart & Walsh 1995) and the United States (Cremeens et al. 2009; Roeber et al. 2007; Siegel et al. 2011b). These studies have focused on the patterns of consumption of the different types of alcohol and indicate varying alcohol preferences between countries. The Swiss research, which studied the four main types of alcohol - beer, spirits,
pre-mixed and wine - concluded that drinking motives are potential explanatory factors for the association between alcohol preference and alcohol use (Kuntsche, Knibble & Gerhard 2006). The Italian research noted changing preferences by adolescents from wine within the family context to a preference for beer and spirits outside the home and with friends (Graziano et al. 2012). The Canadian research studied only three types of alcohol - beer, wine and spirits - and found that heavier consumption was amongst exclusive beer and spirit drinkers or drinkers of all three alcohol types (Smart & Walsh 1995). The American research found spirits to be the strongly preferred alcoholic beverage, followed by beer and malt beverages, and with minimal consumption of wine and pre-mixed beverages; however, there was a higher preference for both spirits and beer by older youth and those respondents who drank more frequently, and for binge drinkers (Siegel et al. 2011b).

The type of alcohol drunk by Australian teenagers has been researched in a longitudinal survey series conducted by the Australian Institute of Health and Welfare in the form of the National Drug Strategy Household Survey. The most recent survey (2010) showed that for 12 to 17 year-olds, pre-mixed spirits was the main type of alcohol consumed. Pre-mixed spirits were usually consumed by 38.2% of males and 62.1% of females. From the previous survey in 2007, and following the alcopop tax increase, 17.0% of 14 to 19 year-olds had changed their preferred main drink in the last 12 months, with 30.2% of respondents reportedly switching their preference from pre-mixed spirits to bottled spirits and liqueurs (Australian Institute of Health & Welfare 2011). These results indicate that Australian teenage
drinkers have a different preference for the type of alcohol consumed and brand choice than European and North American teenagers.

2.6 Adolescent brand choice

Brand preference and ultimately brand choice is based on the perceived value of a product to the consumer. The perceived value of the attributes of a product varies across consumers (Bahn 1986) and varies between product categories. How consumers measure the attributes of a product is a complex process and only limited research has been conducted on brand choice for alcoholic brands. The more general theories in relation to consumer behaviour and the desire to acquire products that fulfil certain needs cover a range of perspectives. The self-image congruity theory (Rosenberg 1979; Sirgy 1986) suggests that the choice of particular brands can be part of the process of constructing a consumer's self-concepts and creating their personal identity (Belk 1988; Gradff 1996; Kleine, Kleine & Allen 1995; Richins 1994; Solomon 1983). Part of this construction process is of particular relevance to adolescents: the appropriation of brand associations is derived from the use of brands by reference groups such as peers (Escalas & Bettman 2005). The symbolic properties of peer reference groups and the brands which they are perceived to use become closely associated (Escalas & Bettman 2005). This is evident with brands that are visible within a social context such as clothing and footwear. For many adolescents, their need to fit in or be associated with a particular group will influence their selection of brands with meanings congruent with aspects of their self-concept. The role of brands in defining and expressing self-concepts continues to evolve
through adolescence, with self-brand connections and brand choices changing to suit this evolution (Chaplin and John 2005).

Behavioural research has broadened the perspective of choice behaviour from individual consumer and choice object characteristics to include consumption situations. The importance of peer reference groups and brand choice can be linked to consumption situations, because the majority of adolescent drinking occurs with peers (Australian Institute of Health & Welfare 2011). Although limited research has been conducted in this area, Bearden and Woodside (1978) found a link between adult beer drinkers brand choice and consumption occasions.

The purchase of a brand can also reflect social ties to a brand community which reflects brand-user and self-image associations (Chaplin & John 2005; Escalas & Bettman 2003; Muniz & O’Guinn 2001). These brand communities are fostered by the marketers of the brand and more recently social media has been used to encourage a sense of membership and belonging. The increase in the value of brands is promoted by youth culture (Casswell 2004) and further helps to develop these brand communities. Dominant market brands, such as Vodka Cruiser within the pre-mixed alcohol category, play a role in this by communicating social status and aspirations (Jackson et al. 2000) and establishing a niche market with younger drinkers.

Brands and the identification with them have become an inherent part of life for many adolescents. The clothing, footwear, technology and music industries all have dominant brands that appeal to certain sub-groups within
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the adolescent population (Badaoui, Lebrun & Bouchet 2012; Rhee & Johnson 2011; Rhee & Johnson 2012). These sub-groups consist of peers and social networks, and association with these groups can help support an individual’s self-concept, or their self-perceived model of their abilities and attributes (Gerrig & Zimbardo 2002). Alcoholic brands have also developed niche markets among adolescents, with strong brand images such as ‘girlie drink’ for Vodka Cruiser pre-mixed (Jones & Reis 2012) and ‘guys drink’ for Carlton Mid Strength beer. This perceived gender bias for brands also helps to maintain brand preferences within peer sub-groups (Chaplin & John 2005; Martin & Bellizzi 1982; Phau & Lau 2001).

The concept of brand sensitivity (Laurent & Kapferer 1985), which explains a psychological process that affects a consumer’s purchasing decision, is of relevance to adolescent alcohol consumption. The theory suggests that there are three dimensions related to sensitivity to a brand: firstly, the consumer’s involvement in the category; secondly the degree of risk with the purchase; and thirdly, the degree to which a person uses a brand to project a specific self-image (Laurent & Kapferer 1985). Studies have shown that susceptibility to peer influence was a contributing factor in brand sensitivity for adolescent brand choice in clothing (Beaudoin & Lachance 2006). Although the three specific dimensions have not been researched in relation to adolescent alcohol brand choice, research into peer influence on adolescent alcohol consumption suggests a similar positive influence.

The issue of parental brand choice and its influence on adolescent's brand choice is considered within the theory of intergenerational brand loyalty
(Childers & Rao 1992; Bravo, Fraj & Martinez 2007; Moore, Wilkie & Lutz 2002). This theory proposes that individuals are influenced, often subconsciously, by the brands their parents choose. The theory is further extended to identify distinct differences between reference groups according to where products are consumed. The family for example, has greater influence on products consumed within the home, whereas peers have greater influence on goods consumed outside the home (Childers & Rao 1992). While intergenerational influences can extend into adulthood, their effect tends to diminish over time, as the influence of peers becomes more dominant and the role of the family changes (Osborne 2011). The degree of influence of parents on brand choice can also be related to specific product categories, such as high or regular consumption products, and for many households alcohol would be considered within this category. Although in the case of alcohol brand choice this does not necessarily relate to adolescent choice outside the home.

The influence of advertising on adolescent alcohol consumption has been well researched; however, the influence of advertising on adolescent alcohol brand choice is limited. An American survey for USA Today found that for teenagers advertising had a more pronounced influence on their desire to drink alcohol generally, than on their desire to purchase a specific brand (Horovitz & Wells 1997). A longitudinal study in the United States did, however, report a link between advertising expenditure by alcohol producers, favourite brand choice by adolescents, and binge drinking (Tanski et al. 2011). Research conducted in New Zealand also reported a link between television alcohol advertising, allegiance to specific beer
brands, and subsequent beer consumption amongst 18 to 21 year-olds (Casswell & Zhang 1998).

Research that specifically focuses on alcohol brand choice by underage drinkers is very limited. A pilot study conducted in the United States examined alcohol brand preferences of youths aged 16 to 20 but stopped short of examining factors influencing their brand choice (Siegel et al. 2011a). This pilot study was followed by further research that supported the previous findings, and noted that while youth alcohol consumption was spread over several alcohol types, that there was a concentration among only a limited number of alcoholic brands (Siegel et al. 2013). Another American study examined brand specific consumption by underage drinkers, but only within the pre-mixed category (Giga et al. 2011). Within this category, the researcher indicated a concentration of consumption among the top four brands. An Australian study by Jones and Reis (2012) also focused on the pre-mixed category and examined the determinants of choice over other alcoholic drinks. This research examined the areas of taste, alcohol strength, convenience, ease of carrying, product packaging, price, influence of peers, and impact of advertising as possible influences on the choice of pre-mixed beverages. Taste, followed by alcohol strength and cost were found to be the predominant factors influencing preference (Jones & Reis 2012).

In summary, the process by consumers of choosing a brand that suits their specific needs is a complex one. In the case of adolescent alcohol brand choice, the psychological processes are further influenced by peers and to a
lesser extent by family. Marketing presents an array of choice of product features and develops an awareness of the brand and its suitability through promotional activity. This promotional activity can include television advertising, sales promotions and branded merchandise. In addition to this, adolescent consumers are limited by the ease of access to their preferred brand choice, which is influenced by age restrictions. Their limited disposable income also affects their purchasing ability and can make their preferred brand choice sensitive to price variations.
Chapter 3

Conceptual Development and Hypotheses

3.1 Background to conceptual model development

The literature review supported the key socialisation agents - peer, family and marketing - as being influential in adolescent alcohol consumption. These three socialisation agents were therefore used as the basis for the two conceptual models that form the framework for the hypotheses and analysis of this research. The first conceptual model focuses on the influence and relationship of socialisation agents on adolescent alcohol consumption. The second conceptual model focuses on the influence and relationship of promotional marketing influences and product attributes on adolescent alcohol brand choice.

Although the literature review supported the influence of socialisation agents on adolescent alcohol consumption, there was a lack of research examining adolescent alcohol brand choice. The initial exploratory research for this research project indicated that factors influencing adolescent alcohol consumption were distinct from factors influencing adolescent alcohol brand choice. The exploratory research indicated that peers and parents had an effect in initial and ongoing alcohol consumption and that marketing activity was an effect but to a lesser degree. The exploratory research also indicated that marketing activity was more influential on brand choice and that parental influence was minimal. The research also indicated that
marketing influence on brand choice was divided between promotional activity and attributes of the product. The influence of peers on brand choice was indicated by word-of-mouth marketing, including brand recommendations from friends, specifically where drinking would take place, and friends’ brand choice. It was found that only some influencing factors (sales promotions, brand merchandise and price) were common to both alcohol consumption and brand choice; therefore, the development of two distinct models was considered appropriate and supported the philosophical view of the thesis.

Previous research has developed several models of adolescent alcohol consumption such as: adolescent motivations for use and initiation to alcohol, (Andrews, Hampson & Peterson 2011; Bank et al. 1985; Connor et al. 2011; Cooper 1994; Trucco et al. 2011), adolescent binge drinking (Collins, Witkiewitz & Larimer 2011; McClure et al. 2013; Northcote 2011), and parental and peer influence on alcohol consumption (Biddle, Bank & Marlin 1980). Of particular relevance is a model developed by Sancho and colleagues (2011), which examines adolescent alcohol consumption intentions from the perspective of consumer socialisation theory and incorporates parents, peers and advertising as being the key socialisation agents. The model proposed in this research project differs in that it presents the influence of peers, family and marketing together in an Australian context. It also develops marketing variables beyond advertising by also examining promotional influences, such as sales promotions and branded merchandise, together with availability, price, and taste.
Chapter 3 – Conceptual Development and Hypotheses

The theoretical framework (Figure 1) recognises the progression from alcohol consumption, to the type of alcohol consumed, to the choice of alcoholic brand. The initial focus of the research was the factors influencing adolescent alcohol consumption, which was then used as a framework for the further model of alcohol brand choice. The type of alcohol chosen was not developed as a separate model and would be worthy of further research. From this research, however, close links between the type of alcohol chosen and brand choice were indicated.
Chapter 3 – Conceptual Development and Hypotheses

Figure 1: Theoretical framework
3.2 Conceptual model of adolescent alcohol consumption

The three predominant areas of research into the effects of socialisation agents on adolescent alcohol consumption are peer, parental and marketing. This research project provides an examination of the relationship and interaction of these key socialisation agents within an Australian context and develops a conceptual model for alcohol consumption by adolescents.

Based on the literature review and the exploratory research, the researcher developed an initial conceptual model of adolescent alcohol consumption using the three constructs: peer influence, family influence and marketing influence. Ten independent variables that relate to the constructs formed part of the model (Figure 2). The basis of the model was to establish the effects of the independent variables and constructs on alcohol consumption. Alcohol consumption was measured by volume consumed (number of standard drinks within the last two weeks) and recent consumption (days since last drank alcohol).

The first construct of the model proposes peers as being an influencing factor in adolescent alcohol consumption, with the drinking experience of friends, and the occasions that adolescents drink with friends as the independent variables. The second construct proposes parental influence on alcohol consumption. The independent variables proposed are: the age at which adolescents first drank alcohol, parents’ approval of adolescent drinking, the occasions when adolescents drink with their parents, and their parents’ knowledge of their drinking. The third construct proposes marketing influences on adolescent alcoholic consumption. The independent
variables for the construct are: television advertising recognition, participation in sales promotions, ownership of alcohol branded merchandise, and price sensitivity. The model proposes that all three constructs would have a significant influence on adolescent alcohol consumption.

![Conceptual model of adolescent alcohol consumption](image)

Figure 2: Conceptual model of adolescent alcohol consumption

### 3.3 Conceptual model of adolescent alcohol brand choice

A further conceptual model of the influences on adolescent alcohol brand choice was developed. As a model of adolescent alcohol brand choice had not been previously developed, it was based on the available literature about adolescent drinking behaviours and on insights gained from the exploratory research focus groups as part of this research project. The focus group participants indicated that parental influence was insignificant in their alcohol brand choice. The research indicated that respondents who drank more often with their parents than their friends drank their parents’ brand choice. Those participants who drank their parents’ brand choice did so
because the product was available and they were not involved in the purchase decision. The respondents also indicated that television advertising was an important source of information about alcohol in general. However other factors, such as taste, sales promotions and word-of-mouth recommendations from friends, were more important in choosing a brand. Peer influence was indicated in word-of-mouth marketing, by the presence of popular brands being drunk by friends within the social environment, and brand recommendations from friends.

The theoretical framework for this research proposed three stages in the process of adolescent alcohol consumption and brand choice: the decision to drink alcohol, the choice of the type of alcohol, and the brand choice. The exploratory research focus groups indicated that the type of alcohol chosen was often synonymous with the brand and a conscious decision to drink a particular type of alcohol was not always apparent in the decision process. The second conceptual model of adolescent alcohol brand choice, therefore, focuses specifically on brand choice. The model is designed to apply to drinkers who have already made a choice of the type of alcohol they intend to drink, and then proposes the influences that determine the choice of the brand. The main difference between the conceptual model of adolescent alcohol brand choice and the previous conceptual model of adolescent alcohol consumption is that the brand choice model focuses on marketing influences.

The brand choice model proposes two constructs: promotional marketing and product attributes, each of which is determined by three independent
variables (Figure 3). The promotional marketing construct is determined by independent variables that relate to brand awareness and promotion of the product: sales promotions, brand merchandise, and word-of-mouth. The product attributes construct is determined by independent variables that relate to product features and the appropriateness of the product to the consumer: availability, taste, and price. The six independent variables reflect the marketing mix (product, price, promotion and place), which represent the key elements that marketers use to position their products within the market (Armstrong et al. 2012; Elliott, Rundle-Thiele & Waller 2012; Solomon et al. 2011).

This model proposes that there are different influences on adolescent alcohol brand choice compared to adolescent alcohol consumption, with the exception of sales promotions, brand merchandise and price. The conceptual model of adolescent alcohol consumption includes influences on both drinkers and non-drinkers, whereas the conceptual model of adolescent alcohol brand choice includes influences on choices made only by drinkers.
3.4 Hypotheses

In order to test the fit of both conceptual models, the researcher developed 13 hypotheses. These 13 hypotheses proposed social and marketing factors which may influence adolescent alcohol consumption and alcohol brand choice. The literature review supported peers, family and television as being important sources of information in youth consumer socialisation and as influencing the values, norms and behaviour of adolescents (Kraak & Pelletier 1998; Marquis 2004; Sancho, Miguel & Aldás 2011). These factors were therefore considered appropriate for seven of the hypotheses. The remaining six hypotheses relate to other marketing factors in addition to television advertising. Other forms of promotion; sales promotions, brand merchandise and word-of-mouth are hypothesised. Product attributes, such as price, availability and taste are also hypothesised. From the exploratory research, product attributes were indicated as distinct from promotional influences. Therefore, these hypotheses were largely guided by the exploratory research and developed in the constructs for the model of alcohol brand choice. However, all hypotheses were based on previous Australian and international research and the exploratory research conducted in Perth during 2004 as part of this research project.

The hypotheses are grouped according to their relevance to peer, parental, and marketing influences. The first six hypotheses relate to adolescent alcohol consumption; the next four hypotheses relate to the marketing influences on both alcohol consumption and alcohol brand choice; and the last three hypotheses address only alcohol brand choice. From the thirteen
hypotheses, the structure of the questionnaire was developed and the hypotheses were tested using a range of statistical methods.

### 3.4.1 Peer influence hypotheses

**H1:** The number of different brands of beer, pre-mix and spirit that friends drink will have a positive association with alcohol consumption

**H2:** The number of different occasions when drinking takes place with friends will have a positive association with alcohol consumption

The two hypotheses relating to peer influence were proposed to test the peer influence construct of the conceptual model of adolescent alcohol consumption using the independent variables: friends’ drinking experience and drinking occasions with friends. The intention of this research project was to develop a broad background for underage drinkers by examining their interaction with peers and whether this influenced their alcohol choices. The measurement of this interaction included the extent of their friends’ drinking experience across a range of alcohol categories, the number of different occasions that they drank with friends, whether their last drink was with friends, and whether friends provided a source of information on new alcoholic products.

### 3.4.2 Family influence hypotheses

**H3:** The younger individuals were when they first consumed alcohol will have a positive association with alcohol consumption

**H4:** Parental approval of adolescents’ drinking will have a positive association with alcohol consumption

**H5:** The number of different occasions when drinking takes place with parents will have a positive association with alcohol consumption

**H6:** Parental knowledge of adolescents’ drinking will be positively associated with alcohol consumption
Chapter 3 – Conceptual Development and Hypotheses

The four hypotheses relating to parental influence focused on adolescent alcohol consumption. The exploratory research indicated that parental influence and drinking with parents was related more to alcohol consumption rather than brand choice. The first hypothesis proposed that the younger an individual was when they first consumed alcohol will be positively associated with current alcohol consumption. This hypothesis was developed in support of previous research which found the younger children are when alcohol use is initiated; the more likely they are to developed positive expectancies to alcohol (Cranford et al. 2010; Dalton et al. 2005). Adolescents with strong positive alcohol expectancies tend to drink more and evidence indicates that alcohol expectancies are among the strongest predictors of drinking in adolescents (Cranford 2010; Darkes, Greenbaum & Goldman 2004; Goldman, Del Boca & Darkes 1999; Killen et al. 1996; Smith et al. 1995).

The second hypothesis concerning family influence proposed that parental approval of adolescents’ drinking will have a positive association with alcohol consumption. International research has found that parental approval and their level of acceptance of teenage drinking, indirectly influences teenage drinking through the teenager’s perceptions of parenting, especially monitoring and discipline received (Bahr & Hoffmann 2010; Latendresse et al. 2008; Patock-Peckham & Morgan-Lopez 2009). This hypothesis was proposed in support of the international research and to determine the level of approval of adolescent drinking within an Australian context.
The third hypothesis concerning family influence proposed that the number of different occasions when drinking takes place with parents will have a positive association with alcohol consumption. Australian research found that almost half of those adults surveyed agreed that 15 to 17 year-olds should be able to consume alcohol at home (Tillett 2009b). Since there is a lack of Australian research regarding other occasions that adolescents drink with their parents, this hypothesis was proposed to determine the extent of drinking situations with parents.

The last hypothesis relating to family influence proposed a positive association with parents’ knowledge of adolescent drinking, to determine the level of adolescent drinking that takes place without parental knowledge and whether parental knowledge of drinking influenced the amount of alcohol consumed.

3.4.3 Marketing influence hypotheses

\[ H7a: \text{ Recognition of television advertising for select alcoholic brands will have a positive association with alcohol consumption} \]

\[ H7b: \text{ Recognition of television advertising for select alcoholic brands will not be associated with alcohol brand choice for those brands} \]

Exposure to television advertising for alcoholic products and a positive association with alcoholic consumption has been indicated in empirical research findings over the past 20 years. The first part of this hypothesis H7a, reflects this view, however, because underage drinkers have distinct characteristics in relation to the type of alcohol consumed and their brand preference, it was considered important to examine the relationship of advertising to consumption for a broad range of alcoholic products. The
exploratory research suggested that there was also a gender bias for certain types and brands of alcohol, so this was further examined in relation to television advertising.

Hypothesis 7b is proposed in support of the view that, notwithstanding the entertainment value and lifestyle aspirations presented in television advertising for alcoholic products, recognition of advertising for select alcoholic brands will not create an association with choice of those brands. The exploratory research indicated that television advertising was more influential in creating positive attitudes towards drinking than towards a particular brand. And in the exploratory study the respondents nominated several television commercials that they found entertaining, in particular for Hahn and Tooheys beer, but commented that they wouldn’t change to those brands, or drink beer because of the advertising. These preliminary indications correspond with American research that also found television advertising was more likely to encourage alcohol consumption rather than brand choice (Horovitz & Wells 1997).

The influence of alcohol advertising in other media, such as magazines, has generated some research (King et al. 2009; Thomsen & Rekve 2004). However, respondents in the exploratory focus groups did not mention any other forms of advertising apart from television as being influential in their brand choice. This finding was confirmed by the respondents of the questionnaire pre-testing, who suggested that the inclusion of other media was unnecessary in the survey because they could only recall television advertising for alcoholic products. The option to mention other forms of
media was, however, retained in the questionnaire. Consequently, the focus of the hypothesis was television advertising which aligned with research by Sancho and colleagues (2011).

\[ H8a: \text{The number of sales promotions participated in for alcoholic products will have a positive association with alcohol consumption} \]

\[ H8b: \text{The level of importance of sales promotions for alcoholic products will have a positive association with alcohol brand choice} \]

These hypotheses draw a distinction between active participation in sales promotions for alcoholic products and exposure to promotional merchandise for alcoholic products. The hypotheses recognise the involvement of adolescents in sales promotions which they would actively seek out and knowingly participate in. Whereas exposure to promotional merchandise in the home, can occur without being directly involved in the purchase. Exposure to alcohol merchandise can occur if items have been purchased by parents or siblings or received as a gift. In order to participate in sales promotions for alcoholic products in Australia, the participant is generally required to do so at a licensed premise or via the purchase of an alcoholic product. It was, therefore, assumed that as respondents for the survey were underage; their involvement in sales promotions would be limited by age restrictions on purchases.

Previous research has developed an association between sales promotions and increased overall consumption of alcohol by adolescents in Australia (Jones & Magee 2011). However, there is limited research prior to this study that examines sales promotions and alcohol brand choice by adolescents in Australia. In support of the available research, the first
hypothesis proposed a positive association with participation in sales promotions for alcoholic products and alcohol consumption. The second hypothesis, proposed that the level of importance of sales promotions for select alcoholic products would have a positive association with brand choice. It was reasoned that respondents would participate in sales promotions for products that they were familiar with. The exploratory research indicated that despite the age constraints on adolescents, many participants were familiar with alcohol sales promotions and had participated in them.

\[ H9a: \textit{The number of alcohol branded merchandise items owned or exposed to in the home will have a positive association with alcohol consumption} \]

\[ H9b: \textit{The level of importance of alcohol branded merchandise will have a positive association with alcohol brand choice} \]

Several American research studies found support for the relationship between exposure to alcoholic branded merchandise and alcohol consumption (Fisher et al. 2007; Kilgore 2005; McClure et al. 2006; McClure et al. 2009). However, to date there has been limited research conducted in Australia and, in particular, research into the exposure to alcohol branded merchandise as an effect in brand choice for underage drinkers. Respondents for the initial exploratory research for this study indicated a wide exposure to alcohol branded merchandise and a liking for particular types of merchandise such as t-shirts and bottle openers. There also appeared to be a gender bias for the type of merchandise and the brand displayed. For example, females reported reluctance to wear anything with VB on it because of the perceived male image of the brand.
Chapter 3 – Conceptual Development and Hypotheses

The first hypothesis is proposed in support of the American research, which found exposure to alcohol branded merchandise to be positively associated with overall alcohol consumption. And since an association with alcohol branded merchandise indicated a general acceptance of alcohol, and alcohol branded merchandise was readily accepted by Australian teenagers, a similar conclusion could be drawn. However, the second hypothesis covered new ground by proposing that adolescent exposure to alcohol branded merchandise and its perceived importance will be associated with brand choice.

\[ H10a: \text{Price sensitivity for select alcoholic products will be an effect in alcohol consumption} \]

\[ H10b: \text{Price reductions for select alcoholic brands will be an effect in alcohol brand choice} \]

Previous research has found that in a several countries price increases have consistently shown a reduction in alcohol consumption (Chikritzhs et al. 2009; Grossman et al. 1994; Ogilvie, Gruer & Haw 2005; Van Hoof, Van Noordenburg & De Jong 2008; Wagenaar, Toomey & Lenk 2007; Wagenaar, Salois & Komro 2009). However, Australian research in relation to effects of alcohol price variations and adolescent alcohol brand choice has been limited to a study by Jones and Reis (2012) which focused on pre-mix products. The participants in the exploratory research focus groups for this research project indicated that price fluctuations were not an important factor in their alcohol brand choice. All but two of the participants in the focus groups had part-time or casual employment, which is the case for 42.6% of Western Australian school students, aged 15 to 19 (The Weekend
In addition to this, many of the participants in the focus groups had allowances paid to them by their parents. And for many, being full-time students living at home, their parents also paid for their clothing and food. The participants reported that the majority of their income from casual employment was used to purchase of music, alcohol, fast food, presents for friends (particularly in the case of females), and special or unique items of clothing that their parents didn’t consider necessary. And because alcohol was part of their regular purchasing behaviour, they were aware of the prices of various brands and budgeted for drinking occasions. For participants in the focus groups, the price difference between brands did not appear to generate significant brand switching.

The measure of sensitivity of demand to changes in price is defined as the price elasticity of demand (Elliott, Rundle-Thiele & Waller 2012; Pride et al. 2006; Solomon et al. 2011)). The initial exploratory research indicated there was slight elasticity of demand for the product categories drunk by adolescents. That is, a reduction in the price of the brand they drunk most often would not significantly increase their purchases. A comparison of pricing within alcohol categories was therefore considered an appropriate measure of an effect in brand choice. Pricing within the beer and pre-mixed categories varies according to the container size and alcohol by volume. Vodka Cruiser, as the market leader within the pre-mixed category, has set a bench mark or reference price for alcopops and is the highest price per standard drink (Appendix F). It was therefore considered appropriate to measure the importance of pricing for individual brands as an effect in brand choice. The brand loyalty to select brands was also considered in
relation to price reductions of competitive brands and the level of price reduction it would take for brand switching to occur.

The two hypotheses proposed that changes in the price of select alcoholic brands would be an effect in alcohol consumption and alcohol brand choice. For the latter, this research examined price sensitivity in relation to a price reduction of the respondents brand choice. The research also considered the respondent’s anticipated purchases of their brand choice in response to a price reduction of a substitute brand.

**H11:** *Word-of-mouth brand recommendations from friends will be positively associated with alcohol brand choice*

This hypothesis is closely linked to peer influence. Other research has shown that peers are the most likely source of brand recommendations because adolescents are more likely to drink with peers (Andrews et al. 2002; Bahr, Hawks & Wang 1993; Gaughan 2006; Kiuru et al. 2010; Reis & Riley 2000). Brand recommendations from parents were also considered; however, the exploratory research found that although some adolescents drank with their parents, their parents’ brand choice was not necessarily their preferred brand choice. Thus participants drank their parents’ brand choice either because of convenience or in many cases they had no choice of the brand, if alcohol was offered by their parents. Comments such as “it’s free so I’ll drink it” and “I wouldn’t go out and buy wine to drink with friends” were common from the exploratory research.

Friends as a source of information on alcoholic products, was considered worthy of examination because word-of-mouth is a powerful tool in
spreading brand awareness and encouraging product trial (Wilson 1991). Brand referrals from friends was also supported by respondents in the exploratory research focus groups, with reports of tasting new flavours of pre-mix drinks brought to parties by friends. Friends’ brand choice was also considered as part of word-of-mouth brand recommendations because this reinforced brand choice within the social environment and encouraged positive recommendations.

**H12: The availability of select alcoholic brands will be an effect in alcohol brand choice**

This hypothesis proposes that if the brand choice for adolescents was not available, this would have an effect in the selection of that brand. The assumption was that underage drinkers would not remain brand loyal, and they would brand switch to another product within the alcohol category if their preferred brand was not available.

Focus group participants in the exploratory research indicated that they had preferences for particular brands of alcohol, and despite their relatively unsophisticated palates, they had already well established brand loyalties. This hypothesis tests the level of brand loyalty as determined by availability. It also became apparent from the exploratory research that the issue of availability was, in many cases, closely linked to acquisition of the product, and that if respondents could not acquire their brand choice they were prepared to switch brands within the alcohol category. Since drinkers surveyed were not legally able to purchase alcohol (under 18 years of age), the method of acquisition of alcohol in some instances influenced brand choice. Unlike adult drinkers, many underage drinkers needed to consider
where they would acquire their alcohol prior to going to parties or drinking with friends. However, the initial focus groups indicated that alcohol was readily available for underage drinkers, by the following means:

- Purchased themselves at bottle departments where it was known that the staff didn’t ask for proof of age
- Purchased themselves at bottle departments using false identification
- Purchased by older friends, brothers or sisters
- Purchased by parents
- Given to them by friends, brothers or sisters, other relatives or boyfriends
- Given to them by parents
- Taken from their parents without their parents’ knowledge

Thus the acquisition of alcohol by underage drinkers is an involved and considered process. It was therefore appropriate to examine whether the brand drank most often was influenced by the ability to acquire that brand. Also, the exploratory research indicated that some drinkers (particularly those who reported drinking with their parents) drank their parents’ brand choice because they were either unable or unwilling to acquire alcohol for themselves. Therefore, the issue of another person in the role of gatekeeper for the acquisition of an alcoholic brand was also worthy of consideration. This hypothesis proposed that the ease of availability of select alcoholic brands will have an effect in brand choice.
**H13: Taste will be positively associated with alcohol brand choice**

The literature presented a complex set of variables to determine the assessment of taste in relation to alcohol consumption. But to date there is limited research on the influence of taste on adolescent alcohol brand choice. The focus of this hypothesis was on brand choice rather than alcohol consumption as the respondents’ would need to be drinkers in order to compare the taste of various brands. The researcher surmised that the ready acceptance of the taste of select alcoholic products would be an important link to brand adoption.

The exploratory research confirmed that teens enjoyed the taste of some alcoholic products more than others. Female participants commented on the “fruiter” taste of alcopops, whereas male participants commented on the “refreshing” taste of the lighter style beers. Some participants compared the experience of drinking these products to the liking of fast food. They commented that fast food was easier to eat than other foods such as olives or anchovies, which they deemed to be an acquired taste. They commented that red wine in comparison to alcopops was an “acquired taste”. Discussions within the focus groups confirmed that there was considerable brand loyalty based on taste, with Vodka Cruiser of particular note. Participants made mention of the individual fruit flavours in the Vodka Cruiser range and the “light fruity taste” of the product.
Chapter 4

Methodology

4.1 Introduction

As previously discussed, the factors influencing adolescent alcohol consumption and brand choice are complex so it is difficult for one study to cover all aspects of the topic. This research therefore, focuses firstly on alcohol consumption then secondly, on alcohol brand choice. The limitations of this approach is that it does not cover in depth the choices made by adolescents regarding the type of alcohol to consume. This would be a topic for further research.

The philosophical view of this research is that the socialisation agents influencing adolescent alcohol consumption are not of the same significance or indeed in some cases the same, as those influencing alcohol brand choice. In support of this view and in order to examine the issues from a broader perspective, the methodology used for this research is mixed methods. A two phase approach is used, firstly, using qualitative exploratory research to determine the key issues for examination and secondly, quantitative explanatory research. By adopting a mixed-methods research design (Teddle & Tashakkori 2009) the research capitalised on the strengths and reduced the limitations associated with using solely quantitative or qualitative methods (Creswell 2009; Johnson & Turner 2003; Teddlie & Tashakkori 2003). This methodology also provides a richer and more
comprehensive view of the issues for investigation. The qualitative research component of this research project allowed an in-depth exploration of the feelings and opinions of a smaller group of respondents within the context of a group discussion (Creswell and Clark 2007). It also provided background information for the researcher and contributed topics for further examination in the explanatory research phase. In the explanatory research phase the researcher gathered data from a larger sample population and sought to confirm the hypotheses developed from the initial research.

The research project was conducted in the south-east metropolitan area of Perth, Western Australia from 2004 to 2006. Initial exploratory research included focus groups and interviews. This was followed by the major research component which was a detailed questionnaire. The exploratory research began in late 2004 with focus groups comprised of TAFE (Tertiary and Further Education) students aged 16 to 17 years. The 60 participants were recruited from three TAFE classes and participated in eight focus groups. The focus groups included both drinkers and non-drinkers. The objective of the focus groups was to establish current behavioural patterns in relation to drinking situations and brand preferences. The exploratory research also included interviews with drive-in bottle department staff at four hotels in the south-east metropolitan area of Perth. As part of this research alcohol purchasing behaviour was also observed. This initial exploratory research was used to obtain general background information (Flick 2007) and aid in the development of the conceptual models from which the 13 hypotheses were formed, and became the basis of a detailed questionnaire which was the explanatory component of the research. The
questionnaire covered demographic, psychographic and marketing information, including social behaviours, the influence of peers and family, introduction to alcohol consumption, current patterns of consumption, influences on brand choice and the significance of exposure to marketing activity.

4.2 Exploratory research - focus groups

A total of 60 students from three class groups at the Bentley campus of Swan TAFE participated in eight focus groups in a classroom environment in late 2004. The sample group of students were recruited from business certificate courses and were invited to participate in the research by their lecturer. The Bentley campus of Swan TAFE was chosen because it is one of the largest TAFE colleges in the south-east metropolitan area of Perth and it was within the wider proposed research area. The total student group comprised both local and international students aged 16 to 23 years; however, in order to focus on underage drinking, only those students aged 16 or 17 were recruited. The majority of the students were recent school leavers, having completed year 11 or 12. A written explanation of the research subject matter was given to all students a week prior to the research in order for them to notify their parents. From the three class groups a total of eight students declined the request to participate (two citing religious grounds and six citing non-drinking). This gave a total of 60 participants, with a participation rate of 88%. The three class groups of 22, 15 and 23 were then divided into eight smaller focus groups of between six to eight participants (Daume 1988; Stewart & Shamdasani 1990). These groups
were selected at random and included both drinkers and non-drinkers. Of the total 60 participants, 51 (85%) were current drinkers (Table 1).

*Table 1: TAFE focus group participants*

<table>
<thead>
<tr>
<th>TAFE focus groups</th>
<th>No. of participants</th>
<th>Drinkers</th>
<th>Non-drinkers</th>
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<td>Group 1</td>
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<td>Group 7</td>
<td>8</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Group 8</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Total Participants</td>
<td>60</td>
<td>51 (85%)</td>
<td>9 (15%)</td>
</tr>
</tbody>
</table>

The eight focus groups were moderated by the researcher and each group discussed the same set of five topics in relation to underage drinking and brand choice. The sessions were limited to approximately 30 minutes and the topics discussed were as follows:

1. Why they chose to drink or not drink alcohol
2. Their preferred alcoholic brands
3. What factors influenced their brand choice
4. How they found out about alcoholic brands
5. How they acquired alcohol

The moderator ensured that the first topic included a response from all participants (both drinkers and non-drinkers) and that the remainder of the topics were discussed only by drinkers. Due to the sensitive nature of the research (Hill 1995; Lee 1993; Lee & Renzetti 1990), and to encourage more candid responses, the focus group discussions were not recorded. The responses were noted by the researcher, who acted as moderator, and by a research assistant. The content analysis was based on conventional content.
analysis (Hsieh & Shannon 2005). This method was considered appropriate because the existing theory and research literature on the topic of adolescent alcohol brand choice is limited. By using this approach, the researcher was less inclined to impose preconceived categories to the data (Kondracki & Wellman 2002). The responses from the discussions were categorised and summarised according to the topics (Table 2).

Table 2: Response categories from focus groups

<table>
<thead>
<tr>
<th>Focus group discussion topics</th>
<th>Response categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Why they chose to drink or not drink alcohol</td>
<td>Drank for social reasons/friends</td>
</tr>
<tr>
<td></td>
<td>Drinking provided an emotional high</td>
</tr>
<tr>
<td></td>
<td>Didn’t drink because of parents’ disapproval</td>
</tr>
<tr>
<td></td>
<td>Didn’t drink because of religion</td>
</tr>
<tr>
<td>2. Their preferred alcoholic brands</td>
<td>26 brands nominated</td>
</tr>
<tr>
<td></td>
<td>Vodka Cruiser the most popular brand</td>
</tr>
<tr>
<td></td>
<td>Beer and spirits preference by males</td>
</tr>
<tr>
<td>3. What factors influenced their brand choice</td>
<td>Sales promotions</td>
</tr>
<tr>
<td></td>
<td>Merchandise</td>
</tr>
<tr>
<td></td>
<td>Price discounts</td>
</tr>
<tr>
<td></td>
<td>Taste of the product</td>
</tr>
<tr>
<td></td>
<td>What their friends drink</td>
</tr>
<tr>
<td></td>
<td>Who they will be drinking with</td>
</tr>
<tr>
<td>4. How they found out about alcoholic brands</td>
<td>Recommendations from friends</td>
</tr>
<tr>
<td></td>
<td>Tasting other people’s drinks at parties</td>
</tr>
<tr>
<td></td>
<td>Products on display at retailers</td>
</tr>
<tr>
<td></td>
<td>Television advertising</td>
</tr>
<tr>
<td>5. How they acquired alcohol</td>
<td>Given to them at parties</td>
</tr>
<tr>
<td></td>
<td>Given to them by friends</td>
</tr>
<tr>
<td></td>
<td>Given to them by parents</td>
</tr>
<tr>
<td></td>
<td>Bought it themselves</td>
</tr>
<tr>
<td></td>
<td>Got friends/family to buy it</td>
</tr>
</tbody>
</table>

The focus groups provided a wealth of anecdotal information on drinking situations and an insight into the most popular brand choices. The data indicated that for the sample, brand choice was closely linked to drinking occasions and who they drank with. The brand nominated as the most preferred was Vodka Cruiser followed by Smirnoff Black. Gender preference for types of alcohol and brands was also indicated and a list of 26
preferred brand choices was gathered. Taste was indicated as the most important factor in choosing a brand. Television advertising was an influence on information gathering about alcohol and alcohol brands in general but did not necessarily influence particular brand choices. The respondents acquired alcohol from a variety of sources and reported having no difficulty in obtaining alcohol when they wanted it.

4.3 Exploratory research - interviews

Interviews with hotel staff were conducted by the researcher between 8.00 pm to 9.00 pm on two Friday nights and two Saturday nights in December 2004 at the drive-in bottle departments of The Lynwood Arms, The Burrendah Tavern, Mount Henry Hotel and High Road Hotel. Friday and Saturday nights were selected because the hotels confirmed that this was their busiest selling period for the drive-in bottle departments. The four hotels were selected from the wider proposed research area of south-east metropolitan Perth. Six hotels were approached, but two declined to participate. The purpose of the research was to gain background information on the topic from drive-in bottle department staff and for the researcher to unobtrusively observe buying situations.

Seven drive-in bottle department staff participated in face-to-face interviews with the researcher. The staff were selected randomly, based on whether they were working on the nights the research was conducted and whether they were willing to participate. Eight staff at the six hotels were invited to participate but one staff member declined, citing work commitments. The participants were over the age of 18 years, and comprised one female and
six males. Due to the sensitive nature of the research (Hill 1995; Lee & Renzetti 1990), and as it is illegal for drive-in bottle department staff to sell alcohol to minors (Liquor Control Act 1988), the interviews were not recorded. It was also anticipated that by not recording the interviews, the respondents would be encouraged to provide more candid responses (Lee 1995). The researcher took field notes from the interviews (Penaloza & Cayla 2007). The format of the interviews was semi-structured and based on a question guide (Walliman 2006), with each interview taking approximately 20 minutes. The seven participants were asked the same set of three questions:

1. Had they seen what appeared to be adults purchasing alcohol for minors?
2. What were the peak purchasing periods for younger buyers?
3. What were the preferred brands for younger buyers?

These interviews focused on customers’ purchasing behaviour because the respondents were sales staff and their responses were based on observed purchasing behaviour and not consumption. All seven respondents reported having seen “plenty of occasions” of what appeared to be adults purchasing alcohol for minors and all respondents confirmed that the peak purchasing periods for younger buyers was “Friday and Saturday nights on the way to parties”. A combined total of 24 preferred brands for younger buyers were identified by the respondents. They all cited Vodka Cruiser as being the most popular choice, particularly for younger females. The responses from the interviews were categorised and summarised according to the question topics (Table 3).
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Table 3: Response categories from interview participants

<table>
<thead>
<tr>
<th>Interview discussion topics</th>
<th>Response categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purchasing behaviour</td>
<td>Parents buying for adolescents</td>
</tr>
<tr>
<td></td>
<td>Friends buying for adolescents</td>
</tr>
<tr>
<td></td>
<td>Adolescents buying for themselves (possibly with fake ID)</td>
</tr>
<tr>
<td>2. Peak purchasing periods for young buyers</td>
<td>Friday and Saturday nights</td>
</tr>
<tr>
<td></td>
<td>On the way to parties</td>
</tr>
<tr>
<td></td>
<td>Schoolies week</td>
</tr>
<tr>
<td>3. Preferred brands for younger buyers</td>
<td>24 brands identified</td>
</tr>
<tr>
<td></td>
<td>Alcopops preferred by females</td>
</tr>
<tr>
<td></td>
<td>Beer and spirits preferred by males</td>
</tr>
<tr>
<td></td>
<td>Vodka Cruiser the most popular brand</td>
</tr>
</tbody>
</table>

These interviews provided information on how adolescents acquired alcohol, the timing of purchases of alcohol and related drinking occasions, and the most popular brands. The participants also indicated what appeared to be brand preferences for adolescents according to gender.

4.4 Explanatory research - survey questionnaire

Based on the literature review, exploratory research, conceptual models and hypotheses, a seven page questionnaire as subsequently developed (Appendix A). The format of the questionnaire was adopted from the School Health and Alcohol Harm Reduction Project (SHAHRP) questionnaire developed by the National Centre for Research into the Prevention of Drug Abuse at Curtin University (McBride et al. 2004; SHAHRP 2004). The ‘patterns of alcohol use’ section of the SHAHRP questionnaire gathered similar data to the ‘your alcohol consumption’, ‘your friends’ alcohol consumption’ and ‘drinking situations’ sections of the questionnaire developed for this research. Other sources of measures on which the questionnaire was based included the Australian Secondary School
Student’s Use of Alcohol 2005 (White & Hayman 2006), Alcohol Consumption Patterns Among Australian 15-17 year olds from 2000 to 2004 (King, Taylor & Carroll 2005a) and A Guide to Australian Alcohol Data (Australian Institute of Health and Welfare 2004).

The questionnaire developed for this research comprised 31 questions, which were divided into seven sections:

- Your background
- Your alcohol consumption
- Your friends’ alcohol consumption
- Drinking situations
- Your exposure to alcohol marketing
- Pricing and availability of alcohol brands
- Brand choice

This format enabled the gathering of general demographic data, respondent’s drinking behaviours, peer and parent drinking behaviours, and responses to marketing activity, which aligned with the information sought in the hypotheses. The last question in the questionnaire specifically targeted brand choice and a selection of 13 possible influences on brand choice were presented that aligned to the 13 independent variables in the conceptual model of adolescent alcohol brand choice. This question presented the respondents with a 5 point Likert scale (Zikmund et al. 2007) to measure their considered level of importance in relation to brand choice for the brand that they drank most often.

4.4.1 Questionnaire pre-testing

The questionnaire was pre-tested with eight participants, five females and three males, all aged 17 years. Their selection was based on a convenience
sample, with participants recruited from the suburbs of Willetton and Leeming. These suburbs are within the wider proposed research area of south-east metropolitan Perth. Parental approval was gained prior to the research. The researcher presented the questionnaire to each respondent to complete individually and the respondent’s understanding of the questions was then discussed with the researcher. The questionnaire took between 10 to 15 minutes to complete and all participants were current drinkers. It was estimated that non-drinkers would take less than five minutes to complete the questionnaire.

As a result of the feedback from the respondents, the researcher changed the wording to more simplistic expressions and shortened some questions. For example, the researcher added words that adolescents currently use such as ‘gigs’ and ‘raves’, to the list of concerts and festivals, and ‘schoolies’ to describe end of school holidays. Additional brands of alcohol were added to the possible choices, including Becks, Mudshake and Strongbow. The question relating to brand choice was shortened to remove ‘magazine advertising’, ‘radio advertising’ and ‘television advertising’ and this was replaced with ‘memorable advertising’. The pre-testing respondents reported that they were not aware of any magazine or radio advertising for alcoholic products and thought the addition of these two categories added unnecessarily to the length of the questionnaire. This decision was supported by the earlier focus groups, as no respondents reported being influenced in their brand choice by either magazine or radio advertising; and since television advertising was referred to in previous questions, this was considered an appropriate amendment.
4.4.2 Questionnaire sample selection

The sampling method for the survey was multi-stage cluster sampling (Kalton1979; Walliman 2006), with respondents drawn from four high schools: Willetton, Thornlie, Armadale and Lynwood Senior High Schools in the south-east metropolitan area of Perth, Western Australia. The schools selected are the largest public high schools within the south-east metropolitan area and cover a broad socio economic range. The Willetton area is made up of predominantly middle class two parent families with incomes derived from skilled occupations. There are also a relatively high proportion of Asian migrants within the area. In comparison, the Armadale area has more single parent households, with lower incomes that are derived from trade or clerical occupations (Australian Bureau of Statistics 2008).

The sample selection provided data from a variety of underage drinkers, including fairly inexperienced 13 year-olds to more experienced 17 year-olds with more established drinking patterns. Non-drinkers were also surveyed in order to establish an awareness level for marketing activities such as television advertising, sales promotions and promotional merchandise. A total of 677 respondents were surveyed, but only 670 questionnaires had sufficient data to be analysed.

4.4.3 Questionnaire data collection procedure

Students who were currently studying health education at the four high schools were asked to complete the questionnaire. The health education classes were selected by the school administrators because they considered the survey relevant to the students’ current health awareness studies. The
teachers selected the classes to be surveyed, and distributed and supervised the completion of the questionnaires. The students who participated in the survey were from years 8, 9 and 10, because years 11 and 12 did not include health education as a compulsory subject. The class sizes surveyed were between 27 to 30 students. The data collection period was from August to November 2006. A smaller number of surveys (56) were completed at Thornlie Senior High because they were surveyed in November, when fewer teachers were willing to participate in the administration of the survey due to work commitments. A summary of the total sample size is provided as Table 4.

**Table 4: Questionnaire survey sample**

<table>
<thead>
<tr>
<th>High School Surveyed</th>
<th>Total school population</th>
<th>Health education students invited to participate</th>
<th>Students declined to participate</th>
<th>Students surveyed</th>
<th>Response rate from health education classes</th>
<th>% of total respondents surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willetton</td>
<td>1,765</td>
<td>125</td>
<td>7</td>
<td>118</td>
<td>94.4%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Thornlie</td>
<td>1,531</td>
<td>58</td>
<td>2</td>
<td>56</td>
<td>96.5%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Armadale</td>
<td>734</td>
<td>290</td>
<td>3</td>
<td>287</td>
<td>98.9%</td>
<td>42.4%</td>
</tr>
<tr>
<td>Lynwood</td>
<td>1,185</td>
<td>220</td>
<td>4</td>
<td>216</td>
<td>98.1%</td>
<td>31.9%</td>
</tr>
<tr>
<td></td>
<td>5,215</td>
<td>693</td>
<td>16</td>
<td>677</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Students were asked to complete the confidential seven page questionnaire within class time, which ensured their answers were without direct parental influence. This was considered an important element of the survey because it enabled students to reply candidly to questions that related to their parents’ influence on their drinking behaviours. This also removed the possibility of parents vetting or influencing some of their answers which may have occurred if they had taken the questionnaires home to complete.

Ethics approval for the content and distribution of the questionnaire was 100
gained from the Ethics Committee at the University of Western Australia. Notification of the subject matter and a copy of the questionnaire were provided to the schools. Permission to conduct the survey was then gained from the school prior to the distribution of the questionnaires. The teachers were given a letter to distribute to parents advising them of the survey, and giving them the option of withdrawing their child. Sixteen students declined to participate.

4.5 Statistical methods

In order to test the hypotheses and the fit of the conceptual models the survey data was statistically tested using a range of techniques that varied according to the hypothesis. For hypotheses that required analysis of associations, regression analysis was used including non-parametric testing with chi-square. For hypotheses that required comparison of relationships and measurement between variables, structural equation modelling was used (Hair et al. 1998).

4.5.1 Descriptive statistics

The initial analysis began with an examination of the central tendency, dispersion, skew and kurtosis for the data using SPSS. These were considered appropriate to gain an overall summary of the data set. As the data set contained categorical variables: nominal variables (such as gender), ordinal variables (such as importance of brand choice), and interval variables (such as age) it was considered appropriate to initially present the data as descriptive statistics. A combination of percentages, tables, and graphs were used to describe and summarise the raw data.
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4.5.2 Regression analysis

As a method of testing the dependence of a response variable on one or more predictors, regression analysis was used (Weisberg 2005). This method of analysis was used to test the individual hypotheses against the constants; alcohol consumption (which was measured as recent consumption and volume consumption), and brand choice. Multiple regression using stepwise estimation was also used. This method starts by selecting the best predictor of the dependent variable and additional independent variables are then selected according to their incremental value in explaining the regression model (Hair et al.1998). The correlations and regressions were measured using several indicators, including estimates of parameters, standard error and significance.

4.5.3 Structural equation modelling (SEM)

For the purposes of data analysis, which examined the relationship between variables such as the proposed conceptual models of adolescent alcohol consumption and adolescent alcohol brand choice, SEM was used with the software package Amos (Arbuckle 2006). Exploratory factor analysis (EFA) using SPSS was used to examine the correlations amongst the measures under consideration (Holmes-Smith 2011). Following the EFA, a two-step approach was used with confirmatory factor analysis (CFA), firstly validating the measurement model, and secondly, fitting the structural model through path analysis with latent variables. By using this approach the researcher extended the traditional multivariate statistical analyses by accounting for measurement errors that are inherent in the measures of
constructs. In SEM, relationships between variables are estimated after accounting for measurement error (Cunningham 2010). SEM also provides tests of goodness-of-fit for the hypothesized theoretical models to the sample data (Bollen 1989).
5.1 Data cleaning
The first step in the analysis of the data was to clean the data set of 677 surveys by removing responses that could not be used due to a lack of data. For example, seven respondents completed only the first page and did not answer the remainder of the questionnaire. These responses were removed from the sample, leaving a total sample size of 670 (359 males and 331 females) for the analysis.

5.2 Missing data
Due to the nature of the questionnaire, which was completed by both drinkers and non-drinkers, there were sections that included missing data. For non-drinkers, several sections were not required to be completed as they related to alcohol consumption. Data were therefore not considered missing if they related to non-drinkers. A test of the missing data for the total data set using the Missing Completely at Random (MCAR) test produced a significant result (p<.001) which showed the data were missing at random. Six cases that had 40% or more missing responses, these were not used for SEM analysis. Among all declared drinkers a pattern emerged revealing that participants (n=73) who completed the whole questionnaire without any missing data, drank on average substantially more alcohol. These respondents drank 8.5 standard drinks within the previous two weeks.
compared to the average alcohol consumption for the whole survey of 3.2 standard drinks within the previous two weeks. This may indicate that the heavier drinkers were more interested in the topic and were therefore more inclined to complete the questionnaire.

The last question of the survey in relation to brand choice (to be completed by drinkers) was not completed by some respondents. This may have been due to time constraints in completing the survey, but the remainder of the data completed by these respondents was still considered useful for analysis. For the respondents who completed this question, (n=437) there were some cases of individual missing data. Since the question was analysed using SEM in Amos, any individual missing data would not produce an effective result using this analysis technique. To overcome this, Expectation-Maximization algorithm (EM) was used as the method of imputing values for missing data. EM is an iterative method which assumes an underlying normal distribution for the data and uses other variables relevant to the construct in a two-step process to predict the values of the missing variables (Cunningham 2010).

5.3 Assessment of statistical fit

Following data cleaning and analysis of missing data, a descriptive overview of the data was conducted. This was followed by analysis of the individual hypotheses using descriptive analysis and regression analysis. The conceptual models of adolescent alcohol consumption and adolescent alcohol brand choice were then analysed using SPSS and Amos. Both models were tested independently and began with exploratory factor
analysis (EFA) of the data in SPSS. EFA was important in determining the factor structure and Cronbach’s alpha was used to measure the reliability of the constructs before confirmatory factor analysis (CFA). Values of .6 to .7 for Cronbach’s alpha were deemed the lower level of acceptability (Hair et al. 1998). CFA was conducted in Amos to test unidimensionality for the latent constructs and to confirm whether the theoretical factor structure could be supported (Holmes-Smith 2011). Both EFA and CFA were used as data reduction techniques wherein the aim was to reduce a larger number of interrelated measured variables to a smaller number of underlying factors (Holmes-Smith 2011). Following confirmation of the one-factor models, they were then tested in full measurement models against measures of: volume of alcohol consumed, recent alcohol consumption, and choice of the five most popular alcohol brands.

An important function in the use of SEM was the testing of fit between the data and the proposed model. By examining the significance of estimated coefficients, calculated t values and standard errors for each co-efficient, the researcher carried out a test for statistical significance (Hair et al. 1998). Normally when successful parameter estimation has been achieved, a model can be assessed for model fit by using the Bollen-Stine bootstrap p for non-normal data (Enders 2005) and the p value of the normal chi-square \( \chi^2 \) test. Both methods were used in the assessment of the models for this study.

The validation of the latent constructs in the SEM models used convergent and discriminant validity (Hair et al. 1998). Convergent validity assures factors converge or share a high degree of variance in common and can be
assessed by factor loadings, average variance extracted (AVE) and construct reliability (CR) (equation below, Hair et al. 1998). AVE greater than .5 and CR greater than .6 was suggested as an acceptable level by Hair and colleagues (1998). Factor loadings greater than .5 suggests a good unidimensionality (Anderson & Gerbing 1991).

\[
AVE = \frac{\sum_{i=1}^{n} Li^2}{n} \quad \text{and} \quad CR = \frac{(\sum_{i=1}^{n} Li)^2}{(\sum_{i=1}^{n} Li)^2 + (\sum_{i=1}^{n} ei)}
\]

\( Li \) is the standardized factor loading  
\( i \) is the number of factor items  
\( n \) is the total number of factor items  
\( ei \) is the number \( i \) factor item’s error variance term

The researcher tested discriminant validity, or the degree a latent variable is distinguished from other latent variables, using the Fornell and Larker (1981) method. Discriminant validity is achieved when a latent variable can explain a greater variance in the observed variables to which it is associated, other unmeasured influences, measurement error, or constructs within the conceptual model (Farrell & Rudd 2009). If discriminant validity is not achieved, then the validity of the individual indicators and of the construct can be debatable (Farrell & Rudd 2009; Fornell & Larker 1981). The measurement of the AVE scores greater than the squares of correlations between them indicates that the items compared are different from each other and are therefore measuring theoretically different concepts.

Fit indices were used to evaluate the fit of the proposed model to the sample data. Two absolute fit indices and three incremental fit indices were used and reported. The two absolute fit indices used were: the root mean square error of approximation (RMSEA) and the goodness-of-fit index (GFI). RMSEA specifically estimates the goodness-of-fit if the model was
estimated in the population, not just in the sample drawn for estimation, with values from .05 to .08 considered acceptable (Hair et al. 1998). GFI is used to represent the overall degree of fit, but is not adjusted for the degrees of freedom and is a non-statistical measure with values ranging from 0 (poor fit) to 1.0 (perfect fit) (Hair et al. 1998).

The three incremental fit indices used were: the normed fit index (NFI), the comparative fit index (CFI), and the adjusted goodness of fit index (AGFI). These indices measure the proposed model to a baseline model, or a null model with uncorrelated variables (Hu & Bentler 1998). The normed fit index (NFI) compares the lack of fit of the proposed model to the lack of fit of an independent model using $\chi^2$. The value of the index estimates the degree of improvement per degree of freedom of the proposed model, with a recommended value of .90 or greater (Hair et al. 1998). The comparative fit index (CFI) represents a comparison fit between the proposed model and a null or independence model and is appropriate when a smaller sample size is tested. This index has a range of 0 to 1 with values greater than 0.95 considered a reasonable fit (Hair et al. 1998). The adjusted goodness of fit index (AGFI) is an extension of the GFI index and is adjusted by the degrees of freedom of the proposed model to the null model (Hair et al. 1998). The acceptable level is .90 or greater.

Each of the model fit indices described above has particular applications; for example, GIF is sensitive to sample size (Rigdon 1995) and RMSEA is valuable in providing information on the precision of the fit estimate. Consequently, a range of methods were used to assess the data to the model
fit. The fit statistics reported in this study include: chi-square $\chi^2$, probability $p$, Bollen-Stine bootstrap $p$, RMSEA, GFI, NFI, CFI and AGFI.

5.4 Descriptive overview of the data

A descriptive review of the data set revealed that the average age of the respondents was 14.7 years, ranging in age from 13 to 17 years (Table 5).

<table>
<thead>
<tr>
<th>Age of respondent</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Cumulative percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>25</td>
<td>3.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>14</td>
<td>251</td>
<td>37.5%</td>
<td>41.2%</td>
</tr>
<tr>
<td>15</td>
<td>318</td>
<td>47.5%</td>
<td>88.7%</td>
</tr>
<tr>
<td>16</td>
<td>61</td>
<td>9.1%</td>
<td>97.8%</td>
</tr>
<tr>
<td>17</td>
<td>15</td>
<td>2.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>670</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Of the total 670 respondents, 146 (22%) reported that they had never tried alcohol (at least one standard drink); and 524 (78%) of the sample reported that they had tried alcohol. A similar percentage of drinkers and non-drinkers within the same age range were reflected in data collected in the Profile of Young Australians 2003 report (Pitman et al. 2003) and the Australian Secondary School Students’ Use of Alcohol in 2005 report (White & Hayman 2006).
A summary of the data for drinkers revealed:

**Table 6: Data summary for drinkers**

<table>
<thead>
<tr>
<th>Respondents who drank alcohol</th>
<th>All</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age when they first drank</td>
<td>12.3 years</td>
<td>11.9 years</td>
<td>12.6 years</td>
</tr>
<tr>
<td>Average number of drinks within the previous 2 weeks</td>
<td>3.6 drinks</td>
<td>3.7 drinks</td>
<td>3.2 drinks</td>
</tr>
</tbody>
</table>

Of the total of 524 respondents who reported having tried at least one glass of alcohol, 475 then nominated the type of alcohol they drank most often. The variance of 49 represents those respondents who had tried alcohol, but were not regular drinkers at the time of the survey. Additional information on the type of alcohol drunk indicated:

- Pre-mixed spirit was drunk by 32% more females than males.
- Beer was drunk by 26% more males than females.
- Spirit was drunk by 10% more males than females.
- Only 5% of respondents drank wine most often (Table 7).
- Of the top five alcoholic brands reported drunk most often, the top three were pre-mixed spirits. Of all brands nominated, Vodka Cruiser was the most popular; with 19% of drinkers selecting Vodka Cruiser as the brand they drank most often (Table 8). Of Vodka Cruiser drinkers, 85% were female.
Table 7: Type of alcohol drunk most often

<table>
<thead>
<tr>
<th>Type of alcohol drunk most often</th>
<th>All respondents who drank alcohol</th>
<th>Males who drank alcohol</th>
<th>Females who drank alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-mixed</td>
<td>266</td>
<td>98</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td>56%</td>
<td>40%</td>
<td>72%</td>
</tr>
<tr>
<td>Beer</td>
<td>119</td>
<td>92</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>38%</td>
<td>12%</td>
</tr>
<tr>
<td>Spirits</td>
<td>66</td>
<td>45</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>14%</td>
<td>19%</td>
<td>9%</td>
</tr>
<tr>
<td>Wine</td>
<td>24</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>475</td>
<td>243</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 8: Top five brands drunk most often

<table>
<thead>
<tr>
<th>Brand drunk most often</th>
<th>Type of alcohol</th>
<th>Number of respondents</th>
<th>Brand share of total drinkers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vodka Cruiser</td>
<td>Pre-mixed</td>
<td>84</td>
<td>19%</td>
</tr>
<tr>
<td>Smirnoff Ice</td>
<td>Pre-mixed</td>
<td>56</td>
<td>13%</td>
</tr>
<tr>
<td>Jim Beam &amp; Cola</td>
<td>Pre-mixed</td>
<td>39</td>
<td>9%</td>
</tr>
<tr>
<td>Carlton Mid</td>
<td>Beer</td>
<td>36</td>
<td>8%</td>
</tr>
<tr>
<td>Tooheys Extra Dry</td>
<td>Beer</td>
<td>27</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>242</td>
<td>55%</td>
</tr>
</tbody>
</table>

5.5 Hypotheses analysis

The individual hypotheses were tested using descriptive analysis, simple linear regression, and multiple regression analysis. When multiple regressions were conducted, Pearson correlations between independent and dependent variables were checked before the multiple regressions were run. The hypotheses relating to alcohol consumption were measured against the volume of alcohol consumed and recent alcohol consumption, to give a broader insight into drinking behaviours. The hypotheses relating to brand choice were measured against individual brand choice and brand choice of the top five brands. Following individual analysis of the hypotheses, the researcher then tested the hypotheses in the two conceptual models using SEM.
5.5.1 Peer influence hypotheses

**H1:** The number of different brands of beer, pre-mix and spirit that friends drink will have a positive association with alcohol consumption

**H2:** The number of different occasions when drinking takes place with friends will have a positive association with alcohol consumption

In the first hypothesis H1, friends’ drinking experience was tested by the number of different beer, pre-mix and spirit brands that friend’s drank. The relationship was tested using linear regression for both volume consumption and recent consumption. The regression for volume consumption and drinking experience provided appropriate indicators (F=18.799, \( p<.001 \)). However, of the three items, only friends’ beer drinking experience was positively related with the respondents alcohol volume consumption (B=.856, \( p<.001 \)). The regression for recent alcohol consumption also provided appropriate indicators (F=5.269, \( p=.022 \)). The results indicated that those respondents’ with friends who drank more pre-mix brands consumed alcohol more recently (B=1.76, \( p=.022 \)) (Appendix B).

In order to test the next hypothesis H2 - the number of different occasions which drinking takes place with friends will have a positive association with alcohol consumption - respondents were asked to select from a list of nine social occasions when they drank with their friends, or alternatively, if they 'never' drank with their friends. The respondents could select as many situations as applicable and also detail other situations not listed. The situations nominated were not weighted or constrained within a particular timeframe. All drinkers were asked to respond to this question; however, 13% (90 respondents) said that they ‘never’ drank with their friends. The
respondents, who never drank with their friends, drank on their own, drank only with their parents or relatives (including brothers and sisters) or drank only with their boyfriend. Of the 371 respondents who reported drinking with their friends, 48% drank with friends at parties (Figure 4).

Figure 4: Drinking occasions with friends

Linear regression was used to test the relationship and it was found that the number of different occasions that the respondent drank with friends was positively related to their recent alcohol consumption. Those respondents who were recent drinkers, reported drinking with friends on more occasions ($B=6.154$, $p<.001$). This regression was significant ($F(1)=15.136$ and $p<.001$) (Appendix B).

A positive relationship between peer influence and alcohol consumption was supported by linear regression for both friends’ drinking experience and the number of different occasions when drinking takes place with friends. The hypotheses were further tested in SEM in the conceptual model of alcohol consumption.
5.5.2 Family influence hypotheses

H3: The younger individuals were when they first consumed alcohol will have a positive association with alcohol consumption

H4: Parental approval of adolescents’ drinking will have a positive association with alcohol consumption

H5: The number of different occasions that drinking takes place with parents will have a positive association with alcohol consumption

H6: Parental knowledge of adolescents’ drinking will be positively associated with alcohol consumption

These four hypotheses proposed positive associations between parental influence and alcohol consumption. To test these hypotheses, 8 of the 31 questions in the survey referred directly or indirectly to parental influence on drinking behaviour and brand choice.

The testing of hypothesis H3 used the self-reported age when respondents first had a standard drink of alcohol as the initial measure. A review of the data showed that the average age when respondents reported having their first drink was 12.3 years. Males reported first drinking on average at a younger age (11.9 years) than females (12.6 years). The age at which alcohol was first consumed was then tested against the amount of alcohol consumed within the last two weeks. Hypothesis H3 was supported with testing in linear regression (F(1)=15.491, \( p<.001 \)) (Appendix B). Furthermore, it was found that the younger respondents were when they reported having their first alcoholic drink, the more alcohol they were likely to have recently consumed (B=-.650, \( p<.001 \)).

A further regression analysis was conducted to determine a possible association between the age at which respondents first drank and a range of
parental influences. Due to the exploratory nature of this analysis the stepwise method was used for linear regression. 'Age when first drank' was used as the dependent variable and eight possible parental influences were used as independent variables. The independent variables included: parents knowledge of drinking, parents approval of drinking, and five drinking situations with parents: drinking at home with meals, at restaurants, at family barbeques, at special events, at parties and other occasions. The first stage of the analysis indicated an association between the age when respondents first drank, and drinking with parents at home with meals ($p=.046$), and drinking with parents at parties ($p=.021$). However, 49% of respondents who drank with their parents reported doing so at special celebrations such as Christmas and birthdays, and 39% of respondents who drank with their parents reported doing so at family barbeques (Figure 6). This would suggest that the light drinkers, or those who were drinking less frequently with their parents, did so only at special celebration rather than drinking on a more regular basis during a meal at home. After applying stepwise analysis, which removed the least significant independent variables, drinking with parents at parties was indicated as associated with the age at which respondents first drank with the significance decreasing marginally from $p=.021$ to $p=.043$ (Appendix C).

The testing of hypothesis H4 - that parental approval of adolescents’ drinking will have a positive association with alcohol consumption - began by testing an association between reported parental approval of drinking and the number of standard drinks consumed during the previous two weeks. In order to firstly establish the rating of parental approval of drinking,
respondents were asked if their parents knew they drank, and if so to rate
their perceived approval of their drinking as either: ‘approve’, ‘slightly
approve’, ‘neither approve nor disapprove’, ‘slightly disapprove’, and
‘disapprove’.

The results indicated that 57% of respondents rated their parents’ approval
as either ‘approve’ or ‘slightly approve’. With the addition of those parents
who ‘neither approved nor disapproved’, this brought the figure up to 89%.
This level of approval was supported by 89% of respondents who drank,
also reporting that they drank with their parents at a range of social and
family events. Analysis of recent alcohol consumption revealed that 60% of
drinkers had consumed alcohol during the previous two weeks. Of these
drinkers, 41% had drunk between 1 to 10 standard drinks. The average
number of drinks consumed within the previous two weeks was 3.6 standard
drinks. Testing in linear regression found that parental approval H4 had a
significant and positive relationship with the amount of alcohol consumed
\((F(1)=4.340, B=.772, p=.038)\) (Appendix B). It was indicated that the higher
the level of reported parental approval of drinking, the greater amount of
alcohol consumed.

A further regression analysis was conducted to determine a possible
association between the volume of alcohol consumed by adolescents in the
past two weeks and a range of parental influences. Due to the exploratory
nature of this analysis the stepwise method was used for linear regression.
The reported number of standard drinks consumed in the past two weeks
was used as the dependent variable and eight independent variables were
analysed. These independent variables included parents’ knowledge of drinking, parents’ approval of drinking, and five drinking situations with parents: drinking at home with meals, at restaurants, at family barbecues, at special events, at parties and other occasions. The first stage of the analysis indicated a significant association between ‘drinks in the past two weeks’ and ‘parent’s approval of drinking’ (R= -.123, p=.012), ‘drink with parents during meals at home’ (R=.165, p=.001), ‘drink with parents at family barbeques’ (R=.104, p=.028) and ‘drink with parents on other occasions’ (R=.090, p=.048). After applying a stepwise analysis to remove the least significant variables, ‘drink with parents during meals at home’ was indicated as associated with the volume of alcohol consumed during the past two weeks, with the significance marginally decreased from p=.001 to p=.002 (Appendix C). It can be assumed that if respondents drink with their parents during meals at home, then the parents have approved the alcohol consumption.

The question that related to various drinking situations with parents, was the basis of the next hypothesis H5, and gave the respondents a choice of six possible situations: 'never drink with parents', 'with meals at home', 'at a restaurant', 'at a family party or barbeque', 'special occasions such as Christmas and birthdays', and 'other' (Figure 5). If respondents drank with parents, they could choose one or more answers from the list.
The number of occasions that respondents drank with their parents H5 was found to be positively related to recent alcohol consumption ($F(1)=11.860$, $B=9.828$, $p=.001$). In addition, the number of occasions that drinking takes place with parents was also related to amount of alcohol consumption ($F(1)=5.133$, $B=.899$, $p=.024$) (Appendix B). Therefore, the more occasions that drinking takes place with parents tends to contribute to more recent alcohol consumption and a higher amount of alcohol consumed.

A positive association between parental knowledge of adolescents’ drinking H6 was supported by a positive association with approval of adolescents’ drinking and the volume of alcohol consumed ($F(1)=4.340$, $B=.772$, $p=.038$) (Appendix B). This can also be taken as a measure of knowledge of drinking because it can be assumed that if parents approve of drinking, then they are more likely to be aware of it. As further support, 67% of drinkers reported that their parents knew they drank, 14% reported that their parents
didn’t know they drank, and 19% weren’t sure whether they knew. The analysis also found that 28% of respondents reported last drinking with parents, which indicates knowledge of drinking. A positive relationship between parents’ knowledge of drinking and last drinking with parents was also found ($B=-.478, p<.001$).

Further analysis was conducted to test possible parental influence and brand choice. This analysis was conducted to confirm the exclusion of parental influence as a factor for brand choice from the brand choice model. The analysis began by examining the respondents’ brand choice, specifically with the question that asked respondents who drank alcohol to nominate the ‘brand drunk most often’. Their response was taken as synonymous with ‘brand choice’ because this was the brand that they chose to drink most often. This brand was then referred to as ‘brand choice’ in further questions. A distinction was intentionally made between the brand they chose to drink on a regular basis and their ‘favourite brand’, because it was assumed the latter may be one that they aspired to drink but could not afford; therefore ‘favourite brand’ was not referred to in the questionnaire.

Once brand choice was nominated, respondents were asked to rate the level of importance of 13 possible influences on their brand choice, using a five level rating scale: ‘very important’, ‘important’, ‘neither’, ‘unimportant’ and ‘very unimportant’. Of the 13 possible influences on brand choice, the ‘brand parent drinks’ was rated as important or very important by 20% of respondents (Figure 6). Those respondents who considered the brand their parents drank as important represented respondents who also reported
higher levels of drinking with their parents than their friends. The majority of these respondents drank their parents’ choice of alcohol and were mainly wine drinkers and home brew drinkers.

The hypotheses which related to family influence and alcohol consumption were supported by linear regression and were further analysed in SEM. Additionally, an association between family influence and alcohol brand choice could not be supported, and therefore justified the exclusion of this factor from the model of alcohol brand choice.

**5.5.3 Marketing influence hypotheses**

H7a: Recognition of television advertising for select alcoholic brands will have a positive association with alcohol consumption
H7b: Recognition of television advertising for select alcoholic brands will not be associated with alcohol brand choice for those brands

Hypothesis H7a proposed a positive association between television advertising recognition and alcohol consumption. In order to test the hypothesis, the researcher presented all respondents (both drinkers and non-drinkers) with an aided recognition question based on television advertising that had been aired on the three major commercial television stations in Perth during the previous 12 months. The brand and a brief description of the theme for 30 different advertisements for alcoholic products were listed. Respondents were asked to nominate which of the television commercials they recognised. Of the 30 commercials listed, four were not television commercials. One advertisement was a magazine advertisement, and three advertisements were fictitious. These were included to check the validity of the responses (Appendix D). Fifteen of the commercials (50%) were for beer brands; one commercial was for a pre-mixed brand; and the remaining ten commercials were for spirits. The question related to the level of television exposure of these brands over the previous 12 months and the actual commercials that went to air.

There were 21 brands presented in the 26 television commercials listed, of which 7 brands had either 2 or 3 commercials listed. Some commercials featured a specific product; others demonstrated a more general branding approach. For example, the commercial for Johnnie Walker demonstrated a more generic approach to the brand. The commercials for Cougar, Smirnoff and Jim Beam featured a 750ml bottle rather than the pre-mixed version in a can or smaller bottle. These commercials, therefore, provided general brand
recognition without specifically referring to the pre-mixed product. A comparison of drinkers versus non-drinkers and their overall recognition of the select television commercials indicated that drinkers were on average 12% higher in their overall recognition of the television commercials. However, both drinkers and non-drinkers had a similar pattern of recognition for the majority of the commercials, and the top four commercials recognised were the most recently and most frequently aired commercials (Figure 7). Non-drinkers had a high awareness of the television advertising with an average recognition of 63% for the top four commercials. However, the non-drinkers’ level of recognition did not convert to reported alcohol consumption.

![Figure 7: Recognition of television advertising – drinkers / non-drinkers](image-url)
The total recognition for all television commercials was tabulated and the top four commercials with the highest recognition were for beer (Table 9). These data represented the total recognition by all respondents, including non-drinkers and non-beer drinkers, and indicated a total recognition of more than 64% for each of the top four commercials. Of these top four commercials, only three brands featured – Tooheys, XXXX and Carlton (as the first two commercials were for Tooheys Extra Dry). These three brands with the highest recognition were then used to test if specific advertised brands had a possible positive association for drinkers’ versus non-drinkers.

Table 9: Television advertising recognition / top four commercials

<table>
<thead>
<tr>
<th>Commercial no.</th>
<th>Brand</th>
<th>% recognition of total drinkers</th>
<th>% recognition of total non-drinkers</th>
<th>% recognition of total respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 14</td>
<td>Tooheys Extra Dry</td>
<td>79%</td>
<td>71%</td>
<td>77%</td>
</tr>
<tr>
<td>No. 13</td>
<td>Tooheys Extra Dry</td>
<td>73%</td>
<td>66%</td>
<td>72%</td>
</tr>
<tr>
<td>No. 9</td>
<td>XXXX</td>
<td>66%</td>
<td>62%</td>
<td>65%</td>
</tr>
<tr>
<td>No. 11</td>
<td>Carlton Mid</td>
<td>68%</td>
<td>53%</td>
<td>64%</td>
</tr>
</tbody>
</table>

The brand with the highest recognition was Tooheys Extra Dry. The two commercials recognised in the survey for this brand featured quirky themes and dramatic visualization. For example, one commercial showed a tongue hopping out of a young man’s mouth then walking off to find a bottle of Tooheys Extra Dry (Commercial No. 14). The second commercial showed a vacuum cleaner and clothes tumble dryer fighting for possession of a Tooheys Extra Dry bottle in a swimming pool (Commercial No. 13). These two commercials were aired with fairly high frequency during the 12 months prior to the survey. A third commercial for the Tooheys brand featured a different style of beer, Tooheys New (Commercial No. 15).
latter television commercial had a different advertising theme to the previous two commercials and achieved a total recognition of only 41% of the sample and therefore, it was not included in the top four commercials.

For the brand Tooheys, 552 respondents reported having seen at least one of the three commercials, of whom 438 (79%) were drinkers compared to 114 (21%) non-drinkers. In order to test whether this difference was significant, a chi-square was used because the responses were non-parametric. This analysis resulted in a $p$ value of .08, which shows that recognition of at least one of the three Tooheys television commercials was marginally insignificant as to whether the respondents were drinkers or non-drinkers (Table 10).

Using a similar analysis of the XXXX commercial, a cross tabulation indicated that of the 434 respondents who had reported having seen the XXXX commercial, 344 (79%) were drinkers compared to 90 (21%) non-drinkers. Further analysis using chi-square resulted in a $p$ value of .21. Thus there was no significant association between recognition of the XXXX television commercial and whether the respondents were drinkers or non-drinkers (Table 10).

Analysis of the third brand Carlton had a different result to the previous two brands. Of the total of 490 of respondents who reported having seen at least one of the three Carlton commercials, 402 (82%) were drinkers compared to 88 (18%) non-drinkers. This difference was statistically significant with a $p$ value of .001. This result indicates that there was a significant positive association between recognition of the Carlton television commercials and
drinking alcohol (Table 10). The higher recognition could be attributed to
by the inclusion of three Carlton commercials in the selection.

Table 10: Television advertising recognition of at least one of the brand’s commercials

<table>
<thead>
<tr>
<th>Brand</th>
<th>Type of alcohol</th>
<th>Drinkers who recognised TV commercial</th>
<th>Non-drinkers who recognised TV commercial</th>
<th>Significance / p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tooheys</td>
<td>Beer</td>
<td>438</td>
<td>114</td>
<td>No - .08</td>
</tr>
<tr>
<td>XXXX</td>
<td>Beer</td>
<td>344</td>
<td>90</td>
<td>No - .21</td>
</tr>
<tr>
<td>Carlton</td>
<td>Beer</td>
<td>402</td>
<td>88</td>
<td>Yes - .001</td>
</tr>
</tbody>
</table>

A positive association between alcohol consumption and recognition of
specific television advertising could therefore only be established for one of
the top three brands recognised. However, the comparison of drinkers’
versus non-drinkers’ overall recognition of the select television commercials
indicated that drinkers were on average 12% higher in their recognition of
the television commercials and this supported the hypothesis.

Hypothesis H7b proposed that recognition of television advertising for
select alcoholic brands would not have an association with choice for those
brands. In order to test this, the analysis began by establishing the
respondents’ brand choice. A comparison was then made between the
respondents’ brand choice and the brands selected for television advertising
recognition. The total sample size of drinkers who nominated a brand choice
was n=438. A total of 45 brands were nominated and of these only 17
brands were advertised on television. Because 62% of brands nominated for
brand choice were not advertised on television, including the top three
preferred brands, these could not be included in the next part of the analysis.
Vodka Cruiser for example, was the most popular brand selected for brand choice, but was not amongst the brands advertised on television and therefore could not be included in the test of the hypothesis. A summary of the findings comparing brand choice for drinkers, whether the brand was advertised on television, the percentage of drinkers who recognised the television commercial and the percentage of non-drinkers who recognised the television commercial is shown in Table 11. Within the total of 45 brands listed by respondents as their preferred brand choice, there were 3 different categories of alcohol included – beer, pre-mixed and spirits. There were 15 beers, 19 pre-mixed and 11 spirit brands nominated. The fourth category, wine, was not included in brand choice because no actual brands were nominated by respondents. Those respondents who drank wine did not nominate a brand, but differentiated the products by packaging, such as bottle or cask and by wine style, such as champagne or fortified.
### Table 11: Summary of brand choice and television advertising

<table>
<thead>
<tr>
<th>Brand</th>
<th>Brand choice</th>
<th>Type of alcohol</th>
<th>Brand listed as advertised on TV</th>
<th>Commercial No.</th>
<th>TV advertising % recognition</th>
<th>Total % recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td>Drinkers</td>
<td></td>
</tr>
<tr>
<td>Vodka Cruiser</td>
<td>84</td>
<td>19.2%</td>
<td>Pre-mix</td>
<td>No</td>
<td>39.9%</td>
<td>31.5%</td>
</tr>
<tr>
<td>Smirnoff</td>
<td>56</td>
<td>12.8%</td>
<td>Pre-mix</td>
<td>No</td>
<td>67.6%</td>
<td>53.4%</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>39</td>
<td>8.9%</td>
<td>Pre-mix</td>
<td>No</td>
<td>44.8%</td>
<td>34.9%</td>
</tr>
<tr>
<td>Carlton</td>
<td>36</td>
<td>8.2%</td>
<td>Beer</td>
<td>Yes</td>
<td>73.3%</td>
<td>65.8%</td>
</tr>
<tr>
<td>Tooheys</td>
<td>27</td>
<td>6.2%</td>
<td>Beer</td>
<td>Yes</td>
<td>78.6%</td>
<td>71.2%</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>24</td>
<td>5.5%</td>
<td>Spirit</td>
<td>Yes</td>
<td>43.5%</td>
<td>32.9%</td>
</tr>
<tr>
<td>Smirnoff</td>
<td>18</td>
<td>4.1%</td>
<td>Spirit</td>
<td>Yes</td>
<td>27.1%</td>
<td>15.8%</td>
</tr>
<tr>
<td>UDL</td>
<td>16</td>
<td>3.7%</td>
<td>Pre-mix</td>
<td>No</td>
<td>65.8%</td>
<td>44.5%</td>
</tr>
<tr>
<td>Jack Daniel</td>
<td>15</td>
<td>3.4%</td>
<td>Pre-mix</td>
<td>No</td>
<td>30.5%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Crown</td>
<td>9</td>
<td>2.1%</td>
<td>Beer</td>
<td>No</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Woodstock</td>
<td>9</td>
<td>2.1%</td>
<td>Pre-mix</td>
<td>No</td>
<td>62.0%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Corona</td>
<td>6</td>
<td>1.4%</td>
<td>Beer</td>
<td>Yes</td>
<td>56.3%</td>
<td>41.1%</td>
</tr>
<tr>
<td>Bundaberg</td>
<td>6</td>
<td>1.4%</td>
<td>Pre-mix</td>
<td>Yes</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Cougar</td>
<td>10</td>
<td>2.3%</td>
<td>Pre-mix</td>
<td>No</td>
<td>62.0%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Victoria Bitter</td>
<td>10</td>
<td>2.3%</td>
<td>Beer</td>
<td>Yes</td>
<td>56.3%</td>
<td>41.1%</td>
</tr>
<tr>
<td>Crown</td>
<td>9</td>
<td>2.1%</td>
<td>Beer</td>
<td>No</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Corona</td>
<td>6</td>
<td>1.4%</td>
<td>Beer</td>
<td>Yes</td>
<td>56.3%</td>
<td>41.1%</td>
</tr>
<tr>
<td>Bundaberg</td>
<td>6</td>
<td>1.4%</td>
<td>Pre-mix</td>
<td>Yes</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Cougar</td>
<td>6</td>
<td>1.4%</td>
<td>Spirit</td>
<td>Yes</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Bundaberg</td>
<td>5</td>
<td>1.1%</td>
<td>Spirit</td>
<td>Yes</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>Hahn</td>
<td>5</td>
<td>1.1%</td>
<td>Beer</td>
<td>No</td>
<td>68.3%</td>
<td>47.3%</td>
</tr>
<tr>
<td>XXXX</td>
<td>4</td>
<td>9%</td>
<td>Beer</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Jack Daniels</td>
<td>4</td>
<td>9%</td>
<td>Spirit</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Midori</td>
<td>4</td>
<td>9%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Johnnie Walker</td>
<td>3</td>
<td>7%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Mudshaker</td>
<td>3</td>
<td>7%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Bacardi Breezer</td>
<td>3</td>
<td>7%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Emu</td>
<td>3</td>
<td>7%</td>
<td>Beer</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Becks</td>
<td>2</td>
<td>5%</td>
<td>Beer</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Bulleit</td>
<td>2</td>
<td>5%</td>
<td>Spirit</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Canadian Club</td>
<td>2</td>
<td>5%</td>
<td>Spirit</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Archers</td>
<td>2</td>
<td>2%</td>
<td>Pre-mix</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Canadian Club</td>
<td>1</td>
<td>2%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Red Bear</td>
<td>1</td>
<td>2%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Wild Turkey</td>
<td>1</td>
<td>2%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Bulleit</td>
<td>1</td>
<td>2%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Real McCoy</td>
<td>1</td>
<td>2%</td>
<td>Pre-mix</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Coopers</td>
<td>1</td>
<td>2%</td>
<td>Beer</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Tusker</td>
<td>1</td>
<td>2%</td>
<td>Beer</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Carlsberg</td>
<td>1</td>
<td>2%</td>
<td>Beer</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Cascade</td>
<td>1</td>
<td>2%</td>
<td>Beer</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Pure Blond</td>
<td>1</td>
<td>2%</td>
<td>Beer</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Johnny Walker</td>
<td>1</td>
<td>2%</td>
<td>Spirit</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Jagermeister</td>
<td>1</td>
<td>2%</td>
<td>Spirit</td>
<td>No</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Kahlua</td>
<td>1</td>
<td>2%</td>
<td>Spirit</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
<tr>
<td>Baileys</td>
<td>1</td>
<td>2%</td>
<td>Spirit</td>
<td>Yes</td>
<td>55.3%</td>
<td>37.0%</td>
</tr>
</tbody>
</table>

*Indicates bogus commercials included as a control sample
For the next part of the analysis, and for the purposes of more rigorous statistical analysis, only those brands nominated with at least 20 responses (5% of the sample) were analysed. This yielded the following six brands, three of which were advertised on television (Table 12).

**Table 12: Brand choice and advertised brands**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Type of alcohol</th>
<th>Respondents’ brand choice</th>
<th>Advertised on TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vodka Cruiser</td>
<td>Pre-mix</td>
<td>84</td>
<td>No</td>
</tr>
<tr>
<td>Smirnoff</td>
<td>Pre-mix</td>
<td>56</td>
<td>No</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>Pre-mix</td>
<td>39</td>
<td>No</td>
</tr>
<tr>
<td>Carlton</td>
<td>Beer</td>
<td>36</td>
<td>Yes</td>
</tr>
<tr>
<td>Tooheys</td>
<td>Beer</td>
<td>27</td>
<td>Yes</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>Spirit</td>
<td>24</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Of the three beer brands previously analysed (Tooheys, XXXX and Carlton), only Tooheys and Carlton were appropriate for this next step of the analysis. This is because the sample size for XXXX as brand choice was considered too small for statistical analysis (n<20). However, all four respondents who nominated XXXX as their preferred brand choice also recognised the XXXX television commercial.

The data were further refined according to the following criteria:

- The brand was amongst the list of 30 television commercials presented and had been advertised over the previous 12 months, and would therefore be relatively fresh in the respondents’ memory.

- At least 20 respondents chose the brand as their brand choice, which was considered the minimum number necessary to do an appropriate analysis.

- The television commercial for the brand was recognised by at least 20 drinkers, which was considered an appropriate number to indicate that the commercial had been seen and was not randomly selected.
This refinement reduced the final brands for analysis to three which met all criteria: Tooheys, Carlton and Jim Beam. These brands were represented in seven television commercials from the list provided to respondents. The three brands were then analysed using regression analysis, testing the association of whether the respondents had reported recognition of the television commercial, and whether they chose that brand as their brand choice.

An analysis of Tooheys brand choice and respondents having seen at least one of the three Tooheys television commercials indicated that only one of the 27 respondents who chose Tooheys as their brand choice did not recognise the television advertising. In order to test this relationship, the researcher compared the respondents who reported seeing the Tooheys television advertising and who also chose Tooheys as their brand choice, with those who reported seeing the Tooheys television advertising but did not chose Tooheys as their brand choice. A chi-square test was used, which resulted in a $p$ value of .04 indicating there was a significant association between Tooheys as the respondents brand choice and recognition of at least one of the three Tooheys television commercials (Table 13). A binomial test using only Tooheys drinkers who recognised the Tooheys television commercials also supported a positive association, with a $p$ value of .002.

The next brand for analysis, Carlton, had high overall television recognition. However, the recognition for their three individual beer commercials varied significantly. The highest recognition was for Carlton Mid Strength (64%), followed by Carlton Draft (43%) and Carlton Cold (38%). Using a chi-
square test, respondents who reported seeing at least one of the Carlton television commercials and who also chose Carlton as their brand choice were compared to respondents who reported seeing at least one of the Carlton television commercials but did not choose Carlton as their brand choice. The resultant $p$ value of .51 indicated there was no significant association of Carlton as the respondents’ brand choice, and recognising at least one of the three Carlton television commercials (Table 13). Further analysis using a binomial test of only those respondents who recognised the Carlton television commercials and who chose Carlton as their preferred brand choice also indicated that there was no significant association ($p=.58$).

The third brand analysed was Jim Beam spirit. For preferred brand choice, respondents made a distinction between Jim Beam pre-mixed (either in cans or 330ml bottles) and Jim Beam spirit (in 750ml bottles). The list of 30 commercials for recognition included a Jim Beam spirit commercial. However; there was not a commercial specifically featuring Jim Beam pre-mix; therefore, only Jim Beam spirit brand choice was analysed against the Jim Beam commercial. An analysis of Jim Beam spirit brand choice and recognition of the Jim Beam television commercial using a chi-square test resulted in a $p$ value of .50 which indicated there was no significant association (Table 13). Further analysis using a binomial test of only those respondents who recognised the Jim Beam television commercial and who chose Jim Beam spirit as their preferred brand choice found that there was no significant association ($p=.63$).
Table 13: Recognition of television commercials for the respondent’s brand choice

<table>
<thead>
<tr>
<th>Brand</th>
<th>Type of alcohol</th>
<th>Respondents’ brand choice</th>
<th>% of respondents’ brand choice who recognised the TV commercial</th>
<th>Significance / p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tooheys</td>
<td>Beer</td>
<td>27</td>
<td>96%</td>
<td>Yes - .04</td>
</tr>
<tr>
<td>Carlton</td>
<td>Beer</td>
<td>36</td>
<td>78%</td>
<td>No - .51</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>Spirit</td>
<td>24</td>
<td>29%</td>
<td>No - .50</td>
</tr>
</tbody>
</table>

From the analysis of the three relevant brands, there was a significant association for only one of the three brands, which was Tooheys. Therefore, the analysis supported hypothesis H7b - that recognition of television advertising for select alcoholic brands will not be associated with brand choice - and confirmed the exclusion of television advertising recognition from the brand choice model. Television advertising’s influence on alcohol consumption has been well researched; however, the influence on adolescent brand choice is lacking in support. The majority of brands favoured by teenage drinkers were not advertised on television in the 12 months prior to the survey, and the most popular brand, Vodka Cruiser has never been advertised on television. The results of this analysis suggest that although television advertising is influential in alcohol consumption, it is not associated with brand choice.

Advertising's role in providing information on new alcoholic products

The analysis also examined the significance of television advertising in providing information on new alcoholic products. Although this analysis does not directly measure advertising recognition, it examined a possible link between the importance of television advertising and brand awareness.
for new alcoholic products. Respondents were asked to select from a list of six factors and choose the ones that were relevant when sourcing information about new alcoholic products. The list was not ranked in importance; therefore, each factor was considered of equal value and multiple choices could be given. As a source of new product information, television advertising was nominated by 50% of the respondents who completed the question, and recommendations from friends were nominated by 43% of respondents. Although television advertising served as an information source for the respondents’ new product information, a combination of factors contributed to overall product awareness. A positive association could not be established between brand choice and television advertising as an information source. This was supported by the Vodka Cruiser brand; which despite being the most popular brand choice had not been advertised on television during the previous 12 months.

**Advertising recognition and gender bias**

The analysis of television advertising recognition according to gender indicated a gender bias between the type of alcohol preferred and the recognition of advertising for that category. Beer commercials were recognised by a higher percentage of male drinkers than female drinkers, which reflected the higher consumption by males for that category (Table 7). The television commercial for Archers pre-mix was recognised by 10% more female drinkers than male drinkers, which again reflected the higher female consumption for that category. The Archers commercial was also the only commercial recognised by more females than males.
H8a: The number of sales promotions participated in for alcoholic products will have a positive association with alcohol consumption

H8b: The level of importance of sales promotions for alcoholic products will have a positive association with alcohol brand choice

In order to test hypothesis H8a, the analysis began by assessing the level of reported participation in sales promotions for alcoholic products. All respondents (drinkers and non-drinkers) were asked if they had participated in any sales promotions for alcoholic products. If they had, they were then asked to select from a list of seven sales promotions and to nominate the brands that were used in the promotions. Respondents could nominate multiple sales promotions from the following list: vouchers for free drinks, taste tests, competitions for prizes, gifts with purchase, discount vouchers, free entry to events, and others.

Of the total sample size of 670 only 15% (101) of respondents reported having participated in sales promotions. This figure included seven non-drinkers who had participated in sales promotions that didn't require drinking alcohol, such as competitions to win prizes or free entry to events. Of the seven types of sales promotions, taste tests were the most prevalent and were reportedly tried by 11% of respondents who had participated in a sales promotion (Figure 8). Surprisingly, this figure included one non-drinker. Because taste tests usually offer only a small quantity of alcohol, the respondent had not drunk a standard glass of alcohol, and therefore could still be considered a non-drinker.
An association with drinking alcohol and participating in sales promotions for alcoholic products was then analysed. A chi-square test resulted in a $p$ value of .001, which showed a significant association for respondents having ever tried alcohol and having participated in sales promotions. Further analysis of data for drinkers only indicated that reported participation in sales promotions for alcoholic products was positively related with the volume of alcohol consumed. The relationship between the two variables was significant and positive ($F=12.159$, $B=1.266$, $p=.001$) (Appendix B). There was not however, a relationship for recent alcohol consumption. Those respondents who reported a higher participation in sales promotions tended to consume more alcohol but, whether higher consumption triggered more participation in sales promotions was not clear. Hypothesis H8a - that reported participation in sales promotions for ...
alcoholic products will have a positive association with alcohol consumption - was therefore supported by this analysis.

The analysis of hypothesis H8b - that the level of importance of sales promotions will have a positive association with brand choice - began by assessing the level of importance respondents placed on sales promotions. The questionnaire asked respondents who drank alcohol to rate the importance of 13 possible influences in relation to brand choice. Of the 13 possible influences, 'promotional offers' was rated as 'important' or 'very important' by only 16% of respondents (Figure 6). This result was consistent with only 15% of respondents having reportedly participated in alcohol sales promotions. The low participation in sales promotions is also consistent with the respondent's lack of access to alcohol sales promotions and the limited number of promotions involving the key brands chosen by respondents, such as Vodka Cruiser.

The analysis then compared the brand nominated for sales promotions and whether that brand matched the respondents’ brand choice. Of the 94 drinkers who reported having participated in sales promotions, only 12 respondents had a match between their sales promotions brand and their brand choice. This number of responses was considered too small (n<20) for this particular type statistical analysis. Support for the hypothesis H8b was however, established with the SEM analysis in the conceptual model of adolescent alcohol brand choice.
H9a: The number of alcohol branded merchandise items owned or exposed to in the home will have a positive association with alcohol consumption

H9b: The level of importance of alcohol branded merchandise will have a positive association with alcohol brand choice

In order to test hypotheses H9a, the analysis began by assessing the level of exposure to alcohol branded merchandise in the home. All respondents (drinkers and non-drinkers) were asked if they owned or had on display any alcohol branded merchandise. If they did, they were then asked to select from a list of 13 items of merchandise and, if known, nominate the brand of the merchandise. Respondents could nominate multiple types of merchandise. Of the total respondents (both drinkers and non-drinkers), 70% owned or had on display alcoholic branded merchandise, and of those, 57% owned between 1 - 5 items.

Of the 13 types of merchandise from which respondents were asked to select, stubbie holders were the most prevalent choice - selected by 90% of respondents who had alcohol branded merchandise on display at home. The next most popular item was glasses/jugs, which were selected by 77% of respondents. This was followed by bottles on display, which was selected by 65% of respondents (Figure 9). The high ownership of stubbie holders appears to be unique to Australia because previous research conducted in the United States cited t-shirts and other items of clothing as the most popular alcohol branded merchandise owned by teenagers (McClure et al. 2006). In comparison, clothing and hats were selected by only 51% of respondents in this survey.
Ownership of alcohol branded merchandise in the home was significantly associated with whether the respondents had ever tried alcohol, with a t test resulting in \( p < .001 \). This finding is supported by two research studies conducted in the United States that also linked alcohol consumption and ownership of alcohol branded promotional merchandise (Fisher et al. 2007, McClure et al. 2006). A further regression analysis using data for drinkers supported reported ownership of or exposure to alcoholic branded merchandise in the home and a positive association with alcohol consumption (\( F = 14.210, B = .376, p < .001 \)) (Appendix B). The analysis indicated that the more alcohol branded merchandise respondents owned,
the higher the volume of alcohol consumption, which supported the hypothesis.

In order to test hypothesis H9b - that the level of importance of alcohol branded merchandise will have a positive association with alcohol brand choice - an analysis of the brand of merchandise was conducted. Of the respondents (both drinkers and non-drinkers) who owned or had alcohol branded merchandise on display at home, 55% were able to specify the brand of the merchandise. Of these respondents, 13% were non-drinkers, 27% were drinkers who owned merchandise that did not match their brand choice, and 15% were drinkers who owned merchandise that matched their brand choice.

The questionnaire also asked respondents who drank alcohol to rate the importance of 13 possible influences on brand choice. Of the 13 possible influences, 'branded merchandise' was rated as 'important' or 'very important' by 21% of respondents (Figure 6). Regression analysis supported a positive relationship with ownership of alcohol branded merchandise and brand choice ($F=8.136$, $B=.255$, $p=.005$) (Appendix B). This result indicated that the more important branded merchandise was regarded by respondents, the more likely they were to drink the more popular brands. When the five top brands were further analysed in relation to the importance of the influences on brand choice and branded merchandise, 30% of Tooheys Extra Dry drinkers rated banded merchandise as 'important' or 'very important'. However, this was not reflected in the mean number of merchandise items owned by Tooheys drinkers, which was only five items.
Male beer drinkers reported the highest ownership of branded merchandise. For Jim Beam drinkers (both pre-mix and spirit), 37% achieved a match between their brand choice and brand merchandise. For Smirnoff drinkers (both pre-mix and spirit), 19% achieved a match between their brand choice and brand merchandise. However, these figures were based on small sample sizes of only 23 and 14 respondents respectively.

It appeared that the range and availability of merchandise for some brands influenced the ownership of merchandise for those brands. For example, a very limited range of merchandise had been produced for Vodka Cruiser prior to the survey - baseball caps, stubbie holders and key rings – and these items were only available through sales promotions and not for sale. Other brands, such as Jim Beam, Smirnoff and Bundaberg, had extensive ranges of merchandise and gift items that were widely available as sales promotions and for sale.

In total, 72 respondents (drinkers) achieved a match with their merchandise brand and their brand choice. Further analysis using chi-square resulted in a $p$ value of .001. This indicated a positive association between reported ownership of or exposure to select alcoholic branded merchandise in the home and brand choice for that brand. Therefore, hypothesis H9b - that the level of importance of alcohol branded merchandise will have a positive association with alcohol brand choice - was supported by the analysis.
H10a: Price sensitivity for select alcoholic products will be an effect in alcohol consumption

H10b: Price reductions for select alcoholic brands will be an effect in alcohol brand choice

In order to test hypothesis H10a, the researcher examined two possible influences in relation to alcohol pricing: the reduction in the price of the brand drunk most often and reduction in price of a substitute brand. To test the response to a price reduction of the brand they drank most often, respondents were asked to indicate what action they would take if that brand was on special. They were not given a specific $ value for the price reduction and multiple responses could be given. The choices of action were: 'buy and drink more', 'buy and save until needed', 'only buy if I have the money' and 'doesn't influence purchase'. Not all drinkers completed this question, and of those who did 14% responded that they did not purchase alcohol themselves but acquired it by other means. Of those respondents who completed the question, 32% responded that a price reduction would not influence their purchasing behaviour; 22% of responses indicated that they would buy and drink more; 21% indicated that they would buy and save the alcohol for future consumption; and 25% indicated that they would only buy if they had the money available.

To test the influence of a reduction in the price of a substitute brand, respondents were asked to determine the savings level at which they were prepared to brand switch to a cheaper brand. They were given the options of; 'saving of less than $1', 'saving of $1-$2', 'saving of $3-$4', 'saving of $5 or more' and 'no, wouldn't switch brands'. The purpose of this analysis was to determine if the respondent would switch brands when their brand choice
became more expensive in comparison to a similar product. The analysis revealed that brand switching was likely to occur for 34% of respondents, when there was a significant price advantage of more than $5; however, more than half of the respondents (54%) claimed they were brand loyal and would not change brands; and 12% of respondents would switch to the cheaper brand for a saving of less than $5. The analysis indicated that 46% of respondents would react to a price reduction of a substitute brand and would be likely to brand switch.

Regression analysis for hypothesis H10a provided a significant and positive relationship with both the volume of alcohol consumed (F(1)= 42.954, \( p < .001 \)) and recent alcohol consumption (F(10=7.683, \( p = .006 \)) (Appendix B). The analysis found that those respondents who responded more positively to price reductions were the ones who drank more recently (B=6.747, \( p = .006 \)) and who drank a higher volume of alcohol (B=2.117, \( p < .001 \)).

To test hypothesis H10b - that price reductions for select alcoholic brands will be an effect in brand choice - respondents who drank alcohol were asked to rate the importance of 13 possible influences in relation to brand choice, of which 'low price' was rated as 'important' or 'very important' by 47% of respondents (Figure 6). The importance of low price supported the previous finding that 43% of respondents would take action and purchase their brand choice if it was on special. Interestingly, the regression analysis of ‘low price’ and brand choice provided a marginally negative relationship (F(1) = 4.029, \( p = .045 \)). This indicated that those respondents who consider
low price as not as important in brand choice, drank the more popular brands. This was also supported by a comparison of pricing for the top five brands (Appendix F). This comparison found the most popular brand for respondents - Vodka Cruiser, was the highest cost per standard drink and the smallest bottle size - 275ml. This suggests that a lower price was not the most significant factor in the choice of Vodka Cruiser. The price comparison also found that the order of the brands from highest to lowest cost per standard drink, matched the order of the top five brands in terms of popularity.

The hypotheses relating to price were both supported by the analysis: changes in the price of select alcoholic brands will have an effect in both alcohol consumption and brand choice. And a lower price for the brand choice in comparison to substitute brands would encourage purchase. However, a price reduction of a substitute brand would not encourage brand switching for more than half those surveyed. The analysis supported a price elasticity of demand, which is the measure of sensitivity of demand to changes in price (Elliott, Rundle-Thiele & Waller 2012; Pride et al. 2006; Solomon et al. 2011), for alcoholic products consumed by the respondents in the survey.

\( H11: \text{ Word-of-mouth brand recommendations from friends will be positively associated with alcohol brand choice } \)

This hypothesis closely relates to peer influence, but focuses specifically on word-of-mouth from a marketing perspective. The hypothesis proposes a positive association between peer influence in the form of brand recommendations from friends and individual brand choice. As supported
by the literature review, word-of-mouth brand referrals can be generated from the presence of the brand within the social environment (Berger & Schwartz 2011; Sancho, Miguel & Aldás 2011) and the sharing of information about brands between friends (Moore & Moschis 1978; Moschis & Churchill 1978).

In order to begin the analysis the respondent’s brand choice was established and this was then measured against friends’ brand choice. Once brand choice was nominated, respondents were asked to rate the level of importance of 13 possible influences in relation to their brand choice. Of the 13 possible influences in relation to brand choice, ‘the brand their friends drink’ was rated by only 20% of respondents who drank, as ‘important’ or ‘very important’ (Figure 6). In contrast to this, 65% rated ‘who they would be drinking with’ as either ‘important’ or ‘very important’. Although the majority of respondents considered it important that they would be drinking with their friends, they reported that their friends’ alcohol choice was not considered as important.

The next stage of the analysis compared the respondents’ brand choice to the brands that they reported their friends drank, in an attempt to establish a relationship between the two. The questionnaire asked respondents to nominate the type of alcohol and brand they drank most often, then to nominate the type of alcohol and brands that their friends drank. Respondents were also asked to nominate other types of alcohol and other brands that they drank in addition to the brand they drank most often. The question in relation to friends’ brand choices was left up to interpretation by
the respondent because the question did not specify if the friends were best friends or male or female or both. This was possibly a limitation of the research because the respondents were not asked to rate the strength of the friends’ relationship, which may have correlated with the strength of their influence on brand choice.

Non-drinkers were also asked if their friends drank, and if so which brands their friends drank. These questions were included to determine whether the majority of non-drinkers had non-drinking friends, and therefore establish a pattern of social behaviour between drinkers and non-drinkers. The question was also used to determine the most popular alcoholic drink amongst all friends.

The analysis of brand choice and friends’ drinking the same brand also specifically examined the five top brands selected in brand choice. An analysis using chi-square tests indicated that, of the five top brands, three of the five had a $p$ value less than .05. A relationship existed for those three brands, Smirnoff Ice, Jim Beam and Cola and Tooheys Extra Dry, and friends drinking the same brand and the respondents’ brand choice (Table 14).

A further analysis provided a comparison of the respondents drinking a specific brand as their brand choice and the probability of their friends also drinking the same brand. This relationship was confirmed for four of the five top brands (Table 14), indicating that if the respondent drank the brand, more than 70% of their friends also drank the same brand. For Vodka Cruiser, there was a marginally significant association ($p=.08$) between
drinking the brand and friends also drinking the same brand. Vodka Cruiser was the most popular brand choice for 84 respondents, with 69 of their friends also drinking the brand. An additional 127 other drinkers who were not friends also drank Vodka Cruiser, which influenced the association.

*Table 14: Top five brands compared to friends drinking the same brand*

<table>
<thead>
<tr>
<th>Brand drunk most often</th>
<th>Type of alcohol</th>
<th>Number of respondents who drank brand</th>
<th>% of friends who drank brand</th>
<th>Significance / p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vodka Cruiser</td>
<td>Pre-mixed</td>
<td>84</td>
<td>82%</td>
<td>No -.08</td>
</tr>
<tr>
<td>Smirnoff Ice</td>
<td>Pre-mixed</td>
<td>56</td>
<td>77%</td>
<td>Yes -.00</td>
</tr>
<tr>
<td>Jim Beam &amp; Cola</td>
<td>Pre-mixed</td>
<td>39</td>
<td>79%</td>
<td>Yes -.03</td>
</tr>
<tr>
<td>Carlton Mid</td>
<td>Beer</td>
<td>36</td>
<td>36%</td>
<td>No -.67</td>
</tr>
<tr>
<td>Tooheys Extra Dry</td>
<td>Beer</td>
<td>27</td>
<td>70%</td>
<td>Yes -.00</td>
</tr>
</tbody>
</table>

Testing of the hypothesis also examined the relationship between the source of information on alcoholic products and brand choice. The examination of whether respondents who drank alcohol gained information on alcoholic products from friends was considered a relevant part of the referral and influence process associated with word-of-mouth. This process was also considered a possible influence on the establishment of niche markets for new products. In order to test this, seven possible sources of information on new alcoholic products were listed. Respondents could select as many sources as applicable and also detail other sources not listed. The responses were not weighted or constrained within a particular time frame. The majority of respondents selected two or more sources of information, including ‘television advertising’ (selected by 50% of respondents), and ‘recommendations from friends’ (selected by 43% of respondents). These
results indicated that friends were influential in the gaining of new product information (Figure 10).

Figure 10: Source of new alcoholic product information for drinkers

The analysis also considered the influence of the social environment on word-of-mouth (Berger & Schwartz 2011). Where drinking was likely to take place was used to establish a pattern of more recent drinking behaviour. Respondents were asked to nominate with whom they last drank, and 45% reported last drinking with friends. If the respondents last drank with friends, this behaviour was found to have a positive relationship with brand choice (B=.531, \( p=.007 \)) (Appendix B). Previous analysis for hypothesis H1 had determined that respondents who were recent drinkers tended to be the ones who reported drinking with friends on more occasions (B=6.154, \( p<.001 \)) (Appendix B). As the majority of respondents last drank with friends (45%), and this was at parties (48%) (Figure 4), a relationship between the social environment and word-of-mouth brand referrals was further indicated. This relationship was also supported by a positive
relationship for drinking at parties with friends and brand choice ($B=0.392$, $p=0.055$) (Appendix B).

Hypothesis H11 - that word-of-mouth brand recommendations from friends will be positively associated with alcohol brand choice was supported by friends drinking the same brand, recommendations from friends as a source of new product information, and who respondents last drank with.

**H12:** *The availability of select alcoholic brands will be an effect in alcohol brand choice*

The effect of availability of a preferred alcoholic brand was tested in hypothesis H12, specifically to determine if a preferred brand was not readily available, whether the respondent would choose another brand or remain brand loyal. In order to test the hypothesis, respondents were asked what action they would take if the brand of alcohol they drank most often was not available. This question was limited by the fact that not all underage drinkers purchase alcohol for themselves. However, the question specifically asked for respondents’ behaviours in relation to purchases. For those respondents who drank their parent’s alcohol, or drank other people’s alcohol at parties, brand preference was greatly influenced by the alcohol that was available to them. Of the 524 drinkers who completed the questionnaire, 434 answered this question. The 90 missing responses were drinkers who stated they did not purchase alcohol for themselves. This included drinkers who acquired alcohol from their parents, other family members, boyfriends or friends. The impact of availability was measured by how likely respondents were to brand switch if their brand choice was unavailable. Their responses were scored from highest to lowest according
to whether they: ‘wouldn’t drink’, ‘try to get it elsewhere’ or ‘choose another brand’.

The majority (61%) of those who completed the question indicated a ready acceptance to brand switch if the brand they drank most often was not available. They were, therefore, not loyal to their preferred brand if it was not readily available. Of the remainder, 21% of respondents would try to get the brand elsewhere. This response indicated that they were brand loyal because they would actively seek out their brand choice. Another 15% reported that they would not drink if they could not acquire their brand choice, which was also an indication of brand loyalty. The remaining 3% indicated they would take other action, which was not specified.

To further test hypothesis H12, the five top brands were selected and the responses in relation to availability were analysed for each brand (Table 15). Of the five top brands, Carlton Mid was the brand to which respondents were most loyal, with 47% responding that they would either try to get the brand elsewhere or choose not to drink. Tooheys Extra Dry was the brand to which respondents were least loyal, with only 13% responding that they would either try to get the brand elsewhere or choose not to drink.

<table>
<thead>
<tr>
<th>Brand drunk most often</th>
<th>Type of alcohol</th>
<th>Choose another brand</th>
<th>Try to get it elsewhere</th>
<th>Other action</th>
<th>Wouldn’t drink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vodka Cruiser</td>
<td>Pre-mixed</td>
<td>54%</td>
<td>27%</td>
<td>3%</td>
<td>16%</td>
</tr>
<tr>
<td>Smirnoff Ice</td>
<td>Pre-mixed</td>
<td>73%</td>
<td>19%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>Jim Beam &amp; Cola</td>
<td>Pre-mixed</td>
<td>76%</td>
<td>15%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Carlton Mid</td>
<td>Beer</td>
<td>50%</td>
<td>30%</td>
<td>3%</td>
<td>17%</td>
</tr>
<tr>
<td>Tooheys Extra Dry</td>
<td>Beer</td>
<td>87%</td>
<td>4%</td>
<td>0%</td>
<td>9%</td>
</tr>
</tbody>
</table>
The questionnaire also asked respondents who drank alcohol to rate the importance of 13 possible influences in relation to brand choice. Of the 13 possible influences, 'easy availability' was rated as 'important' or 'very important' by 57% of respondents and was amongst the top four choices in importance (Figure 6).

Thus the analysis supported the hypothesis that the availability of select alcoholic brands will be an effect in brand choice. The analyses indicated that respondents would generally choose another brand rather than remain loyal to their brand of choice. Of the top five brands, only one brand (Carlton Mid) was equally divided on this finding, with 50% of respondents choosing another brand and the other 50% reporting that they would either try to get the product elsewhere, take other action, or not drink. The hypothesis was further supported by SEM in the conceptual model of brand choice.

**H15: Taste will be positively associated with alcohol brand choice**

The importance of taste in relation to brand choice was examined in the final hypothesis. In order to test this hypothesis, the questionnaire asked respondents who drank alcohol to rate the importance of 13 possible influences in relation to brand choice, of which ‘good taste’ was rated as 'very important' by 52% of drinkers across the four categories of alcohol consumed: pre-mixed, beer, spirits and wine. When their responses of ‘very important’ and ‘important’ were combined, this lifted the rating of ‘good taste’ to 86% for drinkers of all brands (Figure 6). This result provided an
overall view of the importance of good taste for all drinkers in relation to their brand choice regardless of the type of alcohol they drank.

The next step in the analysis was to examine taste in relation to specific brands. To do this, the top five brands drunk most often - Vodka Cruiser, Smirnoff Ice, Jim Beam & Cola, Carlton Mid and Tooheys Extra Dry - were compared. The analysis indicated that taste was not significant in the comparison of the top five brands, with each brand comparison showing $p>.05$.

In further analysis of each of the top five brands, the researcher refined the criteria for the importance of brand choice into eight influences (from the initial selection of 13): good taste, who they would be drinking with, easy availability, low price, promotional offers, brand friends drink, branded merchandise, and brand parents drink. A calculation of the variance in importance between the eight influences was conducted using a Scheffe post hoc test, with the rating scale of: ‘very important’, ‘important’, ‘neither’, ‘unimportant’ and ‘very unimportant’ and applying a value of 1 to 5 for the ratings (1 being very ‘important’ and 5 being ‘very unimportant’). A mean score was achieved for the eight factors for each of the five top brands, which indicated that for each of the brands, ‘good taste’ was rated highest as the perceived influence that was most important in selecting that brand with a mean score between the five brands of 1.6. Of the top five brands, Vodka Cruiser scored the highest rating for ‘good taste’ in terms of importance for choosing that brand.
A further step in the analysis examined if gender had any significance in the rating of the importance of taste. Earlier analysis of the data indicated a preference for the type of alcohol drunk most often according to gender, with pre-mixed products drunk by 37% of males and 63% of females surveyed and beer drunk by 77% of males and 23% of females surveyed (Table 7). These findings supported the findings of the initial focus group research, in which female respondents reported a preference for the “sweet fruity” taste of pre-mix drinks. Male respondents reported a preference for the “dry refreshing” taste of beers. Although taste perceptions and individual brand taste tests were not conducted as part of this focus group research, there was an indication from previous research that alcoholic product categories have a gender bias (Copeland et al. 2005). When the total responses for all drinkers and how they rate good taste are compared, there is a difference of only .05 in the mean rating of males compared to females. This indicates that the gender of the respondent, and the type of alcohol they drink, are not a significant effect in their rating of taste (Table 16).

Table 16: Gender comparison in relation to the rating of taste

<table>
<thead>
<tr>
<th>Gender of respondent</th>
<th>N</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Std. error mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>213</td>
<td>1.71</td>
<td>.950</td>
<td>.065</td>
</tr>
<tr>
<td>Female</td>
<td>221</td>
<td>1.66</td>
<td>.867</td>
<td>.058</td>
</tr>
</tbody>
</table>

The results of the analysis supported the hypothesis that taste will be positively associated with alcohol brand choice. The analysis of all drinkers, showed little gender variance in relation to the importance of taste. A more specific analysis of individual brands also supported the hypothesis, with the
most popular brand choice, Vodka Cruiser, having the highest rating of taste importance. This result is consistent with previous research which supports an association between a preference for sweet, fruity drinks such as Vodka Cruiser and the unsophisticated palates of underage drinkers (Copland et al. 2005).

Following the analysis of the individual hypotheses, the researcher conducted further testing using SEM in Amos for fit of the hypotheses to the conceptual models of adolescent alcohol consumption and adolescent alcohol brand choice, as outlined in the following section.

5.6 Conceptual model testing in SEM – alcohol consumption

The analysis of the conceptual model of adolescent alcohol consumption (Figure 4) began with analysis in SPSS, including exploratory factor analysis (EFA) and reliability testing using Cronbach’s alpha. EFA was conducted for the three individual latent constructs - peer influence, family influence, and marketing influence - in SPSS before CFA was conducted in Amos. The latent construct relationships were first tested, and then each of the latent constructs was tested against two measures: volume of alcohol consumed and recent alcohol consumption. The model was then tested as a full measurement model.

5.6.1 Peer influence construct testing

The conceptual construct of ‘peer influence’ consisted of two independent variables: 'friends’ drinking experience' and 'drinking occasions with friends'. ‘Friends’ drinking experience’ was measured by the range of each of three different types of alcohol (beer, pre-mix and spirit) which friends
drank. Wine was not included in the analysis because it represented a small sample size. Only 6% of all respondents reported friends drinking wine, and of these all reported friends drinking only one type of wine. ‘Drinking occasions with friends’ was measured by the number of different occasions the respondent drank with their friends. A time period was not specified for drinking occasions. The conceptual construct of ‘peer influence’ was expanded from two to four independent variables, with the inclusion of three types of alcohol drunk by friends. If ‘friends drinking experience’ were treated as a second level latent construct, there would be no freedom to run the CFA. Thus, at the first stage of the analysis, all four items under ‘peer influence’ were put at the same measurement level and the model run in Amos (Figure 11).

Figure 11: Standardised CFA for peer influence

![Diagram of CFA model for peer influence]

Table 17: Reliability and convergent validity – peer influence construct

<table>
<thead>
<tr>
<th>Construct</th>
<th>Factors</th>
<th>EFA</th>
<th>CFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer influence</td>
<td>Beer friends drink</td>
<td>.765</td>
<td>.750</td>
</tr>
<tr>
<td></td>
<td>Pre-mix friends drink</td>
<td>.896</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>Spirit friends drink</td>
<td>.857</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>Drinking occasions with friends</td>
<td>.492</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total variance explained</th>
<th>Cronbach’s α</th>
<th>Average variance explained</th>
<th>Construct reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer influence</td>
<td>59.1%</td>
<td>.750</td>
<td>.50</td>
<td>.49</td>
</tr>
</tbody>
</table>
This latent construct achieved good reliability (Cronbach’s alpha = .750), and explained a reasonable amount of variance (59.1%); however, ‘drinking occasions with friends’ had a relatively low factor loading at .492. In examining the convergent validity, the researcher was able to explain the average variance at an acceptable level (.50), with the construct reliability slightly lower than .50 (Table 17). The model was an acceptable fit to the data ($\chi^2(2) = .178, p = .915$), with the normed $\chi^2$ satisfying the requirement (.178/2) < 3 (Table 18).

**Table 18: Model fit measurement – peer influence**

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>.178</td>
<td>2</td>
<td>.915</td>
<td>.000</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>.999</td>
</tr>
</tbody>
</table>

Although ‘drinking occasions with friends’ had a relatively low parameter shown from the standardised CFA results, this item was not excluded at this stage of the analysis for three reasons: firstly, this item is a strong factor representing peer influence in adolescents drinking (Andrews et al. 2002; Bahr, Hawks & Wang 1993; Gaughan 2006; Kiuru et al. 2010; Reis & Riley 2000); secondly, on testing the deletion, there was a decline in the model fit ($\chi^2(1) = 41.119, p < .001$, RMSEA = .303, GFI = .943, NFI = .921, CFI = .923, AGFI = .660); lastly, once ‘drinking occasions with friends’ was deleted, a further modification indicated the deletion of either ‘beer friends drink’ or ‘spirit friends drink’ and this wasn’t considered advantageous at this point. The model was therefore retained with four independent variables.
5.6.2 *Family influence construct testing*

The conceptual construct of ‘family influence’ consisted of four independent variables: ‘age when first drank alcohol’, ‘parents’ approval of drinking’, ‘drinking occasions with parents’ and ‘parents’ knowledge of drinking’. The ‘age when first drank alcohol’ was measured as the age at which the respondents reported having their first standard drink of alcohol. ‘Parents’ approval of drinking’ was measured by the reported level of approval by parents of the respondent’s drinking. ‘Drinking occasions with parents’ was measured as the number of different occasions which the respondents drank with their parents. A time period was not specified for drinking occasions and this represented the breadth of occasions that the respondents drank with their parents. ‘Parents’ knowledge of drinking’, was measured as the reported parents’ knowledge of the respondents’ drinking.

From the EFA study of the initial model with four independent variables, the Cronbach’s alpha was low at .327, and ‘age when first drank’ had the lowest loading. The deletion of ‘age when first drank’ was considered acceptable, because this is a self-reported estimate of events from what could be several years prior to the research and could be subject to memory and estimation error (Bringham et al. 2010; Johnson, Gerstein & Rasinski 1997). Following the removal of this item, the Cronbach’s alpha score increased to .476, and the total variance explained increased from 41.4% to 52.4% (Figure 12) (Table 19).
Chapter 5 – Data Analysis

Figure 12: Standardised CFA for family influence

![Figure 12: Standardised CFA for family influence](image)

Table 19: Reliability and convergent validity – family influence construct

<table>
<thead>
<tr>
<th>Construct</th>
<th>Factors</th>
<th>EFA</th>
<th>CFA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Factor loadings</td>
<td>Total variance explained</td>
</tr>
<tr>
<td>Family influence</td>
<td>Parents’ approval of drinking</td>
<td>.764</td>
<td>52.4%</td>
</tr>
<tr>
<td></td>
<td>Drinking occasions with parents</td>
<td>.674</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parents’ knowledge of drinking</td>
<td>.730</td>
<td></td>
</tr>
</tbody>
</table>

The AVE explained was slightly low at .28, and the CR was acceptable at .67. The model fit was acceptable with the following indicators; \(\chi^2(1)=4.752, p=.029\) although the \(\chi^2/1\) was >3 (Table 20). As the GFI, NFI, CFI and AGFI were all an appropriate fit; the \(\chi^2\) statistic could be accepted as chi-square statistics can be sensitive to large sample sizes such as 400 plus (Hair et al. 1989).

Table 20: Model fit measurement – family influence

<table>
<thead>
<tr>
<th>(\chi^2)</th>
<th>Degrees of freedom</th>
<th>(p)</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.752</td>
<td>1</td>
<td>.029</td>
<td>.093</td>
<td>.993</td>
<td>.952</td>
<td>.961</td>
<td>.957</td>
</tr>
</tbody>
</table>

Further examination of the data indicated that the regularity with which respondents drank with their parents may have also been a worthy inclusion to support the variety of occasions drinking took place with parents.
However, the regularity of drinking with parents was not included in the questionnaire. The questionnaire included who the respondent last drank with (and this may have been their parents) but not how often they drank with their parents.

### 5.6.3 Marketing influence construct testing

The conceptual construct of ‘marketing influence’ consisted of four independent variables: ‘television advertising recognition’, ‘participation in sales promotions’, ‘ownership of merchandise’, and ‘price sensitivity’. ‘Television advertising recognition’ was measured by the total number of television commercials for alcoholic products which were recognised by the respondent. ‘Participation in sales promotions’ was measured by the total number of sales promotions for alcoholic products the respondent had participated in, and ‘ownership of merchandise’ was measured by the total number of alcohol branded merchandise items reportedly owned or on display at the respondent's home.

For ‘price sensitivity’ the data required transformation from categorical variable format to continuous variable format in order to present the data in a way that could be effectively analysed in Amos. ‘Price sensitivity’ was measured by how strongly price could influence the purchase decision. The question in relation to price in the questionnaire provided a range of possible actions and respondents could choose more than one response. The responses were averaged out and coded to provide scores for least interest to higher interest in buying products on price promotion.
The model with four items for the marketing influence construct was run in Amos ($\chi^2(2) = .211, \ p = .900$) (Figure 13). Although the model showed good fit with the indices (Table 22), the AVE (.22) and CR (.06) were low (Table 21). This result indicated that the model showed low reliability and that some adjustments might be useful.

**Figure 13: Standardised CFA for marketing influence**

![Diagram of Standardised CFA for marketing influence]

**Table 21: Reliability and convergent validity – marketing influence construct (four factors)**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Factors</th>
<th>EFA</th>
<th>CFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing influence</td>
<td>Television advertising recognition</td>
<td>.631</td>
<td>39.7%</td>
</tr>
<tr>
<td></td>
<td>Participation in sales promotions</td>
<td>.453</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ownership of merchandise</td>
<td>.756</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Price sensitivity</td>
<td>.644</td>
<td></td>
</tr>
</tbody>
</table>

**Table 22: Model fit measurement – marketing influence (four factors)**

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>.211</td>
<td>2</td>
<td>.900</td>
<td>.000</td>
<td>1.000</td>
<td>.998</td>
<td>1.000</td>
<td>.999</td>
</tr>
</tbody>
</table>
'Participation in sales promotions’ showed the lowest loading onto the construct however; this item was considered an important inclusion and was supported by several studies which found that adolescents who participated in sales promotions were more likely to consume alcohol (Fisher et al. 2007; Hurtz et al. 2007; Jones & Lynch 2007). However, as a further test to improve reliability, ‘participation in sales promotions’ was deleted from the model to allow further analysis. There was minimal improvement (AVE .28 and CR .04). As a further test to improve the reliability, ‘television advertising recognition’ was also deleted as this factor showed low loading following the removal of ‘participation in sales promotions’. However, this item was also considered an important inclusion and was also supported by several studies which found that television advertising recognition of alcoholic products was related to alcohol consumption (Sancho, Miguel & Aldás 2011; Stacy et al. 2004). With the deletion of ‘television advertising recognition’, the model achieved reasonable reliability (AVE .33 and CR .54). However, with only two factors remaining, ‘ownership of merchandise’ and ‘price sensitivity’, the value of the construct was questionable as it was considered that all four factors were important inclusions and the deletions were only considered to enable further testing.

As the marketing influence construct was now reduced to two items, the measurement properties could not be directly assessed as there were too few degrees of freedom. In order to estimate the loadings, the two items in the marketing influence construct were combined with the items in the family influence construct (Figure 14). The model fit was acceptable, \((\chi^2(4)=14.935, p=.005)\) (Table 23).
Figure 14: Standardised CFA for marketing influence and family influence

![Diagram showing relationships between constructs]

Table 23: Model fit measurement – marketing influence (two factors)

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.935</td>
<td>4</td>
<td>.005</td>
<td>.079</td>
<td>.986</td>
<td>.918</td>
<td>.937</td>
<td>.948</td>
</tr>
</tbody>
</table>

All three constructs; peer influence, family influence and marketing influence were then tested in a full measurement model.

5.6.4 Full model construct testing - alcohol consumption

To test for discriminate validity, the three congeneric one-factor models were then tested in a full measurement model (Figure 15). The model achieved a good fit to the data for all indexes ($\chi^2 (11)=25.769$, $p=.007$, RMSEA=.055, GFI=.984, NFI=.962, CFI=.978, AGFI=.958). The average variance explained achieved .48, which was acceptable as this was only marginally lower than .50.
Discriminant validity of the three latent constructs was assessed by comparing the AVE scores and the squared correlations. As all of the squared correlations were smaller than the AVE scores, the three constructs were therefore different from each other (Table 24).

Table 24: Discriminant validity measures for alcohol consumption full correlated model

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE score</th>
<th>Squared correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer influence</td>
<td>.50</td>
<td>Peer influence .15</td>
</tr>
<tr>
<td>Family influence</td>
<td>.28</td>
<td>Family influence .29</td>
</tr>
<tr>
<td>Marketing influence</td>
<td>.33</td>
<td>Marketing influence .31</td>
</tr>
</tbody>
</table>

The three constructs were then tested for individual relationships between the measures of volume consumption and recent consumption.

5.6.5 Peer influence individual relationship testing

The relationship between peer influence and volume consumption was tested using the four factor latent construct. The model was not a good fit to the data ($\chi^2(5)=68.628$, $p<.001$, RMSEA=.171, GFI=.945, NFI=.894, CFI=.900, AGFI=.834). After deletion of ‘drinking occasions with friends’,
the model was improved ($\chi^2(2)=14.985$, $p=.001$, RMSEA=.122, GFI=.984, NFI=.973, CFI=.976, AGFI=.919). However, ‘drinking occasions with friends’ was considered an important factor and further analysis was conducted to determine if peer influence was better indicated in more recent alcohol consumption rather than volume consumed.

The relationship between peer influence and recent consumption was then tested. The model was a good fit to the data ($\chi^2(5)=10.908$, $p=.053$) (Figure 16) with all of the indicators showing good model fit (Table 25), and all paths were significant (Appendix E). Thus, peer influence was shown to have a positive relationship with recent alcohol consumption rather than volume consumed. The more occasions respondents drank with their friends and the more their friends’ drank a variety of alcohol brands, the higher the likelihood of recent drinking. However, ‘drinking occasions with friends’ still showed a relatively lower influence (β=.336).

Figure 16: Standardised CFA for peer influence / recent consumption
Table 25: Model fit measurement – peer influence / recent consumption

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>p</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.908</td>
<td>5</td>
<td>.053</td>
<td>.052</td>
<td>.990</td>
<td>.981</td>
<td>.990</td>
<td>.971</td>
</tr>
</tbody>
</table>

5.6.6 Family influence individual relationship testing

The relationship between family influence and volume consumption was tested using the four factor latent construct. The model was a good fit to the data ($\chi^2(2)=3.276$, $p=.194$) (Figure 17) (Table 26). All the paths were significant and family influence was positively related with alcohol volume consumed (Appendix E). The model fit to the data indicated that those respondents whose family supported drinking tended to consume more alcohol. Family support for drinking was indicated by parental approved of drinking, the number of different occasions which respondents drank with their parents, and parents’ knowledge that the respondent drank.

Figure 17: Standardised CFA for family influence / volume consumption

Table 26: Model fit measurement – family influence / volume consumption

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>p</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.276</td>
<td>2</td>
<td>.194</td>
<td>.038</td>
<td>.996</td>
<td>.969</td>
<td>.987</td>
<td>.982</td>
</tr>
</tbody>
</table>
The relationship between peer influence and recent consumption was then tested using the same latent construct. The model fit to the data was also good ($\chi^2(2)=5.891$, $p=.053$) (Figure 18). The indicators showed a good model fit, (Table 27) and all the paths were significant (Appendix E). Therefore, a positive relationship between family influence and recent drinking was also found.

*Figure 18: Standardised CFA for family influence / recent consumption*

![Diagram showing the relationship between family influence and recent consumption]

*Table 27: Model fit measurement – family influence / recent consumption*

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.891</td>
<td>2</td>
<td>.053</td>
<td>.067</td>
<td>.993</td>
<td>.947</td>
<td>.963</td>
<td>.966</td>
</tr>
</tbody>
</table>

These results indicate that family influence is positively related to both the amount of alcohol consumed and recent consumption of alcohol for the data set.

5.6.7 Marketing influence individual relationship testing

As there were only two factors for marketing influence, there would be no freedom to estimate the model fit if only one outcome was tested. Therefore, volume consumption and recent consumption were tested together (Figure 19). The model fit was acceptable, ($\chi^2(2)=3.888$, $p=.143$) (Table 28).
Figure 19: Standardised CFA for marketing influence / volume and recent consumption

Table 28: Model fit measurement – marketing influence / volume and recent consumption

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.888</td>
<td>2</td>
<td>.143</td>
<td>.047</td>
<td>.996</td>
<td>.962</td>
<td>.980</td>
<td>.978</td>
</tr>
</tbody>
</table>

These results indicate that marketing influence is positively related to both the amount of alcohol consumed and recent consumption of alcohol for the data set. However, the model with only two factors was not considered a strong indicator of marketing influence and problems with the measurement scales may explain this.

5.6.8 Full measurement model testing - alcohol consumption

The three correlated constructs were then tested against the measures of recent consumption and volume consumption (Figure20). The regression weights are presented in Appendix E. Although the indices indicated a reasonable fit to the model, (Table 29) only marketing influence was significant with volume consumption and marginally significant with recent consumption. This indicated that although the individual models were an
appropriate fit to the data, that they were not an appropriate fit as a correlated model for both volume consumption and recent alcohol consumption. This could be explained by measurement scale anomalies for the factors. However, the overall analysis did present three individual models for peer, family and marketing influence, with the peer and family influence models presenting a good fit to the data.

*Figure 20: Full measurement model for alcohol consumption*

![Diagram of measurement model](image)

**Table 29: Model fit measurement – alcohol consumption full correlated model**

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55.371</td>
<td>20</td>
<td>.000</td>
<td>.064</td>
<td>.973</td>
<td>.929</td>
<td>.952</td>
<td>.940</td>
</tr>
</tbody>
</table>

5.7 Conceptual model testing in SEM – alcohol brand choice

The conceptual model of adolescent alcohol brand choice was used for the basis of this analysis (Figure 5). The model was initially tested using EFA in
SPSS before CFA was conducted in Amos. The latent construct relationships were tested then each of the latent constructs was tested against the measure of brand choice. The model was then tested as a full measurement model. The proposed model was used to design the final question of the survey which asked respondents who drank alcohol to indicate on a five point Likert scale, the level of importance of 13 possible influences in relation to alcohol brand choice. Brand choice was based on the brand the respondent had nominated as the brand they drank most often. All possible influences were not tested in this analysis but were included in the questionnaire in response to the literature review and points raised by respondents during the exploratory research. The possible influences were also included to provide a broader consideration of the topic and to confirm the structure of the proposed model. For example, the exclusion of ‘memorable advertising’ from the EFA was consistent with the exploratory research where respondents said that advertising was important in gaining information on alcohol but, was not significant in their brand choice. The data set of all drinkers (n=475) was cleaned to remove responses to the brand choice question with missing data of more than three items. Any other responses with one or two missing items were adjusted using EM in SPSS. The final data set for analysis was n=437.

The analysis began with EFA of the data in SPSS using the principal component method and varimax rotation with a loading threshold at .4. Following a review of the data, and in support of the proposed model, seven possible influences were selected for EFA. The analysis provided two Eigen values greater than one which indicated a clear two factor pattern. Total
variance explained was 62.3%, and all factor loadings were greater than .70. Using Cronbach’s alpha, the reliability of component one was high at .825 and the reliability of component two was acceptable at .616. Each item in the individual components corresponded reasonably well to the meaning of the factor. Therefore, after EFA, two potential latent constructs were found, which reasonably represented ‘promotional marketing’ and ‘product attributes’. An interesting inclusion in the first component was brand parent drinks. This was included in the EFA to test if parents had an influence on word-of-mouth marketing.

Table 30: Component matrix structure for adolescent brand choice

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good taste</td>
<td>.736</td>
<td></td>
</tr>
<tr>
<td>Low price</td>
<td>.709</td>
<td></td>
</tr>
<tr>
<td>Easy availability</td>
<td>.771</td>
<td></td>
</tr>
<tr>
<td>Brand friends drink</td>
<td>.782</td>
<td></td>
</tr>
<tr>
<td>Brand parents drink</td>
<td>.820</td>
<td></td>
</tr>
<tr>
<td>Promotional offers</td>
<td>.829</td>
<td></td>
</tr>
<tr>
<td>Brand merchandise</td>
<td>.757</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 3 iterations.

As a further test of the component matrix structure, the data set (n=437) was divided at random into a sub sets of 280 and 157 for further analysis. EFA and CFA were conducted on both sub sets which supported the analysis for the full data set. The seven independent variable model was then tested using SEM in Amos and began with one factor congenetic model testing for each of the two constructs.
5.7.1 Promotional marketing construct testing

The conceptual construct of ‘promotional marketing’ consisted of four independent variables; ‘promotional offers’, ‘brand merchandise’, ‘brand parents drink’, and ‘brand friends drink’. The initial test in Amos ($\chi^2(2)=42.562, p<.001$, RMSEA=.216, GFI=.950, NFI=.936, CFI=.939, AGFI=.752) indicated that the model did not fit the data well and a further examination suggested that the removal of the third variable ‘brand parents drink’ would provide a better fit. The removal of the variable ‘brand parents drink’ was considered acceptable as this was a reflection of those respondents who drank the brand of alcohol that was provided by their parents and was not necessarily the brand they would choose for themselves. The inclusion of ‘brand friends’ drink’ was considered an appropriate fit with two other promotional marketing factors as this reflected the influence of word-of-mouth and brand referrals from friends. Subsequent modification of the construct to three independent variables proved a better fit ($\chi^2(1)=6.146, p=.013$) (Figure 21). Although the chi-square and RMSEA were not good indicators of the fit of the model, all other indexes provided a good fit (Table 32). The reliability of the construct was also good with the AVE at .570 and CR at .770.

Figure 21: Standardised CFA for promotional marketing
Table 31: Reliability and convergent validity – promotional marketing construct

<table>
<thead>
<tr>
<th>Construct</th>
<th>Factors</th>
<th>EFA</th>
<th>CFA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor loadings</td>
<td>Total variance explained</td>
<td>Cronbach’s $\alpha$</td>
</tr>
<tr>
<td>Promotional marketing</td>
<td>Promotional offers</td>
<td>.891</td>
<td>69.3%</td>
</tr>
<tr>
<td></td>
<td>Brand merchandise</td>
<td>.837</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brand friends drink</td>
<td>.764</td>
<td></td>
</tr>
</tbody>
</table>

Table 32: Model fit measurement – promotional marketing

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.146</td>
<td>1</td>
<td>.013</td>
<td>.109</td>
<td>.991</td>
<td>.985</td>
<td>.987</td>
<td>.945</td>
</tr>
</tbody>
</table>

5.7.2 Product attributes construct testing

The conceptual construct of ‘product attributes’ consisted of three independent variables: ‘easy availability’, ‘good taste’ and ‘low price’. The initial test in Amos ($\chi^2(1)=5.735$, $p=.017$) indicated that the model was an acceptable fit for the data (Figure 29). Although the AVE was relatively low at .364, the CR was good at .626 (Table 33). As all three items are considered important in explaining influences on alcohol choice and supported by the literature review, the construct was retained for further analysis without modification.

Figure 22: Standardised CFA for product attributes
Table 33: Reliability and convergent validity – product attributes construct

<table>
<thead>
<tr>
<th>Construct</th>
<th>Factors</th>
<th>EFA Factor loadings</th>
<th>Total variance explained</th>
<th>Cronbach’s α</th>
<th>Average variance explained</th>
<th>Construct reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product attributes</td>
<td>Easy availability</td>
<td>.808</td>
<td>.56.7%</td>
<td>.616</td>
<td>.364</td>
<td>.626</td>
</tr>
<tr>
<td>Good taste</td>
<td>.690</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low price</td>
<td>.755</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 34: Model fit measurement – product attributes

<table>
<thead>
<tr>
<th>χ²</th>
<th>Degrees of freedom</th>
<th>p</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.735</td>
<td>1</td>
<td>.017</td>
<td>.104</td>
<td>.991</td>
<td>.963</td>
<td>.969</td>
<td>.948</td>
</tr>
</tbody>
</table>

5.7.3 Full model construct testing – alcohol brand choice

To test for discriminate validity, the two congeneric one-factor models were then tested in a full measurement model. The model achieved a good fit to the data for all indexes (χ²(8)=7.330, p=.501, RMSEA=.000, GFI=.994, NFI=.988, CFI=1.000, AGFI=.985).

Figure 23: Full construct model for alcohol brand choice

Discriminant validity of the two latent constructs was assessed by comparing the AVE scores and squared correlations. As the squared correlation was smaller than the AVE scores, the two constructs are therefore different from each other (Table 35).
Table 35: Discriminant validity measures for brand choice full correlated model

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE score</th>
<th>Squared correlation Promotional marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotional marketing</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td>Product attributes</td>
<td>.36</td>
<td>.25</td>
</tr>
</tbody>
</table>

The two constructs were then tested for individual relationships to the measure of choice.

5.7.4 Promotional marketing individual relationship testing

The relationship between promotional marketing and brand choice was tested. The data used to measure brand choice in this part of the analysis was the top five brands, which represented 55% of the brands selected. The model proved a very good fit to the data ($\chi^2(2)=5.272, p=.072$) (Figure 24) (Table 36). A marginally significant relationship between promotional marketing and choice was established ($\beta=.09, p=.071$). For those respondents who chose the more popular brands, promotional offers were of more importance in their brand choice. As the top three brands are pre-mixed and account for 41% of all brands selected, this indicates that promotional offers are important in the choice of those brands, and the pre-mixed alcohol category.
Chapter 5 – Data Analysis

5.7.5 Product attributes individual relationship testing

The relationship between product attributes and brand choice was then tested. The model achieved a good fit to the data ($\chi^2(2)=4.969, p=.083$) (Figure 25) (Table 37). However, there was a weak and negative relationship between product attributes and choice ($\beta= -.07, p=.236$) (Appendix E). This indicates that for the more popular brands, the factors are of less importance to the respondents.

Table 36: Model fit measurement – promotional marketing / brand choice

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.272</td>
<td>2</td>
<td>.072</td>
<td>.061</td>
<td>.994</td>
<td>.987</td>
<td>.9923</td>
<td>.970</td>
</tr>
</tbody>
</table>

Figure 24: Standardised CFA for promotional marketing and brand choice

Figure 25: Standardised CFA for product attributes and brand choice
Chapter 5 – Data Analysis

Table 37: Model fit measurement – product attributes / brand choice

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.969</td>
<td>2</td>
<td>.083</td>
<td>.058</td>
<td>.994</td>
<td>.969</td>
<td>.981</td>
<td>.972</td>
</tr>
</tbody>
</table>

5.7.6 Full measurement model testing – brand choice

To test for discriminate validity, the two congeneric one-factor models were then tested in a full measurement model. After correcting for non-normality using Bollen-Stein bootstrap the resultant model achieved a good fit to the data ($\chi^2(12)=17.423$, $p=.134$) (Figure 26) with all indexes indicating an appropriate fit (Table 38).

Figure 26: Full measurement model for alcohol brand choice

Table 38: Model fit measurement – brand choice full correlated model

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>Degrees of freedom</th>
<th>$p$</th>
<th>Bollen-Stine bootstrap $p$</th>
<th>RMSEA</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>AGFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.423</td>
<td>17</td>
<td>.134</td>
<td>.225</td>
<td>.032</td>
<td>.989</td>
<td>.973</td>
<td>.991</td>
<td>.974</td>
</tr>
</tbody>
</table>

Promotional marketing had a positive influence on brand choice ($\beta=.18$, $p=.007$) (Appendix E). This indicated that the more importance the
respondents’ placed on brand merchandise, promotional offers and the brand friends drink; the more likely they were to choose the more popular brand choices. Product attributes had a marginal and negative influence on choice ($\beta = -0.17$, $p = 0.026$) (Appendix E). This indicated that respondents’ who drank the more popular brand choices were likely to place less importance on easy availability, low price and good taste.

5.8 Summary of conceptual model testing

The conceptual model of adolescent alcohol consumption supported the literature for peers, family and marketing as influences on adolescent alcohol consumption however, the full correlated model, measured against alcohol volume consumption and recent consumption was not a good fit to the data set. The individual constructs, in particular peer influence and family influence did however, provide an acceptable representation of the data. Peer influence was found to be associated with recent alcohol consumption and family influence was found to be associated with both recent alcohol consumption and the amount of alcohol consumed. The marketing influence construct with four factors provided good indicators of model fit with the indices however; showed low reliability.

The conceptual model of adolescent alcohol brand choice was a newly proposed model which presented two areas of influence on adolescent alcohol brand choice. The model presented clear relationships between the two constructs and the six independent variables with an appropriate fit for the data. The model constructs; promotional marketing and product attributes were distinct from the peer, family and marketing influences
presented in the conceptual model of adolescent alcohol consumption. Notable exclusions from the brand choice model were television advertising recognition and family influences which were consistent with the hypothesized view and the exploratory research. The model supported the hypothesised view that marketing influences would be the main factors associated with brand choice. The analysis also supported the two constructs of the model which made a distinction between promotional marketing and product attributes.

The models reasonably present the different influences which effect adolescent alcohol consumption and adolescent alcohol brand choice and are used to address the hypotheses. With the exception of one hypothesis (H3: the younger individuals were when they first consumed alcohol will have a positive association with alcohol consumption), the hypotheses were supported by the SEM analysis of the models. Hypothesis H3 was; however, supported with testing using linear regression.
### 5.9 Summary of hypotheses testing

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peer influence</strong></td>
<td></td>
</tr>
<tr>
<td><strong>H 1:</strong> The number of different brands of beer, pre-mix and spirit that friends drink will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 2:</strong> The number of different occasions when drinking takes place with friends will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>Family influence</strong></td>
<td></td>
</tr>
<tr>
<td><strong>H 3:</strong> The younger individuals were when they first consumed alcohol will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 4:</strong> Parental approval of adolescents’ drinking will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 5:</strong> The number of different occasions when drinking takes place with parents will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 6:</strong> Parental knowledge of adolescents’ drinking will be positively associated with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>Marketing influence</strong></td>
<td></td>
</tr>
<tr>
<td><strong>H 7a:</strong> Recognition of television advertising for select alcoholic brands will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 7b:</strong> Recognition of television advertising for select alcoholic brands will not be associated with alcohol brand choice for those brands</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 8a:</strong> The number of sales promotions participation in for alcoholic products will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 8b:</strong> The level of importance of sales promotions for alcoholic products will have a positive association with alcohol brand choice</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 9a:</strong> The number of alcohol branded merchandise items owned or exposure to in the home will have a positive association with alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 9b:</strong> The level of importance of alcohol branded merchandise will have a positive association with alcohol brand choice</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 10a:</strong> Price sensitivity for select alcoholic products will be an effect in alcohol consumption</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 10b:</strong> Price reductions for select alcoholic brands will be an effect in alcohol brand choice</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 11:</strong> Word-of-mouth brand recommendations from friends will be positively associated with alcohol brand choice</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 12:</strong> The availability of select alcoholic brands will be an effect in alcohol brand choice</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H 13:</strong> Taste will be positively associated with alcohol brand choice</td>
<td>Supported</td>
</tr>
</tbody>
</table>
Chapter 6

Conclusion and Implications

6.1 Research findings and contribution

In this research project the researcher has produced several findings about adolescent alcohol choices. The conceptual model of adolescent alcohol consumption supported the literature for peers, family and marketing as influences on adolescent alcohol consumption. The individual constructs, in particular peer influence and family influence, provided an acceptable representation of the data. Therefore, the theories of consumer socialisation predicting the influence of parents and peers as influential in adolescent behaviour (Moschis & Churchill 1978) were supported by the results of the analysis. Peer influence was found to be associated with recent alcohol consumption and family influence was found to be associated with both recent alcohol consumption and the amount of alcohol consumed. The marketing influence construct, with four factors, provided good indicators of model fit with the indices; however, showed low reliability. The measurement scales used may have contributed to this outcome.

The researcher has also contributed a model for adolescent alcohol brand choice. Previous research has examined adolescent choices in relation to alcohol consumption, but has stopped short of examining why adolescents make alcohol brand choices. The researcher’s model indicated the importance of promotional marketing and product features as factors in
brand selection. The following points discuss the findings of the research in more detail.

**6.1.1. Peer influence**

This research supported the association between peer influence and alcohol consumption as developed in the theories of self-concept (Richins 1994) and brand association (Escalas & Bettman 2005). The symbolic properties of reference groups and their association with brands (Bearden & Etzel 1982; Escalas & Bettman 2005) were also evident. The research provided a sample of underage drinkers who, for the majority, last drank with their friends at parties and on the weekends and who used television and their friends as referral sources for information on new alcoholic products. The majority of respondents, who drank, also had friends who drank. The link between peer influence as a socialisation agent and adolescent alcohol consumption (Bray et al. 2003; Curran, Stice & Chassin 1997) was apparent from the research.

The researcher also contributed to the literature on peer influence and adolescent alcohol choices by supporting an association between peer influence and alcohol brand choice. Although the influence of peers on alcohol consumption has been widely researched, there is limited research on the influence of peers on adolescent alcohol brand choice within an Australian context. The analysis supported an association between respondents’ brand choice and friends also drinking the same brand. Interestingly, only 20% of respondents who drank alcohol rated the brand their friends drank as important or very important. This could be interpreted
Chapter 6 – Conclusion and Implications

as a reluctance to acknowledge the influence of friends on brand choice by the majority of respondents. Since 64% of respondents rated who they would be drinking with as important or very important and they also reported last drinking with friends, an association between peer influence and brand choice is more likely.

6.1.2. Family influence

This research supported the influence of parents in adolescent alcohol consumption. This influence was indicated in an association between: parental approval of drinking, parental knowledge of drinking, and the number of different occasions when drinking took place with parents, and the amount of alcohol consumed and recent alcohol consumption. The higher the reported parental approval rating, the more likely the respondents were to have drunk during the previous two weeks and the higher the number of drinks consumed. An association was also demonstrated for respondents drinking with parents at home and the age at which respondents first drank.

The influence of parental brand choice on adolescents’ brand choice as developed in the theory of intergenerational brand loyalty (Bravo, Fraj & Martinez 2007; Childers & Rao 1992; Moore, Wilkie & Lutz 2002) was not supported by this research. The theory is often demonstrated in high volume consumer goods. However, for this niche market, and the data set, the theory was not appropriate and the research more likely identifies distinct differences between reference groups according to where products are consumed. For example, the family exerts greater influence on brand
choices of products consumed within the home, and peers exert greater influence on goods consumed outside the home (Childers & Rao 1992). The research also found that consumption of alcohol with parents was not positively associated with brand choice. Respondents who drank predominately with their parents drank their parents’ choice of alcohol, which was supplied by their parents. These respondents were mainly wine and home brew beer drinkers. The majority of respondents (80%) did not consider their parents brand choice to be an important influence in their brand choice and only 11% gained information on new alcoholic products from their parents.

6.1.3. Television advertising recognition of select alcoholic brands

There is an increasing body of literature that supports a positive association between reported exposure to alcohol advertising and drinking intentions of adolescents (Collins et al. 2007; Jones & Magee 2011; Pasch et al. 2007; Smith & Foxcroft 2007; Snyder et al. 2006; Stacy et al. 2004). However, much of this research has been conducted in America and in some cases has combined a broad range of advertising media for examination. In this research project the researcher has contributed to the literature by individually analysing television advertising, sales promotions, brand merchandise and price promotions. The research has also contributed an analysis of the recognition of television advertising for select alcohol brands and alcohol consumption by adolescents in an Australian context.

The researcher contributes further to the literature by demonstrating that for this data set, the recognition of television advertising for select alcohol
brands did not have a positive association with brand choice for those brands. Previous research has focused mainly on exposure to alcohol television advertising and intention to drink and drinking behaviours, whereas an association between television advertising recognition and adolescent alcohol brand choice across a broad range of alcohol types has not been previously examined in an Australian context. The hypothesis for this research in relation to television advertising recognition and alcohol brand choice was based on the findings of the exploratory research, which indicated that there wasn’t an association. The quantitative research supported this hypothesis.

For adolescents, television fulfils a broader social and entertainment purpose and the recognition of television advertising can also be related to the frequency of exposure (Howard 1978) and entertainment value of the specific commercial (Collins et al. 2005; Kelly & Edwards 1998). The broader entertainment value of television was supported by previous research, which suggested humour influenced higher recognition of advertising by adolescents, and that this could be a contributing factor to recognition rather than whether they drank or not, or which brands were drunk (Alcohol Policies Project 1996; Leiber 1996). The entertainment value of alcohol television advertising was also confirmed in the exploratory research, which indicated that the majority of respondents (both drinkers and non-drinkers) enjoyed the entertainment value and humour of alcohol advertising. Respondents specifically cited the Hahn beer television commercial as being entertaining, without necessarily wanting to purchase that brand. This was also evident with the high recognition of the Tooheys
television commercial; however, Tooheys was rated only fifth for brand choice in the survey. The Tooheys television commercial was part of a series of commercials which featured the product coming to life in unusual and humorous situations.

A further indicator from the research that television advertising recognition was not positively associated with specific brand choice was the XXXX television commercial, which ranked second highest in overall recognition, yet only four respondents chose XXXX as their brand choice. The XXXX commercial listed in the survey was one of a series featuring a group of males in different sporting and social situations. The series had been aired for several years and each commercial had a comic twist which developed into a story of friendship amongst the group. The element of humor and high frequency could therefore have contributed to the total recognition level.

Perhaps the most interesting point to emerge from the research in relation to television advertising and brand choice, was that the most popular brand choice, Vodka Cruiser, which was chosen by 19% of drinkers and was also the most popular brand chosen by friends of all drinkers, had not been advertised on television in the 12 months prior to the survey. Independent Distillers, the distributors and marketers of Vodka Cruiser confirmed that since its launch in Australia in 1991 they had never advertised the product on television and had no intention of doing so in the future. Their promotional campaigns had only ever included sales promotions and limited merchandise offers.
6.1.4. Participation in sales promotions for alcoholic products

This research contributed to the knowledge of how adolescents respond to sales promotions for alcoholic products and the influence of these promotions on alcohol consumption. Previous Australian research had grouped price reductions, branded merchandise and other sales promotions (competitions and gifts with purchase), together as more general 'sales promotions' or 'point of sale marketing' (Jones & Smith 2011). In this research project the researcher considered three distinct influences: sales promotions, branded merchandise, and price promotions - as separate influences on alcohol consumption and brand choice. Thus the contribution of this approach was to demonstrate that in isolation each of these three influences have a positive association with brand choice.

The researcher demonstrated that participation in sales promotions for alcoholic products was associated with alcohol consumption by adolescents in the sample. This finding supports previous Australian and American research (Hurtz et al. 2007; Jones & Lynch 2007; Jones & Magee 2011; Jones & Smith 2011). This research project found that drinkers were more likely to have participated in sales promotions possibly due to their familiarity with the product category. Exposure to sales promotions at the point-of-sale may have also contributed to their participation, which also supported previous Australian research (Jones & Smith 2011). However, as all respondents were aged between 13 – 17 years, they were not legally permitted to taste or purchase alcoholic products on licensed premises or at liquor retailers, which restricted their access to in-store promotions. Furthermore online promotions such as competitions and free tickets to
events require participants to enter their date of birth, and are restricted to participants over the age of 18. Therefore it was not surprising that only 15% of respondents reported participating in sales promotions for alcoholic products. Nevertheless, the research provided an insight into alcohol sales promotions and their effect in adolescent alcohol choices. The researcher assumed that because previous research had supported an association with alcohol sales promotions and adolescent alcohol consumption, an association would also be supported for adolescent alcohol brand choice, which proved to be the case.

6.1.5. Exposure to alcohol branded merchandise

This research supported the ownership of, or exposure to alcohol branded merchandise in the home by 70% of respondents, and a positive association with alcohol consumption. This finding reinforces the theory of cognitive dissonance as it applies to the reciprocal relationship between ownership of alcohol branded merchandise and a more favourable attitude towards alcohol (McClure et al. 2009).

In this research the researcher contributed to the literature by extending the analysis to developing an association between ownership and exposure to alcohol branded merchandise and alcohol brand choice. Despite the lack of merchandise available for some of the key brands in the survey (such as Vodka Cruiser), the analysis nonetheless demonstrated a positive association between owning branded merchandise and brand choice for the same brand. Of course branded merchandise can have broader uses in the home, such as mirrors being used for decoration and glasses and stubbie
holders being used for a range of drinks other than the brand displayed. However, it can be inferred that the display or ownership of alcohol branded merchandise reinforces a positive attitude towards the acceptance of alcohol.

6.1.6. Response to price changes

The research supported changes in the price of select alcoholic brands having an effect in alcohol consumption and alcohol brand choice. Previous research has supported price promotions as having an effect in alcohol consumption by adolescents (Jones & Smith 2011; Skov 2009), but there is limited research into price promotions having an effect in alcohol brand choice by adolescents. The analysis for this research indicated that a price reduction in the brand choice would have a reported increase in purchases of that brand, and a price reduction in a substitute brand would encourage reported brand switching to that brand. These results supported price elasticity in demand for alcoholic brands that are drunk by adolescents. Although price elasticity in demand is not surprising in highly competitive consumer markets, several factors emerged from the research that relate directly to the age and disposable income of underage drinkers. These factors provided a unique comparison to adult consumers of similar products. For example, the research showed that 14% of respondents who drank alcohol didn’t purchase alcohol themselves. It was either given to them by parents, other family members, friends, or boyfriends, or they took their parents alcohol without their knowledge. This is in contrast to the adult market for alcoholic products, where the purchaser is more likely to be the consumer.
The research indicated that the purchase of alcohol by adolescents was also closely linked to immediate consumption. The respondents purchased alcohol on their way to a drinking occasion, such as a party. And since the majority of drinkers in the survey were not heavy drinkers (consuming 1 to 10 standard drinks within the previous two weeks), they did not consider the purchase of alcohol as a major financial burden. However, the focus group research indicated that respondents generally funded their alcohol purchases from part-time jobs, and for many, this meant their income was either minimal or irregular so many did not have cash readily available to purchase alcohol when it came on special. As distinct from adult consumers of similar products, these consumers do not have access to credit cards and must rely on what funds they have available. This research contributed to the literature on adolescent alcohol choices by examining the effect of price variations on brand choice.

**6.1.7. Brand availability**

The researcher found that lack of availability for select alcoholic brands would have an effect in brand choice. The analysis indicated that respondents would generally choose another brand rather than remain loyal to their brand of choice. The researcher found that adolescent drinkers acquire alcohol in a number of ways including: being given alcohol, purchasing it themselves, or asking someone to purchase it for them. Many adolescent drinkers are therefore restricted in their alcohol brand choice by how they will acquire it. The literature review suggested that adolescents in Australia had little difficulty in obtaining alcohol in general, and this was
confirmed by the exploratory research. Yet availability was found to influence brand choice rather than whether they chose to drink or not to drink. The issue of availability for adolescents is therefore much broader than physical distribution at a retailer. The researcher’s contribution to the literature on adolescent alcohol choices was the inclusion of availability in the analysis of adolescent brand choice. The effect of availability on adolescent alcohol brand choice across a range of alcohol types had not been previously examined in an Australian context.

6.1.8. Taste of the product

The researcher confirmed that for adolescent drinkers, the taste of the product was the most important attribute for their brand choice. This was supported for the four types of alcohol researched and with minimal gender variance in relation to the importance of taste. A more specific analysis of individual brands also supported the importance of taste, with the most popular brand choice, Vodka Cruiser, having the highest rating of taste importance. This finding is consistent with previous research, which supports an association between a preference for sweet, fruity drinks such as Vodka Cruiser and the unsophisticated palates of underage drinkers (Copland et al. 2005; Jones & Reis 2012). Previous research has examined taste as an influence in alcohol consumption, but there has been limited research on the importance of taste in adolescent alcohol brand choice.

6.1.9. Market dominant brand and word-of-mouth

This research highlighted the strength of a market dominant brand, which supports the theory of double jeopardy (Ehrenberg, Goodhardt & Barwise
1990). This theory suggests that small brands generally attract less loyalty than market dominant brands. This propensity generally builds the strength of the dominant brand and makes market entry difficult for later entrants. This was demonstrated in the research by Vodka Cruiser as the market leading brand within the pre-mix category. The brand has dominated the category partly due to its position as a first entry into the market (Schmalensee 1982). The strength of the brand has also been bolstered by its range of flavour variants and packaging updates plus low calorie and higher alcohol brand extensions. The research supported the strength of Vodka Cruiser as the most popular brand choice for respondents and for their friends; it was also the most popular brand drunk by friends of other drinkers. A unique feature of this example of the double jeopardy theory is that television advertising has not been used to maintain the product’s dominant market position. Since the brand’s launch in 1991, extensive distribution through liquor retailers has been the focus of promotional activity by Independent Distillers, the marketers of the brand. This research indicates that factors contributing to Vodka Cruiser’s success are: product trial through offers of the product from other drinkers, a favourable taste, a well-known highly visible brand, and wide availability. This success has helped the brand to develop a strong niche market which has been reinforced by word-of-mouth brand recommendations.

6.2 Research limitations

The scope of the research was limited to respondents from the south-east metropolitan area of Perth. Arguably this was a representative sample of adolescents from middle-class socio-economic backgrounds attending
public high schools in Australia; however, a broader sample population may have highlighted influences in adolescent alcohol consumption such as whether:

- Religious beliefs discourage drinking. For example, Muslims are forbidden from drinking alcohol (Rippen 2005).
- Ethnic backgrounds influence the type of alcohol, and the regularity with which alcohol is consumed in the home (Caetano, Clark & Tam 1998; Wechsler et al. 1970).
- Socio-economic factors influence the amount of disposable income available for the purchase of alcohol.
- Availability determines brand choices. For example, certain beer brands have higher distribution within some states of Australia, such as West End and Southwark in South Australia and Fosters in Victoria.

The quality and interpretation of the study outcomes are potentially affected by the choices of how the constructs are measured, and with this in mind several points were observed. The questionnaire did not include weightings for most choices. These were excluded to reduce the length of the questionnaire and the amount of information that respondents were asked to consider. The inclusion of weightings for multiple response questions may have added more importance to some responses. The term ‘friends’ was left to the discretion of the respondent, and this could have been interpreted as close friends, either male or female or both. The interpretation of friends by the respondents was appropriate for the analysis but it lacked a basis for determining the scope of influence of a very close or ‘best friend’. The
measurement of parental influence could also have been expanded to include the regularity with which respondents drank with their parents, and this aspect would be worthy of further research.

Since the research questionnaire was based on self-reported data, it may reflect under or over reporting in the disclosure of sensitive information. Although the questionnaire was confidential, some respondents may have been reluctant to disclose the amount of alcohol they consumed particularly if their parents were unaware they drank. Conversely, some respondents may have overestimated their alcohol consumption as a show of bravado. The design of the questionnaire, although based on previous research, was extensive, and data missing from the last question suggested that some respondents may have had insufficient time to complete the questionnaire. The questionnaire also required the respondents to recall earlier experiences such as the age they first drank alcohol, and as acknowledged in the literature review, memory recall can incur bias (Bringham et al. 2010; Johnson, Gerstein & Rasinski 1997). An analysis of the factors influencing the type of alcohol consumed by adolescents was excluded from the research due to the focus on brand choice; however, this would be an appropriate topic for future research.

For the sample data, the model of adolescent alcohol consumption was not an appropriate fit as a full correlated model for both volume consumption and recent alcohol consumption. This could be explained by measurement scale anomalies for the factors. However, the overall analysis did present
three individual models for peer, family and marketing influence, with the peer and family influence models indicating a good fit to the data.

6.3 Public policy implications

The issues of binge drinking and underage drinking in Australia have become the focus of much public debate, particularly over the past ten years. The former Australian Labor Government’s response to this debate was in part, legislative changes which increased the tax on pre-mixed alcoholic products. A tax increase of 70% was applied for a trial period in April 2008 to bring the tax on pre-mixed drinks in line with spirits, and was expected to raise more than $2 billion in extra revenue over the following four years (Gordon & Harrison 2008). Following the imposition of the tax, sales figures released by the Liquor Merchants Association of Australia showed a decline in sales of pre-mixed drinks of almost 30% from April to June 2008. However, for the same period there was a rise in sales of spirits of almost 50% (Kerr 2008). The legislation was subsequently defeated in the Senate in March 2009 after a trial period a nearly 12 months, but eventually passed as legislation in August 2009.

The tax increase substantially increased the price of pre-mixed drinks and was designed as a Government initiative to curb underage drinking and in particular binge drinking. It was assumed that because underage drinkers have less disposable income, a substantial price rise in their drink of choice would reduce consumption. The effect of the tax increase and resultant price rise was indeed a reduction in the amount of pre-mixed drinks sold; however, industry sources reported a substantial increase in the volume of
spirits sold, which indicated adolescents were mixing their own alcoholic drinks with fruit juices and carbonated drinks (Kerr 2008; Toohey 2008). The ongoing effect of the price rise has, however, been a reduction in the sales of pre-mixed spirits (Chikritzhs et al. 2009; Skov et al. 2011) and a reduction in the per capita consumption of pure alcohol in litres for pre-mixed products from 1.09 in 2006-07 to 0.68 in 2011-12 (Australian Bureau of Statistics 2013). The tax increase continues to generate substantial revenue for the Federal Government, but whether it has contributed to a reduction in the incidence of underage binge drinking is a matter of conjecture (Tillett 2009a). It was evident in this research that pre-mixed alcohol, although popular, was not the only type of alcohol consumed by adolescents. For this survey 72% of respondents drank pre-mixed alcohol and 28% drank beer, spirits or wine. The research also supported price sensitivity for adolescent drinkers, but with more effect in brand choice than alcohol consumption.

Government regulations have also focused on the issues of alcohol availability such as age restrictions on the purchase of alcohol, local dry area bans, (Calladine 2009), restrictions on the density of retail outlets, and limits on the hours and days of sale of alcohol (Moodie 2008). These regulations may have an influence on underage drinking but they are not always supported by the Australian public. For example, moves to increase the drinking age in Australia have been met with ambivalence by the broader community due to the wide acceptance of alcohol as part of the social norm. The introduction local dry area bans was proposed in response to excessive drinking in some Indigenous communities in Western
Australia, and although generally introduced with community support (Chikritzhs et al. 2007); they have achieved varying success (Strutt 2009). Dry area restrictions at public events, such as the Australia Day fireworks event in Perth led to a reduction in attendances, particularly by younger people (Thomas 2010), and the restrictions were subsequently rescinded. Restrictions on the density of retail outlets, and limits on the hours and days of sale of alcohol have met with opposition from liquor retailers who see the restrictions as a way limiting their sales. Although there is limited Australian research regarding the density of retail outlets, international research indicates a consistent relationship between increased numbers of licensed premises and increased levels of violence (Chikritzhs et al. 2007); however, this does not specifically examine underage drinking. From this research project, the indication is that adolescents are able to acquire alcohol with ease and that a restriction of trading hours would presumably make little difference to their consumption of alcohol.

It was evident from this research that the factors influencing underage drinking are broadly based. The Government initiatives of anti-drinking media campaigns, increased taxes on pre-mixed drinks, education programs and restrictions on availability are tackling only some of the issues. Peer, family and marketing socialisation agents provide a formidable tacit alliance, which in many ways supports adolescent drinking. This research has provided a model of adolescent alcohol brand choice, which highlights the influence of marketing activity and the strength of key brands in adolescent alcohol choices. These factors may be worthy of consideration for future public policy relating to adolescent drinking.
6.4 Managerial implications

The liquor industry continues to expand the pre-mixed market with new product variants which appeal to younger drinkers. For example, manufacturers have used a tax loophole to produce a product that tastes like alcopops using beer fermentation methods (Rohrer 2002) and thus attracting the lower tax rate of beer and avoiding the higher tax rate applied to alcopops (Pownall 2008). This has been interpreted by the Government as a way for manufacturers to maintain production of a lower priced alcopop. Therefore, manufacturers should be mindful of lower priced alcopops being interpreted as aimed at adolescents. As the Government continues to monitor these products and review further tax increases, there remains a threat of further Government intervention.

Additional limitations on advertising and promotion of alcohol, and the phasing out of sports sponsorship by alcohol companies, have all been proposed as ways to discourage underage drinking. The Australian Medical Association and the Federal Government’s National Preventative Health Task Force are part of a growing body in support of such measures. However, with an estimated $300 million being funnelled into sports sponsorship each year by alcohol companies, the banning of sport sponsorship would produce a considerable revenue shortfall for some sports (Bennett 2009). An association between sales promotions for alcoholic products and adolescent alcohol brand choice has been supported by this research project. This finding contributes to the literature regarding the influence of these marketing tools and highlights the challenge facing
alcohol manufacturers in finding ways to promote their products that are acceptable to the majority of interest groups. Considering the threat of further Government restrictions on alcohol marketing, the liquor industry needs to be seen as effectively exercising self-regulation of alcohol promotion.

The need for a standardised alcohol percentage range for particular alcohol categories emerged from the focus groups in this research project. Respondents were largely unaware of the alcohol strength in the products they drank, with the exception of Smirnoff Black which was acknowledged as a “full strength” pre-mixed drink and VB as a “full strength” beer. Premixed products range in alcohol content from 5% to 7%. For most respondents, the conversion to standard glasses was ignored; and they assessed their consumption in terms of the number of bottles consumed, which meant they were not effectively monitoring the amount of alcohol they were consuming. Over the past seven years the manufacturers of VB beer, have reduced the alcohol content of their product from 4.9% to 4.6% (Martin 2009) to bring it into line with the majority of other mainstream Australian beers, and to combat excise rates based on alcohol content (Perry 2009). However, following a sales decline, and adverse consumer reaction, the alcohol content was subsequently increased back to 4.9% (Carlton United Brewery 2013). The variance in alcohol strength of products favoured by adolescents adds to their confusion and the prevention of responsible drinking behaviours.
The focus groups for this research also highlighted container size as another area of contention regarding the amount of alcohol consumed. Currently, individual serve bottles and cans of pre-mixed drinks range in size from 250ml to 340ml, and for beers, individual bottles and cans range in size from 330ml to 375ml. With the imposition of the increased tax on pre-mixed drinks in 2009, some products were downsized to reduce the price which added yet another confusing element to the calculation of standard drink measures. A more standardised approach to container size may be worthy of examination for the pre-mixed category.

Because the liquor industry is under constant scrutiny from the Government, social agencies and public interest groups, any measures that could be seen as being proactive in curbing adolescent drinking, and binge drinking would be a positive step. Liquor retailers, licensees of licensed premises and alcohol manufactures could all play a part in this process to avoid further Government intervention.

6.5 Implications for further research

This research has highlighted several areas that are currently lacking detailed research in relation to adolescent alcohol consumption. Current research into family influence on adolescent drinking mainly focuses on the approval and attitude of parents to drinking. This research identified the need to examine the regularity with which adolescents drink with their parents and how much they drink on these occasions. Another question worthy of further research is the extent to which adolescents drink alcohol on their own, and why they choose to do so. This research identified several
lone drinkers, but further examination of their motives was beyond the scope of the study.

Adolescent alcohol brand choices was newly developed in this research and is worthy of more detailed research. The strength of key brands favoured by adolescents, the influence of a first entry brand to an alcohol category, and word-of-mouth promotion were significant aspects of brand choice to be pursued further. The conceptual model of adolescent alcohol brand choice also highlighted the influence of product attributes on alcohol brand choice, which is an area worthy of further research.

6.6 Summary

The researcher’s initial objective was to examine the effects of select socialisation agents in the development of adolescent alcohol choices. The initial conceptual model of adolescent alcohol consumption established a framework to examine the constructs of peer, family and marketing influence as they related to alcohol consumption. The further conceptual model of adolescent alcohol brand choice established a framework to examine the constructs of promotional marketing and product attributes as they related to alcohol brand choices. The validity of all 13 hypotheses developed in support of the models was confirmed by the statistical analysis.

The research data provided a unique profile of a sample of adolescent drinkers within the constraints of the Perth metropolitan area and presented an insight into their drinking behaviours and influences on brand choice. The research also highlighted the different trends and influences for
adolescent drinkers as compared to adult drinkers. These differences were supported by the brand choices made by adolescents and by the influences of select socialisation agents. This research contributed to the knowledge of adolescent alcohol consumption and provided a model for adolescent alcohol brand choice that had not been previously developed. The research also brought into focus the importance of market leading brands and their influence on brand choice.

The conceptual model of adolescent alcohol brand choice and the statistical analysis highlighted the importance of marketing activity for adolescent drinkers. An association between television advertising recognition and adolescent alcohol brand choice was not supported by this research. This point was of particular note because television advertising recognition was associated with alcohol consumption. The brands favoured by underage drinkers in this survey were generally not advertised on television and therefore the strength of alternative promotional marketing activities, such as sales promotions, brand merchandise and word-of-mouth, were indicated.

The philosophical view of this research, that the socialisation agents influencing adolescent alcohol consumption are not of the same significance or indeed in some cases the same, as those influencing alcohol brand choice, was supported by the data analysis. The research has contributed to a better understanding of adolescent consumers and the factors that influence their product choices in relation to alcohol. Previous research into adolescent alcohol consumption has been undertaken mainly in response to concerns about health issues, adolescent binge drinking and displays of anti-social
behaviour. As such, the previous research has fallen short by not addressing
the product choices adolescent make once they have decided to drink
alcohol. This research project has addressed these issues by examining
adolescent alcohol brand choices and the effects of select socialisation
agents.
References


References


References


References


Appendices

Appendix A: Survey questionnaire
Appendix B: Measurement indicators for hypotheses
Appendix C: Measurement indicators for parental influence hypotheses
Appendix D: Television commercials surveyed
Appendix E: Regression weights for alcohol consumption and brand choice models
Appendix F: Price comparison of the top five brand choices
Appendix A: Survey questionnaire

Survey on Alcohol Consumption and Brand Choice

Confidential Questionnaire

This survey examines alcohol consumption and brand choice of students aged 14 to 17 years and is being conducted as part of a research project by the University of Western Australia.

Answers will remain confidential and all respondents will remain unidentified. Your results cannot be traced back to you. No individual survey will be viewed by school / college staff or parents. You can withdraw from the survey at any time.

Please fill in the answer or tick the appropriate box ✓ of the answer which best fits your situation.

Thank you for taking the time to fill out the survey.

The research is being conducted by Carol Osborne a PhD student in the School of Economics and Commerce at the University of Western Australia (0419 433 138). The Chief Investigator of this project is Professor Dick Mizerski (6488 7210). If you have any comment regarding the manner, in which the research project is conducted, please contact Carol Osborne or the Secretary, Human Research Ethics Committee, Registrar's Office, University of Western Australia, 35 Stirling Highway, Crawley, WA 6009 (6488 3703).
Survey on Alcohol Consumption and Brand Choice

YOUR BACKGROUND

1. Age ________ (in years)

2. Gender
   Male □ 1
   Female □ 2

YOUR ALCOHOL CONSUMPTION

3. Have you ever tried alcohol? (at least 1 standard drink)
   No □ 1 (Go to question 14)
   Yes □ 2 (Go to next question)

The following diagram shows how much is in a standard drink for certain types of alcohol.

- **1.5**
  - 375ml Full Strength Beer
  - 4.5% Alc./Vol

- **1**
  - 375ml Mid Strength Beer
  - 3.5% Alc./Vol

- **0.8**
  - 375ml Light Beer
  - 2.7% Alc./Vol

- **1**
  - 30ml Alcoholic Shot
  - 40% Alc./Vol

- **1.5**
  - 375ml Pre-mix Spirits
  - 5% Alc./Vol

- **1.2**
  - 300ml Alcoholic Soda
  - 5% Alc./Vol

- **1**
  - 30ml Spirit Nip
  - 40% Alc./Vol

- **1.5**
  - 170ml Average Serve of Sparkling Wine/Champagne
  - 11.5% Alc./Vol

- **1**
  - 100ml Small Serve of Wine
  - 12% Alc./Vol

4. About how old were you when you had your first standard drink of alcohol? _______ (in years)

5. Do your parents/guardians know you drink? Yes □ 1 No □ 2 Not sure □ 3
   If yes, do they?
   - Approve
   - Slightly approve
   - Neither approve or disapprove
   - Slightly disapprove
   - Disapprove

   □ 4 □ 5 □ 6 □ 7 □ 8

6. About how many standard alcoholic drinks have you had in the past 2 weeks? ________
7. Which type/s of alcohol do you *usually drink*?

- Beer
- Pre-mixed spirits or alcoholic sodas
- Spirits or liqueurs (straight, with ice, or with mixers)
- Wine (still, sparkling or fortified)

(Tick as many as apply)

8. Which *one* type, *brand* and *variety* of alcohol do you *drink the most*?

(eg. Type-Beer, Brand-Carlton, Variety-Mid or Type-Pre-mixed, Brand-Smirnoff, Variety-Black)

<table>
<thead>
<tr>
<th>Type</th>
<th>Brand</th>
<th>Variety</th>
</tr>
</thead>
</table>

9. About how many standard alcoholic drinks have you had of the above brand in the past 2 weeks? ________

10. If you *drank beer* in the past 2 weeks, which of the following brands did you drink?

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Number</th>
<th>Didn't drink beer in the past 2 weeks</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corona</td>
<td>1</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Stella</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Becks</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tooheys</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XXXX</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swan</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coopers</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carlton</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria Bitter</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>If other, please specify</td>
<td></td>
</tr>
</tbody>
</table>

11. If you *drank pre-mixed spirits or alcoholic sodas* in the past 2 weeks, which of the following brands did you drink?

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Number</th>
<th>Didn't drink pre-mixed spirit or alcoholic soda in the past 2 weeks</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archers</td>
<td>1</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Vodka Cruiser</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bacardi Breezer</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midori</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smirnoff</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongbow</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UDL</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bundagerg</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canadian Club</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack Daniels</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jim Beam</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cougar</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnnie Walker</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mudshake</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>If other, please specify</td>
<td></td>
</tr>
</tbody>
</table>
12. If you drank spirits in the past 2 weeks, which of the following brands did you drink?

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smirnoff</td>
<td>1</td>
</tr>
<tr>
<td>Absolut</td>
<td>2</td>
</tr>
<tr>
<td>Johnnie Walker</td>
<td>3</td>
</tr>
<tr>
<td>Cougar</td>
<td>4</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>5</td>
</tr>
<tr>
<td>Southern Comfort</td>
<td>6</td>
</tr>
<tr>
<td>Bundaberg</td>
<td>7</td>
</tr>
<tr>
<td>Bacardi</td>
<td>8</td>
</tr>
<tr>
<td>Midori</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
</tbody>
</table>

If other, please specify ________________________________

Didn’t drink spirits in the past 2 weeks □ 11

13. If you drank wine in the past 2 weeks, which brands did you drink?

________________________________________

Didn’t drink wine in the past 2 weeks □ 1

YOUR FRIENDS ALCOHOL CONSUMPTION

14. If your friends drink beer, which of the following brands do they drink?

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Tick</th>
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<tbody>
<tr>
<td>Corona</td>
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<td>Tooheys</td>
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<td>XXXX</td>
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<tr>
<td>Swan</td>
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<tr>
<td>Carlton</td>
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<tr>
<td>Victoria Bitter</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
</tbody>
</table>

If other, please specify ________________________________

Friends don’t drink beer □ 11

15. If your friends drink pre-mixed spirits or alcoholic sodas, which of the following brands do they drink?

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archers</td>
<td>1</td>
</tr>
<tr>
<td>Vodka Cruiser</td>
<td>2</td>
</tr>
<tr>
<td>Bacardi Breeze</td>
<td>3</td>
</tr>
<tr>
<td>Midori</td>
<td>4</td>
</tr>
<tr>
<td>Smirnoff</td>
<td>5</td>
</tr>
<tr>
<td>Strongbow</td>
<td>6</td>
</tr>
<tr>
<td>UDL</td>
<td>7</td>
</tr>
<tr>
<td>Bundagberg</td>
<td>8</td>
</tr>
<tr>
<td>Canadian Club</td>
<td>9</td>
</tr>
<tr>
<td>Jack Daniels</td>
<td>10</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>11</td>
</tr>
<tr>
<td>Cougar</td>
<td>12</td>
</tr>
<tr>
<td>Johnnie Walker</td>
<td>13</td>
</tr>
<tr>
<td>Mudshake</td>
<td>14</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
</tr>
</tbody>
</table>

If other, please specify ________________________________

Friends don’t drink pre-mixed spirits or alcoholic sodas □ 16
16. If your friends drink spirits, which of the following brands do they drink? 

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Brand</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smirnoff</td>
<td>1</td>
</tr>
<tr>
<td>Absolut</td>
<td>2</td>
</tr>
<tr>
<td>Johnnie Walker</td>
<td>3</td>
</tr>
<tr>
<td>Cougar</td>
<td>4</td>
</tr>
<tr>
<td>Jim Beam</td>
<td>5</td>
</tr>
<tr>
<td>Southern Comfort</td>
<td>6</td>
</tr>
<tr>
<td>Bundaberg</td>
<td>7</td>
</tr>
<tr>
<td>Bacardi</td>
<td>8</td>
</tr>
<tr>
<td>Midori</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
</tbody>
</table>

Friends don't drink spirits [1]

If other, please specify __________________________

17. If your friends drink wine, which brands do they drink? 

__________________________________________________

Friends don't drink wine [1]

18. On what occasions do you drink alcohol with your parents/guardians? 

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Occasion</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>1</td>
</tr>
<tr>
<td>With meals at home</td>
<td>2</td>
</tr>
<tr>
<td>At a restaurant</td>
<td>3</td>
</tr>
<tr>
<td>Family party or bar-b-q</td>
<td>4</td>
</tr>
<tr>
<td>Special occasions, Christmas, birthdays</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
</tbody>
</table>

If other, please specify __________________________

19. On what occasions do you drink alcohol with your friends? 

(Tick as many as apply)

<table>
<thead>
<tr>
<th>Occasion</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>1</td>
</tr>
<tr>
<td>No occasion, whenever I feel like it</td>
<td>2</td>
</tr>
<tr>
<td>Friday and/or Saturday night</td>
<td>3</td>
</tr>
<tr>
<td>At parties</td>
<td>4</td>
</tr>
<tr>
<td>At concerts, gigs, raves, festivals</td>
<td>5</td>
</tr>
<tr>
<td>School ball before and after parties</td>
<td>6</td>
</tr>
<tr>
<td>Schoolies</td>
<td>7</td>
</tr>
<tr>
<td>At hotels/clubs</td>
<td>8</td>
</tr>
<tr>
<td>At sporting events</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
</tbody>
</table>

If other, please specify __________________________

Survey on Alcohol Consumption and Brand Choice
20. When did you last drink alcohol? _____ Days ago _____ Weeks ago _____ Months ago

21. Who was this with? Friends 1 Parents/guardians 2 Other 3
   If other, please specify ____________________________

YOUR EXPOSURE TO ALCOHOL MARKETING

22. Which of the following television commercials do you recall having seen?
   (Tick as many as apply)

<table>
<thead>
<tr>
<th>Commercial Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>San Miguel (group drinking on beach)</td>
<td>1</td>
</tr>
<tr>
<td>Corona (lime hitting fan)</td>
<td>2</td>
</tr>
<tr>
<td>Becks (lucky German bubbles)</td>
<td>3</td>
</tr>
<tr>
<td>James Boag (woman on bonnet of car)</td>
<td>4</td>
</tr>
<tr>
<td>Hahn Premium (guy jumps on bean bag)</td>
<td>5</td>
</tr>
<tr>
<td>Cascade (tiger comes alive)</td>
<td>6</td>
</tr>
<tr>
<td>Victoria Bitter (the rules of shouting)</td>
<td>7</td>
</tr>
<tr>
<td>Stirling (guys with meat pies)</td>
<td>8</td>
</tr>
<tr>
<td>XXXX (guys in boat fishing on land)</td>
<td>9</td>
</tr>
<tr>
<td>Carlton Cold (cold filtered)</td>
<td>10</td>
</tr>
<tr>
<td>Carlton Mid-strength (stay a little bit longer)</td>
<td>11</td>
</tr>
<tr>
<td>Carlton Draft (brewed in big metal things)</td>
<td>12</td>
</tr>
<tr>
<td>Tooheys Extra Dry (walking tongue)</td>
<td>13</td>
</tr>
<tr>
<td>Tooheys Extra Dry (vacuum cleaner in pool)</td>
<td>14</td>
</tr>
<tr>
<td>Tooheys New (it's all good mate)</td>
<td>15</td>
</tr>
<tr>
<td>Swan (history of Sunday session)</td>
<td>16</td>
</tr>
<tr>
<td>Kahlua (drink the rhythm)</td>
<td>17</td>
</tr>
<tr>
<td>Johnny Walker (keep walking)</td>
<td>18</td>
</tr>
<tr>
<td>Archers (girls at bar hiding bottles)</td>
<td>19</td>
</tr>
<tr>
<td>Baileys (zero gravity bar)</td>
<td>20</td>
</tr>
<tr>
<td>Baileys (dancing at bar)</td>
<td>21</td>
</tr>
<tr>
<td>Bundaberg &amp; lime (Bundy bear flying helicopter)</td>
<td>22</td>
</tr>
<tr>
<td>Bundaberg (Bundy bear turns pink)</td>
<td>23</td>
</tr>
<tr>
<td>Cougar Bourbon (5 Cougar's thanks)</td>
<td>24</td>
</tr>
<tr>
<td>Cougar Bourbon (guys at the footy)</td>
<td>25</td>
</tr>
<tr>
<td>Jim Beam (boxing)</td>
<td>26</td>
</tr>
<tr>
<td>Jim Beam (racing car)</td>
<td>27</td>
</tr>
<tr>
<td>Absolut (drift running down bottle)</td>
<td>28</td>
</tr>
<tr>
<td>Smirnoff (bottles inside ice cube)</td>
<td>29</td>
</tr>
<tr>
<td>Smirnoff (couple at picnic)</td>
<td>30</td>
</tr>
</tbody>
</table>

23. Which of the following promotions for alcoholic products have you participated in?
   (Tick as many as apply)

<table>
<thead>
<tr>
<th>Promotion Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vouchers for free drinks</td>
<td>1</td>
</tr>
<tr>
<td>Taste test</td>
<td>2</td>
</tr>
<tr>
<td>Competitions to win prizes</td>
<td>3</td>
</tr>
<tr>
<td>Gift with purchase</td>
<td>4</td>
</tr>
<tr>
<td>Discount vouchers</td>
<td>5</td>
</tr>
<tr>
<td>Free entry to events</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
</tr>
</tbody>
</table>

   If other, please specify ____________________________

24. Which brand/s were these for? ____________________________

Survey on Alcohol Consumption and Brand Choice 5/7
25. Which of the following alcoholic branded merchandise do you own or have on display at home?

(Tick as many as apply)  

- Jugs/glasses  
- Coasters/bar mats/bar tools  
- Stubbie holders  
- Clothing/hats  
- Carry bags/cooler bags  
- Posters/stickers  
- Framed prints/mirrors  
- Key rings/wallets  
- Mobile phone accessories  
- Stationery/pens  
- Bottles on display  
- Statues on display  
- Other  

None □ 14 (Go to question 27)  

If other, please specify __________________________

26. Which brand/s are these for? __________________________

PRICING AND AVAILABILITY OF ALCOHOL BRANDS

(If you do not drink alcohol, you have now finished the survey – thank you for your time)

27. When the brand of alcohol you drink the most is on special do you?

(Tick as many as apply)

- Buy and drink more  
- Buy and save until needed  
- Only buy if you have the money  
- Doesn't influence purchase  
- Other  

If other, please specify __________________________

28. When another brand of alcohol (other than the brand you drink the most) is on special, depending on the amount you buy, would you be influenced to brand switch?

(Tick only one)

- If there were a saving of less than $1  
- If there were a saving of $1-$2  
- If there were a saving of $3-$4  
- If there were a saving of $5 or more  
- No, wouldn't switch brands

29. What would you do if the brand of alcohol you drink the most was not available?

(Tick only one)

- Choose another brand  
- Try to get it elsewhere  
- Other  

Wouldn't drink □ 4

If other, please specify __________________________
30. When a new alcoholic product is launched onto the market, how do you find out about it?

(Tick as many as apply)

- Recommendation from friends
- Recommendation from parents/guardians
- Television advertising
- Sale catalogues
- Point-of-sale displays at hotels, clubs, bottle shops etc.
- Promotions
- Other
- If other, please specify ____________________________

BRAND CHOICE

31. Please rate the importance of the *brand you drink most* for the following

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Important</th>
<th>Neither</th>
<th>Unimportant</th>
<th>Very Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Where you will be drinking</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>2. Who you drink with</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>3. Low alcohol %</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>4. Good taste</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>5. Low price</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>6. Amount you intend to drink</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>7. Memorable advertising</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>8. Easy availability</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>9. Pack/bottle looks good</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>10. Brand your friends drink</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>11. Brand parent/guardian drinks</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>12. Promotional offers</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
<tr>
<td>13. Branded merchandise</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
<td>☐ 4</td>
<td>☐ 5</td>
</tr>
</tbody>
</table>

Thank you for taking the time to fill out the survey
### Appendix B: Measurement indicators for hypotheses

#### Factors related with recent alcohol consumption

<table>
<thead>
<tr>
<th></th>
<th>Pearson correlation</th>
<th>Model fit</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R, Sig.</td>
<td>R², F, df, Sig.</td>
<td>B, S.E, β, t, Sig.</td>
</tr>
<tr>
<td>H1</td>
<td>(Constant) Pre-mix friends drink</td>
<td>.012, .022</td>
<td>333.393, 1.760, .767, .109, 2.295, .022</td>
</tr>
<tr>
<td>H2</td>
<td>(Constant) Occasions drink with friends</td>
<td>.034, .000</td>
<td>328.215, 4.490, 73.096, .000</td>
</tr>
<tr>
<td>H5</td>
<td>(Constant) Occasions drink with parents</td>
<td>.027, .001</td>
<td>324.438, 5.883, 55.145, .000</td>
</tr>
<tr>
<td>H10a</td>
<td>Price sensitivity</td>
<td>.017, .006</td>
<td>328.326, 5.787, 56.733, .000</td>
</tr>
</tbody>
</table>

#### Factors related with the volume of alcohol consumed

<table>
<thead>
<tr>
<th></th>
<th>Pearson correlation</th>
<th>Model fit</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R, Sig.</td>
<td>R², F, df, Sig.</td>
<td>B, S.E, β, t, Sig.</td>
</tr>
<tr>
<td>H1</td>
<td>(Constant) Beer friends drink</td>
<td>.041, .000</td>
<td>1.946, .588, 3.310, .001</td>
</tr>
<tr>
<td>H2</td>
<td>(Constant) Occasions drink with friends</td>
<td>.134, .000</td>
<td>1.697, .586, .005, .996</td>
</tr>
<tr>
<td>H3</td>
<td>(Constant) Age first drink</td>
<td>.037, .000</td>
<td>-.554, 1.169, -.474, .636</td>
</tr>
<tr>
<td>H4</td>
<td>(Constant) Parental approval of drinking</td>
<td>.034, .038</td>
<td>1.284, 1.363, .942, .347</td>
</tr>
<tr>
<td>H5</td>
<td>(Constant) Occasions drink with parents</td>
<td>.012, .024</td>
<td>2.350, .818, 2.873, .004</td>
</tr>
<tr>
<td>H8a</td>
<td>(Constant) Participation in sales promotions</td>
<td>.027, .001</td>
<td>3.597, .363, 9.919, .000</td>
</tr>
<tr>
<td>H9a</td>
<td>(Constant) Merchandise owned</td>
<td>.032, .000</td>
<td>2.499, .530, 4.715, .000</td>
</tr>
<tr>
<td>H10a</td>
<td>Price sensitivity</td>
<td>.090, .300</td>
<td>2.117, .323, 6.554, .000</td>
</tr>
</tbody>
</table>

#### Factors related with choice

<table>
<thead>
<tr>
<th></th>
<th>Pearson correlation</th>
<th>Model fit</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R, Sig.</td>
<td>R², F, df, Sig.</td>
<td>B, S.E, β, t, Sig.</td>
</tr>
<tr>
<td>H9b</td>
<td>(Constant) Brand merchandise</td>
<td>.018, .005</td>
<td>1.907, .303, 6.303, .000</td>
</tr>
<tr>
<td>H10b</td>
<td>(Constant) Price reductions</td>
<td>.009, .056</td>
<td>3.194, .254, 12.565, .000</td>
</tr>
<tr>
<td>H11</td>
<td>(Constant) Last drink with friends</td>
<td>.016, .045</td>
<td>2.405, .153, 15.735, .000</td>
</tr>
<tr>
<td>H11</td>
<td>(Constant) Drink with friends at parties</td>
<td>.008, .055</td>
<td>2.466, .166, 14.865, .000</td>
</tr>
</tbody>
</table>
### Appendix C: Measurement indicators for parental influence hypotheses

#### Multiple regression analysis

**Age when first drank and parental factors**

<table>
<thead>
<tr>
<th>Model fit</th>
<th>Coefficient</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R²</strong></td>
<td><strong>F</strong></td>
<td><strong>df</strong></td>
<td><strong>Sig.</strong></td>
<td><strong>B</strong></td>
<td><strong>S.E</strong></td>
<td><strong>β</strong></td>
<td><strong>t</strong></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.012</td>
<td>4.144</td>
<td>1</td>
<td>.043</td>
<td>12.246</td>
<td>.113</td>
<td>108.512</td>
</tr>
<tr>
<td>Drink with parents at parties</td>
<td>-1.113</td>
<td>.547</td>
<td>-.108</td>
<td>-2.036</td>
<td>.043</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicates there is only one independent variable with a significant \( p \) value after applying a stepwise analysis which removed the least significant variables and isolated 'drink with parents at parties' (decreasing the significance only marginally from .021 to .043)

#### Multiple regression analysis

**Volume consumed in past two weeks and parental factors**

<table>
<thead>
<tr>
<th>Model fit</th>
<th>Coefficient</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R²</strong></td>
<td><strong>F</strong></td>
<td><strong>df</strong></td>
<td><strong>Sig.</strong></td>
<td><strong>B</strong></td>
<td><strong>S.E</strong></td>
<td><strong>β</strong></td>
<td><strong>t</strong></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.027</td>
<td>9.378</td>
<td>1</td>
<td>.002</td>
<td>3.264</td>
<td>.406</td>
<td>8.036</td>
</tr>
<tr>
<td>Drink with parents meals at home</td>
<td>3.207</td>
<td>1.047</td>
<td>.165</td>
<td>3.062</td>
<td>.002</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicates there is only one independent variable with a significant \( p \) value after applying a stepwise analysis which removed the least significant variables and isolated 'drink with parents meals at home' (marginally decreasing the significance from .001 to .002)
### Appendix D: Television commercials surveyed

1. San Miguel (group drinking on beach)
2. Corona (lime hitting fan)
3. Becks (lucky German bubbles)
4. James Boag (woman on bonnet of car)
5. Hahn Premium (guy jumps on bean bag)
6. Cascade (tiger comes alive)
7. Victoria Bitter (the rules of shouting)
8. Stirling (guys with meat pies)
9. XXXX (guys in boat fishing on land)
10. Carlton Cold (cold filtered)
11. Carlton Mid-strength (stay a little bit longer)
12. Carlton Draft (brewed in big metal things)
13. Tooheys Extra Dry (walking tongue)
14. Tooheys Extra Dry (vacuum cleaner in pool)
15. Tooheys New (it’s all good mate)
16. Swan (history of Sunday session)
17. Kahlua (drink the rhythm)
18. Johnny Walker (keep walking)
19. Archers (girls at bar hiding bottles)
20. Baileys (zero gravity bar)
21. Baileys (dancing at bar)
22. Bundaberg & lime (Bundy bear flying helicopter)
23. Bundaberg (Bundy bear at bar)
24. Cougar Bourbon (5 Cougar’s thanks)
25. Cougar Bourbon (guys at the beach)
26. Jim Beam (boxing)
27. Jim Beam (racing car)
28. Absolut (drip running down bottle)
29. Smirnoff (bottles inside ice cube)
30. Smirnoff (couple at picnic)

The fictitious commercials:

1. San Miguel (group drinking on beach) – magazine advertisement
25. Cougar Bourbon (guys at the beach)
27. Jim Beam (racing car)
30. Smirnoff (couple at picnic)
### Appendix E: Regression weights for alcohol consumption and brand choice models

#### Regression weights for peer influence / recent consumption model

<table>
<thead>
<tr>
<th></th>
<th>B$^a$</th>
<th>$\beta$</th>
<th>S.E.</th>
<th>C.R.</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer friends drink</td>
<td>2.043</td>
<td>.623</td>
<td>.319</td>
<td>6.397</td>
<td>***</td>
</tr>
<tr>
<td>Pre-mix friends drink</td>
<td>5.741</td>
<td>.924</td>
<td>.851</td>
<td>6.743</td>
<td>***</td>
</tr>
<tr>
<td>Spirit friends drink</td>
<td>3.278</td>
<td>.796</td>
<td>.486</td>
<td>6.750</td>
<td>***</td>
</tr>
<tr>
<td>Drinking occasions with friends</td>
<td>1.000</td>
<td>.336</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent consumption</td>
<td>12.050</td>
<td>.121</td>
<td>5.316</td>
<td>2.267</td>
<td>.023</td>
</tr>
</tbody>
</table>

#### Regression weights for family influence / volume consumption model

<table>
<thead>
<tr>
<th></th>
<th>B$^a$</th>
<th>$\beta$</th>
<th>S.E.</th>
<th>C.R.</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents approval</td>
<td>1.560</td>
<td>.648</td>
<td>.329</td>
<td>4.747</td>
<td>***</td>
</tr>
<tr>
<td>Drinking occasions with parents</td>
<td>1.000</td>
<td>.445</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents knowledge of drinking</td>
<td>.455</td>
<td>.516</td>
<td>.087</td>
<td>5.238</td>
<td>***</td>
</tr>
<tr>
<td>Volume consumption</td>
<td>2.551</td>
<td>.136</td>
<td>1.230</td>
<td>2.073</td>
<td>.038</td>
</tr>
</tbody>
</table>

#### Regression weights for family influence / recent consumption model

<table>
<thead>
<tr>
<th></th>
<th>B$^a$</th>
<th>$\beta$</th>
<th>S.E.</th>
<th>C.R.</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents approval</td>
<td>1.420</td>
<td>.615</td>
<td>.286</td>
<td>4.974</td>
<td>***</td>
</tr>
<tr>
<td>Occasions drink with parents</td>
<td>1.000</td>
<td>.464</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents knowledge of drinking</td>
<td>.451</td>
<td>.533</td>
<td>.086</td>
<td>5.243</td>
<td>***</td>
</tr>
<tr>
<td>Recent consumption</td>
<td>20.971</td>
<td>.161</td>
<td>8.744</td>
<td>2.398</td>
<td>.016</td>
</tr>
</tbody>
</table>

B$^a$ is the standardized path coefficient, and $\beta$ is the unstandardized path coefficient; *** denotes $p<.01$
### Appendix E: Regression weights for alcohol consumption and brand choice models

#### Regression weights for marketing influence / recent and volume consumption model

<table>
<thead>
<tr>
<th></th>
<th>B^a</th>
<th>β</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price sensitivity</td>
<td>.445</td>
<td>.638</td>
<td>.099</td>
<td>4.507</td>
<td>***</td>
</tr>
<tr>
<td>Brand merchandise</td>
<td>1.000</td>
<td>.429</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume consumption</td>
<td>2.338</td>
<td>.475</td>
<td>.478</td>
<td>4.885</td>
<td>***</td>
</tr>
<tr>
<td>Recent consumption</td>
<td>8.979</td>
<td>.252</td>
<td>2.640</td>
<td>3.401</td>
<td>***</td>
</tr>
</tbody>
</table>

#### Regression weights for full alcohol consumption model

<table>
<thead>
<tr>
<th></th>
<th>B^a</th>
<th>β</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent consumption</td>
<td>1.043</td>
<td>.035</td>
<td>1.807</td>
<td>-.577</td>
<td>.564</td>
</tr>
<tr>
<td>Recent consumption</td>
<td>3.516</td>
<td>.008</td>
<td>24.828</td>
<td>-.142</td>
<td>.887</td>
</tr>
<tr>
<td>Recent consumption</td>
<td>7.695</td>
<td>.250</td>
<td>2.634</td>
<td>2.921</td>
<td>.003</td>
</tr>
<tr>
<td>Volume consumption</td>
<td>-.003</td>
<td>-.001</td>
<td>.275</td>
<td>-.012</td>
<td>.991</td>
</tr>
<tr>
<td>Volume consumption</td>
<td>-1.400</td>
<td>-.023</td>
<td>3.734</td>
<td>-.375</td>
<td>.708</td>
</tr>
<tr>
<td>Volume consumption</td>
<td>2.079</td>
<td>.490</td>
<td>.486</td>
<td>4.278</td>
<td>***</td>
</tr>
</tbody>
</table>

#### Regression weights for marketing influence / brand choice model

<table>
<thead>
<tr>
<th></th>
<th>B^a</th>
<th>β</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotional offers</td>
<td>1.000</td>
<td>.917</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand merchandise</td>
<td>.821</td>
<td>.719</td>
<td>.071</td>
<td>11.552</td>
<td>***</td>
</tr>
<tr>
<td>Brand friends drink</td>
<td>.660</td>
<td>.583</td>
<td>.064</td>
<td>10.327</td>
<td>***</td>
</tr>
<tr>
<td>Choice</td>
<td>.199</td>
<td>.093</td>
<td>.110</td>
<td>1.804</td>
<td>.071</td>
</tr>
</tbody>
</table>

B^a is the standardized path coefficient, and β is the unstandardized path coefficient; *** denotes p<.01
### Appendix E: Regression weights for alcohol consumption and brand choice models

#### Regression weights for product attributes / brand choice model

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Path Coefficient</th>
<th>Standardized Coefficient</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good taste</td>
<td>.570</td>
<td>.472</td>
<td>.098</td>
<td>5.842</td>
<td>***</td>
</tr>
<tr>
<td>Low price</td>
<td>.821</td>
<td>.579</td>
<td>.139</td>
<td>5.910</td>
<td>***</td>
</tr>
<tr>
<td>Easy availability</td>
<td>1.000</td>
<td>.738</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choice</td>
<td>-.189</td>
<td>-.070</td>
<td>.160</td>
<td>-1.186</td>
<td>.236</td>
</tr>
</tbody>
</table>

#### Regression weights for full alcohol brand choice model

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Path Coefficient</th>
<th>Standardized Coefficient</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice</td>
<td>.581</td>
<td>.178</td>
<td>.216</td>
<td>2.688</td>
<td>.007</td>
</tr>
<tr>
<td>Choice</td>
<td>-.843</td>
<td>-.171</td>
<td>.378</td>
<td>-2.230</td>
<td>.026</td>
</tr>
</tbody>
</table>

*B* is the standardized path coefficient, and β is the unstandardized path coefficient; *** denotes *p*<.01
Appendix F: Price comparison of the top five brand choices

<table>
<thead>
<tr>
<th>Brand</th>
<th>Alcohol base</th>
<th>Alcohol % by vol.</th>
<th>Unit size</th>
<th>Standard drinks per unit</th>
<th>Price per unit</th>
<th>Cost per standard drink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vodka Cruiser</td>
<td>Vodka &amp; fruit flavours</td>
<td>4.6%</td>
<td>275ml</td>
<td>1.0</td>
<td>$3.99</td>
<td>$3.99</td>
</tr>
<tr>
<td>Smirnoff Double Black</td>
<td>Vodka &amp; citrus flavour</td>
<td>6.5%</td>
<td>300ml</td>
<td>1.5</td>
<td>$5.49</td>
<td>$3.66</td>
</tr>
<tr>
<td>Jim Beam &amp; Cola</td>
<td>Bourbon whiskey &amp; cola</td>
<td>4.8%</td>
<td>375ml</td>
<td>1.4</td>
<td>$4.29</td>
<td>$3.06</td>
</tr>
<tr>
<td>Carlton Mid</td>
<td>Beer</td>
<td>3.5%</td>
<td>375ml</td>
<td>1.0</td>
<td>$2.55</td>
<td>$2.55</td>
</tr>
<tr>
<td>Tooheys Extra Dry</td>
<td>Beer</td>
<td>4.6%</td>
<td>345ml</td>
<td>1.3</td>
<td>$2.99</td>
<td>$2.30</td>
</tr>
</tbody>
</table>