

The Influence of Significant Others on the Alcohol Consumption Behaviour of Young Australians

Abstract

This research used consumer behaviour and social marketing principles to examine alcohol consumption amongst young, female university students in Australia. Due to the high prevalence of risky alcohol consumption amongst this cohort, this study sought to examine the factors that influence the behaviour of these individuals (Dowdall and Wechsler 2002; Shim and Maggs 2005). To date, this area of research has remained relatively unexplored. This paper reports on the behaviour of consumers in this cohort with a particular focus on reference group influence, in an attempt to make a contribution to future social marketing campaigns aimed at changing high risk behaviour in the context of alcohol.

Track: Social and Non-Profit Marketing- Ethics and Social Responsibility

**The Influence of Significant Others on the Alcohol Consumption Behaviour of Young
Australians**

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Background

Research suggests that both 18 to 24 year olds and university students are the most likely groups to engage in risky alcohol consumption (Australian Institute of Health and Welfare (AIHW) 2004, 2005; Chikritzhs, Catalano, Stockwell, Donath, Ngo, Young and Mathews 2003; Wechsler, Nelson, Lee, Seibring, Lewis and Keeling 2003). Furthermore, excessive drinking is the biggest drug problem for young women especially (Leung 2003). Excessive alcohol consumption has been linked to cancer, physical illness, cognitive difficulties, risky behaviour and sexual dysfunction (National Health and Medical Research Council (NHMRC) 2001). University students often consume alcohol at risky levels because they gain independence and are susceptible to reference group influence (Bauerle 2003; Shim and Maggs 2005). Consequently, this cohort was of particular interest to this study.

Reference Groups and their Influence on Consumption Behaviour

Within the consumer behaviour literature, the importance of reference group influence on behaviour is well-documented (Bearden and Etzel 1982; Childers and Rao 1992; Park and Lessig 1977). A reference group is a group, or individual, who exerts some influence over an individual's evaluations, aspirations and behaviour (Bearden and Etzel 1982; Park and Lessig 1977), and is more influential in this cohort than in other age groups. Reference groups serve two functions: as a comparison for self-appraisal and a source for personal norms, attitudes and values (Childers and Rao 1992). Researchers suggest that individuals act in accordance with the social group to which they affiliate (Bearden and Etzel 1982; Childers and Rao 1992; Park and Lessig 1977).

The normative component of reference groups is of particular interest to this alcohol-related study as health behaviour is often guided by perceptions of the beliefs and behaviour of others (Rimal and Real 2003). Whilst there is debate in the literature concerning the conceptualisation and measurement of the normative component (Bagozzi and Lee 2002; Berkowitz 2004; Lapinski and Rimal 2005; Neighbors, Dillard, Lewis, Bergstrom and Neil 2006; Rimal and Real 2003, 2005), the subjective norm and group norm have both been identified as important influences on behaviour (Ajzen and Fishbein 1980; Johnston and White 2003; Terry and Hogg 1996) and are key concepts in this study of young female students' alcohol consumption. Indeed, studies regarding alcohol use particularly in university settings often involve a measure of norms (Berkowitz 2004; Broadwater, Curtin, Matz and Zrull 2006; Johnston and White 2004; Rimal and Real 2003) and research suggests that university students frequently overestimate the quantity and frequency of peers' consumption of alcohol (Broadwater *et al.* 2006; Maddock and Glanz 2005; Perkins 2002).

Norms are beliefs about a particular behaviour and characterisation of the status quo (Perkins 2002). They encompass both an *attitudinal component* (shared beliefs about acceptable behaviour) and a *behavioural component* (common actions exhibited by a particular reference group) (Perkins 2002). Norms are promoted and understood through social interaction and are often associated with a sanction for non-conformity (Rimal and Real 2003). Reference group influence is an important variable to be included in alcohol studies as the perception of the norm may validate or instigate an individual's alcohol consumption (Broadwater *et al.* 2006). Norms have been identified as an important variable in any health or behavioural type research as health behaviour is often guided by perceptions of others' beliefs and behaviour (Rimal and Real 2003).

Debate often ensues within the literature surrounding 1) how to define norms, 2) the type of norm to be measured and 3) whether to measure proximal or global reference group norms. These issues will be discussed in the following paragraphs. Firstly, the most common used definition that relates to norms is the division of norms into injunctive or descriptive norms. *Injunctive norms* are the perception that important others expect an individual to behave in a certain way and therefore, the individual feels pressured to engage in the behaviour (Berkowitz 2004; Lapinski and Rimal 2005; Neighbors *et al.* 2006; Rimal and Real 2003, 2005). This is associated with the belief that a sanction will apply if the individual does not comply (Rimal and Real 2005).

In contrast, *descriptive norms* are beliefs about the prevalence of a behaviour within a particular population (Berkowitz 2004; Lapinski and Rimal 2005; Neighbors *et al.* 2006; Rimal and Real 2003, 2005). The higher the prevalence of the belief regarding a behaviour, the more likely an individual will adjust their own behaviour to comply with this norm (Rimal and Real 2003, 2005). Researchers suggest that often the beliefs about the prevalence of a behaviour are not accurate (Rimal and Real 2003). The literature is unclear about which norms have a greater association with behaviour and therefore are preferable for use in social norms marketing (Berkowitz 2004).

Secondly, delineation has also occurred between *subjective norms* and *group norms* (Bagozzi and Lee 2002). The subjective norm measure in the theory of reasoned action measures injunctive norms. These norms are defined as the perception of 'important others' in regard to a particular behaviour. Individuals are motivated to comply with these norms (Rimal and Real 2005). An individual's behaviour under this theory is guided by the expectations of others' beliefs which are often formed through experiences with peoples' reactions to the behaviour in question (Rimal and Real 2005). Other researchers have commented that subjective norms are a key variable in being able to predict health-related behaviours because more emphasis is placed on what significant others think (Finlay, Trafimow and Moroi 1999). Subjective norms are more general as indicated by wording of the questions used to measure this variable in this study, 'most people who are important to me' (Bagozzi and Lee 2002). In contrast, group norms are more specific and thus pertain to a clearly identified reference group (Bagozzi and Lee 2002).

The measurement of the normative component in the theory of reasoned action has been questioned because it does not measure descriptive norms (Lapinski and Rimal 2005; McMillan and Conner 2003; Rimal and Real 2003). Other researchers have argued that the conceptualisation of the normative component in the theory of reasoned action is associated with the relatively weak results obtained for this variable in predicting intentions (Johnston and White 2003; Terry and Hogg 1996). It is proposed that a group norm measure would provide stronger results in predicting intention because an individual will adopt group norms if they identify strongly with the group (Johnston and White 2003; Terry and Hogg 1996). Researchers suggest that behaviour will be adopted if the normative climate surrounding the individual supports the behaviour (Grube and Morgan 1990; Johnston and White 2003; Terry and Hogg 1996). A relevant reference group often used in studies concerning university students, is 'friends and peers at university' (Johnston and White 2003; Terry and Hogg 1996).

Thirdly, debate has occurred between researchers about whether to measure *proximal* or *global* reference group norms. Two studies have identified that proximal reference groups (close

friends) were more important than global reference groups in influencing the behaviour of an individual (Lewis and Thombs 2005; Rimal and Real 2003). In contrast, Berkowitz (2004) contends that it is unclear which group norms are more useful in social norms marketing. Other authors suggest the norm must be behaviourally relevant to the individual in regard to the behaviour being studied (Terry and Hogg 1996).

Social marketing has been employed in a variety of contexts to instigate behavioural change amongst a population (Australian Drug Foundation (ADF) 2005; Ling, Franklin, Lindsteadt and Gearon 1992). Social marketing is the utilisation of traditional marketing practices to inform, persuade and promote action to induce behavioural change for the benefit of individuals and society (American Marketing Association (AMA) 2006; ADF 2005; Donovan and Henley 2003; El-Ansary 1974; Halton 2004; Kotler and Zaltman 1971; Ling *et al.* 1992). Numerous methods have been employed to instigate behavioural change including informational, advocacy and social norms marketing methods (DeJong 2002; Kennedy and Crosby 2002). The design of effective social marketing intervention campaigns to mitigate problematic behaviour is important to researchers and practitioners. In this paper recommendations are made for enhancing social marketing intervention campaigns concerning alcohol consumption amongst this cohort.

In summary, this research is concerned with the relative influence of reference groups on young female students' alcohol consumption. The aim of this paper is to report on the influence of significant others on the alcohol consumption behaviour of these consumers with a view to informing future social marketing campaigns aimed at changing behaviour.

Methodology

After reviewing the relevant literature for this study, the research question set was, 'what factors are significant in differentiating between low-risk, risky and high-risk alcohol consumers?' As the context had not been extensively researched a conceptual framework was developed, together with two hypotheses:

Hypothesis 1:

- *Subjective norm* is a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers.

Hypothesis 2:

- *Group norm* is a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers.

Consistent with the use of a cross-sectional and descriptive research design, a self-administered questionnaire was implemented to collect data in relation to the research problem. The questionnaire was developed from an extensive review of the literature, expert panel review and pre-tests on the sample. A total of 305 questionnaires was obtained for data analysis with a response rate of 92.7%, and the computer program Statistical Package for the Social Sciences was used to analyse the data. Quota sampling was utilised due to the unavailability of an appropriate sampling frame and as this method of sampling ensured control of particular characteristics of the target population (Moser 1952; Moser and Stuart 1953). In order to minimise selection bias, data was collected on various days, at various times and in various

locations around the campus (Sudman 1985; Sudman and Kalton 1986), including outside classrooms, the campus eatery, high traffic communal areas and low traffic communal areas.

Preliminary screening and coding of questionnaires enabled the identification of any problematic responses. Principal component analysis and coefficient alphas were executed to develop and test the reliability of the composite variables used in this research (Churchill 1979). Descriptive statistics were conducted to develop a profile of respondents. A multinomial logistic regression was conducted which allowed the testing of the proposed variables against the three categories of alcohol consumption. A series of binary logistic regressions were performed to validate the model.

Findings

The final composition of the two variables is presented in Table 1.

Table 1: Principal Components Analysis Results

Composite variable	No. of items	Inter-item correlation ($r =$)	Item-to-total correlation ($r =$)	% of variance explained	Loadings	Reliability ($\alpha =$)
Subjective norm	4	0.52 - 0.68	0.82 - 0.88	71.78	0.80 - 0.88	0.87
Group norm	4	0.50 - 0.82	0.81 - 0.86	71.65	0.79 - 0.88	0.87

Alcohol Consumption: Classifying the Sample

Alcohol consumption was used as the dependent variable in the bivariate and multivariate analyses. The sample included 40% low-risk (consuming up to and including four standard drinks), 24.6% risky (consuming 5 to 6 standard drinks inclusively) and 35.4% high-risk (consuming 7 or more standard drinks) alcohol consumers. Sixty percent of respondents reported exceeding the Australian Alcohol Guidelines for alcohol consumption in a single session (based on combination of percentages for risky and high-risk alcohol consumers). Within the sample, 88.5% of respondents had consumed five or more standard drinks in a single session. Of those that indicated that they had consumed five or more standard drinks in a single session, 70.7% of those people had done so in the last month. Table 2 presents a summary of the respondents' reported alcohol consumption.

Table 2: Reported Alcohol Consumption (n= 305)

Variable	Category	n	%
Category of alcohol consumer	Low-risk	122	40.0
	Risky	75	24.6
	High-risk	108	35.4
Consumed 5 or more standard drinks ever	Yes	270	88.5
	No	35	11.5
Consumed 5 or more std drinks in last month*	Yes	188	70.7
	No	78	29.3

How many were consumed on that occasion?	5-6 standard drinks	41	21.7
	7-10 standard drinks	84	44.4
	11-14 standard drinks	41	21.7
	15-20 standard drinks	11	5.8
	21+ standard drinks	9	4.8
	Indicated more than one response	3	1.6

* Based on statistics for those that answered yes to consuming five or more standard drinks ever (n=266)

Composite variables

Frequencies were conducted for the two composite variables, subjective norm and group norm and data was analysed based on alcohol consumption categories (Table 3).

Table 3: Summary Statistics for Composite Variables

Variable	Category	Mean	Std. Error	Std. Deviation	5% Trimmed Mean	n
Subjective norm	Low-risk	3.06	0.12	1.35	2.98	122
	Risky	3.51	0.13	1.13	3.51	75
	High-risk	4.55	0.11	1.16	4.58	108
	Total Sample	3.70	0.08	1.39	3.68	305
Group norm	Low-risk	4.17	0.12	1.43	4.19	122
	Risky	4.84	0.10	0.93	4.82	75
	High-risk	5.56	0.08	0.89	5.60	108
	Total Sample	4.82	0.07	1.29	4.88	305

The means for subjective norm across the alcohol consumption categories varied. Low-risk alcohol consumers (mean = 3.06, SD = 1.35) perceive that their 'important others' believe that consuming five or more standard drinks in a single session is slightly undesirable. In contrast, high-risk alcohol consumers (mean = 4.55, SD = 1.16), believe that their important others have a relatively neutral perception toward the individual consuming five or more standard drinks. Group norm means suggest that there is a relatively high perception on campus that consuming five or more standard drinks is the norm at USC, for some respondents. This perception increases when proceeding through the categories of alcohol consumption. This is exhibited in the means for this variable, low-risk (mean = 4.17, SD = 1.43), risky (mean = 4.84, SD = 0.93), high-risk (mean = 5.56, SD = 0.89).

Multivariate Analysis

A multivariate analysis was conducted utilising the two variables to assess whether these variables were significant predictors in differentiating between the three categories of alcohol consumption. The first analysis involved a multinomial logistic regression, which compared the low-risk category (the base category) to both risky and high-risk alcohol consumption. The separate binary logistic regression analyses also allowed the exploration of the variables associated with risky and high-risk alcohol consumption (Menard 1995).

Multinomial Logistic Regression

A multinomial logistic regression was implemented using the main effects, forward entry method to examine the hypotheses. Evaluation of expected cell frequencies for categorical variables did not show any violations of the assumption (Tabachnick and Fidell 2007). Due to the number of metric independent variables, goodness of fit statistics were not computed because the test is sensitive to the number of combinations of variables with zero cell frequencies (Tabachnick and Fidell 2007). The model with the independent variables is significant, indicating that the final model significantly outperforms a constant only model, χ^2 (DF = 12, n = 305) = 174.90, $p < 0.05$.

The likelihood-ratio tests indicate the independent variables which are contributing to the model and are thus discriminating between the groups. *Group norm*, χ^2 (DF = 2, n = 305) = 8.65, $p < 0.05$ significantly contributed to the prediction of alcohol consumption.

Group norm again reliably differentiated low-risk alcohol consumers from high-risk alcohol consumers, $p < 0.05$. High-risk alcohol consumers were more likely to be independent (57.4%) in comparison to low-risk alcohol consumers (36.9%). A comparison of the means for *group norm* indicates a difference in perceptions from high-risk alcohol consumers (5.56) and low-risk alcohol consumers (4.17). This indicates the stronger belief from high-risk consumers about the prevalence of these students consuming five or more standard drinks in a single session.

The findings of the multinomial logistic regression were validated by the execution of binary logistic regressions.

Results of the Hypothesis Testing

The hypotheses were tested utilising a multinomial logistic regression, binary logistic regression, contingency table analysis and a Kruskal-Wallis test (Table 4).

Table 4: Results of Hypothesis Testing

Hypotheses	Low-risk vs. Risky	Low-risk vs. High-risk	Risky vs. High-risk
H1. <i>Subjective norm</i> is a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers.	Unsupported	Unsupported	Supported
H2. <i>Group norm</i> is a significant predictor in differentiating between low-risk, risky and high-risk alcohol consumers.	Unsupported	Supported	Supported

The multinomial logistic regression found that *group norm* was important in differentiating between the alcohol consumption categories. The relative importance of this variable in distinguishing between the categories was explored. *Group norm* was found to differentiate low-risk alcohol consumption and high-risk alcohol consumption offering support for hypothesis two.

A series of binary logistic regressions were executed to validate the findings of the multinomial logistic regression. In exploring the significant predictors, which differentiate risky and high-risk

consumption, the logistic regression found that *subjective norm* and *group norm* were significant. These findings offer support for both hypotheses.

Conclusions and Implications

Subjective Norm

In measuring the concept reference group influence, subjective norm was identified as an important predictor associated with behaviour. This variable is part of the theory of reasoned action (TRA) and theory of planned behaviour (TPB), and has had varying results in its ability to predict intentions in previous studies (Ajzen 1991). This research identified that *subjective norm* was only relevant in differentiating between the risky and high-risk categories of alcohol consumption. This led to partial acceptance of H1. This finding supports its previous significance in studies examining alcohol consumption (Johnston and White 2003; O'Callaghan *et al.* 1997) and other behaviours (Finlay, Trafimow and Moroi 1999; Ryan and Bonfield 1980; Trafimow and Finlay 1996). The mean for subjective norm (mean = 3.70) was similar to the mean for this variable in the Johnston and White (2003, p. 68) study (mean = 3.24). This finding suggests that students who participated in both of these studies believed that their significant others perceived that consuming five or more standard drinks in a single session was slightly undesirable.

Subjective norm was not significant in differentiating between the other categories of alcohol consumption. This finding supports previous research from McMillan and Conner (2003) and Trafimow (1996) in relation to prediction of alcohol consumption. The results obtained from subjective norm could have stemmed from the association of this variable with self-reported behaviour and not with intentions to perform the behaviour, as originally proposed by the TRA (Ajzen and Fishbein 1980). Nonetheless, it may also lend support for findings from Finlay, Trafimow and Moroi (1999), that certain behaviours are more normatively controlled than others. In conclusion, this research found mixed results for the variable subjective norm in differentiating between the categories of alcohol consumption.

Group Norm

Group norm represents the underlying concept of reference group influence. The inclusion of group norm in understanding behaviour was a result of inconsistent findings obtained utilising subjective norm in the TRA and TPB (Ajzen 1991; Johnston and White 2003; Terry and Hogg 1996). This research found that *group norm* was significant in differentiating between low-risk and high-risk, and between risky and high-risk alcohol consumers. These findings offer partial support for H2.

The results suggest that as alcohol consumption increases, the perception of the norm on campus also increases. The mean obtained in this study for group norm was higher (mean = 4.82) than the mean for this variable in the Johnston and White (2003, p. 68) study (mean = 3.99). This may indicate a slightly higher perception on campus of risky alcohol consumption amongst university students or may reflect the demographic characteristics of the sample used in this research.

These results support previous research concerning the significance of group norm in predicting intentions to consume alcohol (Johnston and White 2003; Terry and Hogg 1996). Furthermore, the findings support research conducted by Maddock and Glanz (2005) and Novak and Crawford (2001) in relation to group norm influencing alcohol consumption. This suggests that group

norm may be a significant variable in understanding self-reported behaviour. Group norm did not distinguish between low-risk and risky alcohol consumers. This may be the result of both of these groups having similar perceptions of the norm; mean = 4.17 (low-risk) and mean = 4.84 (risky). Therefore, these findings offer partial support for group norm predicting alcohol consumption.

Limitations and Future Research

This research has three limitations which should be considered in interpreting the results obtained. First, this research focused on a **special population** (Sudman and Kalton 1986), identified as 18 to 24 year old female students at an Australian university. The university differs from other campuses, as it is regional, relatively new and is a 'dry campus' (there is no alcohol sold on campus). Therefore, this offers a new context for alcohol research. Furthermore, young females have been identified as a segment of the general population involved in risky drinking (AIHW 2005; Chikritzhs *et al.* 2003; Leung 2003; NHMRC 2001). Moreover, university students have been identified as a group likely to engage in risky alcohol consumption (AIHW 2004; Davey, Davey and Obst 2002; Johnston and White 2003, 2004; Shim and Maggs 2005) and patterns of consumption amongst this cohort are likely to be adopted in life outside the university (Shim and Maggs 2005).

Second, this research is limited in terms of the **research design** employed. The research utilised a cross-sectional descriptive research design. Consequently, the relationships identified between the variables should be interpreted as associations and not cause and effect relationships (Hair, Babin, Money and Samouel 2003). Similarly, the research design employed allowed collection of data at a single point in time (Malhotra, Hall, Shaw and Oppenheim 2002; Neuman 2000; Stevens, Wrenn, Ruddick and Sherwood 1997) and, whilst this design was useful in collecting information pertaining to the research problem, it does not allow analysis of the phenomenon across a period of time (Malhotra *et al.* 2002; Neuman 2000; Stevens *et al.* 1997).

The final limitation concerns the use of a **self-report questionnaire**. The use of self-report questionnaires is common in alcohol, drug and other health research. Researchers have suggested that these instruments may be the only means to obtain information that only the participant knows, and that self-reported methods have relatively high reliability and accuracy (Cooper, Sobell, Sobell and Maisto 1981; Dufour 1999; Harrell 1997; Harrison 1997; Patrick, Cheadle, Thompson, Diehr, Koepsell and Kinne 1994).

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