

**Social Anxiety, Alcohol Expectancies,  
and Self-Esteem and Their Correlation  
to Alcohol Consumption**

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## Table of Contents

|  |    |
|--|----|
| Acknowledgements                             | 3  |
| Abstract                                     | 4  |
| 1. Introduction                              | 5  |
| 1.1: Self-Esteem                             | 6  |
| 1.2: Social Anxiety                          | 7  |
| 1.3: Social Anxiety and Alcohol Expectancies | 8  |
| 1.4: Gender                                  | 9  |
| 1.5: Age                                     | 10 |
| 1.6: Rationale                               | 11 |
| 1.7: Hypotheses                              | 12 |
| 2. Methodology                               | 13 |
| 2.1: Participants                            | 13 |
| 2.2: Apparatus                               | 13 |
| 2.3: Materials                               | 13 |
| 2.4: Design                                  | 15 |
| 2.5: Procedure                               | 16 |
| 2.6: Ethical Considerations                  | 17 |
| 3. Results                                   | 19 |
| 4. Discussion                                | 25 |
| 4.1: Findings                                | 25 |
| 4.2: Comparisons with Previous Research      | 26 |
| 4.3: Implications                            | 27 |
| 4.4: Strengths and Weaknesses                | 28 |
| 4.5: Future Directions                       | 29 |
| 4.6: Conclusion                              | 30 |
| 5. References                                | 32 |
| 6. Appendices                                | 35 |

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### **Abstract**

This study examined the relationship between social anxiety, self-esteem, and alcohol expectancies in regard to alcohol consumption. These variables have been noted to alter the amount of alcohol consumed, but have yet to be examined together. Gender, relationship status, and age were also examined in separate analyses. Participants (N-132) were recruited via purposive sampling, as only adults were permitted to partake, through the publication of an online survey. Multiple regression was used to determine if there was such link, though this proved to be insignificant for social anxiety, and self-esteem. Alcohol expectancies, however, did yield a significant result, thus giving an indication of the underlying factors of problem drinking. Similarly, gender did have a significant effect on drinking, but age did not. Further implications are discussed throughout.

## 1. Introduction

Alcohol consumption continues to be a factor in the lives of many people, whether it be casual or problematic. It is very easily obtainable for adults, as it can be found in most supermarkets, restaurants, and even newsagents. The accessibility of alcohol can be argued as a negative societal norm, considering the addiction and health issues it can attribute to. This topic was chosen to assist in the identification of those with an increased vulnerability to abusing alcohol, and provide higher quality in understanding the underlying factors.

Alcohol consumption has steadily been on the rise for many years, particularly in Ireland. In 2015 it was reported that the amount of alcohol consumed per capita was 41 litres of vodka, 116 bottles of wine or 445 pints of beer during the year. This figure applies to people over the age of 15. However, the figure increases even more when it is taken into consideration that one fifth of the population abstains from alcohol. When only those who do drink are included, the figure is 46 bottles of vodka, 130 bottles of wine, or 498 pints of beer. Following this worrying trend, it has been reported that over half of 18-75 year olds in Ireland, 54%, are classified as “harmful drinkers”. Another 21.1% engage in binge drinking, consuming more than 6 drinks in one sitting, at least once a week. Going even further, 64.3% of 18-24 year olds engage in binge drinking during a typical drinking session. It has also been indicated that there were between 149,300 and 203,897 dependent drinkers aged 18–75 years in Ireland in 2013 (AlcoholIreland, n.d.). This immensely powerful data displays just how common alcohol consumption is, and the abuse of it. It cannot be stressed enough how much research examining the underlying factors behind these statistics is necessary in order to provide essential treatment. Social anxiety, self-esteem, and alcohol expectancies have been chosen for this study. Research investigating similar theories and aspects has previously been conducted.

## 1.1: Self-Esteem

The idea that self-esteem is a factor relating to alcohol consumption is long withstanding. Previous research has attempted to identify a correlation between the 2. One such piece is by Glindemann, Geller, and Fortney. In 1999, 44 college students were selected to participate in their experiment. These students consisted of 29 males, and 15 females. The aim of the study was to find an inverse correlation between self-esteem and alcohol consumption. Two weeks prior to a fraternity party, the participants were given self-esteem questionnaires. This inventory used 12 items, that were ranked on a 5-point Likert scale. Once participants left the party, they were breathalysed to determine their blood alcohol concentration (BAC) as a means of judging their intoxication. The findings suggested that those with lower levels of self-esteem had double the BAC, with .126, than those with high levels of self-esteem, who had a mean BAC of .60. Using multiple regression, self-esteem was found to have accounted for 27.1% of the variance of the BAC post-party (Glindemann, Geller & Fortney, 1999, p. 60-71). This conclusion has provided support for the theory of self-esteem pertaining to alcohol consumption. However, the work is not without its flaws.

Firstly, the sample. The sample is fairly small and, therefore, outliers have greater effect on the overall result. The sample also contains much more men than women, and as previous research that will be discussed further on has implied, men tend to consume more alcohol. This could also have skewed the result. Next, the study only examines these students' consumption in one environment. With this setting being a fraternity party, it is plausible to believe that this may have caused students to either experience greater self-esteem or lower self-esteem, which may have caused them to drink either more or less than they typically would have, and could have also affected the results. Events of this like are also stereotyped for resulting in people drinking more than they typically would. The environment is different from the one where participants received their questionnaires, so

answers may have differed if they had answered it at a party. The initial measuring of self-esteem to the measuring of BAC has a relatively large time gap. During this time, it could be possible for levels of self-esteem to alter. A strength of this study, is the accurate measuring of alcohol intake. Participants often inaccurately self-report, whether unintentionally or purposefully, so the use of a breathalyser provides confidence that the data collected is precise. Despite the discrepancies, this research has overall provided valuable insight into drinking habits, and the vulnerabilities that can affect this.

## 1.2: Social Anxiety

Social anxiety is one of the most frequently diagnosed disorder, after alcohol abuse and depression. It has previously been estimated that 13% of the Irish population suffer from this disorder (Social Anxiety Ireland, n.d). On top of this, it is also unfortunately common for people with social anxiety to also have an alcohol addiction or dependence. Around 1 in 5 patients with social anxiety abuse alcohol (Book & Randall, 2002, p. 130-135). The reason behind this is thought to be that people with social anxiety will attempt to self-medicate using alcohol, as they believe it has properties that will lessen their anxiety (Book et al, 2013, p. 252-258). Examining the factors behind social anxiety in 421 adolescents between the ages of 14-19, looked at several relationship variables. Romantic relationships were discovered to help prevent social anxiety in this sample, as was having a best friend with positive qualities (Greca & Harrison, 2001, p. 49-61). One theory as to why alcohol is chosen to reduce the feelings of anxiety is the tension reduction hypothesis. This theory explains alcohol as a negative reinforcer. While someone is experiencing their anxiety, something that is negative, consuming alcohol can diminish this, and become a reinforcer. This reinforcement acts as a cycle, as the more it is turned to as a solution, the more likely it will be used again. This paired with the positive expectancies that alcohol will actually assist in overcoming their anxiety, whether it is viewed as a short or long-term solution, encourage this drinking to

become more, and more frequent, eventually leading to dependency or addiction in some cases. Book and Randall explain this concept magnificently “alcohol use is one of their primary means of coping. It is possible that positive expectancies—beliefs that alcohol will relieve social anxiety, whether supported in fact or not—play a role in the relationship between social anxiety and alcohol use” (Book & Randall, 2002, p. 130-135).

### 1.3: Social Anxiety and Alcohol Expectancies

As stated previously, sufferers of social anxiety have an increased likelihood of consuming alcohol. This combined with positive expectancies of alcohol in social situations may result in a larger quantity of alcohol intake. Evidence for this has been displayed through past studies on the topic. For example, research conducted using 118 undergraduate students used the Social Phobia Scale (SPS), the Social Interaction Anxiety Scale (SIAS), the Comprehensive Effects of Alcohol Questionnaire (CEOA), the revised Situational Confidence Questionnaire-39 (SCQ-R), and the Alcohol Use Disorder Identification Test (AUDIT) to measure the relationship between self-efficacy, social anxiety, and alcohol expectancies as predictors of heavy drinking. A significant 3-way interaction effect was identified following analysis. Interestingly, social anxiety was not found to be correlated with the AUDIT amount or frequency of drinking, neither did it correlated with self-efficacy for the ability to refuse heavy drinking and alcohol expectancies together, though the latter were correlated to each other (Gilles, Turk & Fresco, 2006, p. 388-398). Another study with 454 participants, who were all young adults, inspected the role of social anxiety, alcohol expectancies, and reward sensitivity in consuming alcohol. Regression analysis was conducted, and a significant, positive relationship between reward sensitivity, expectations of tension reduction and increased confidence, and alcohol consumption. The researcher expressed that it was the tension reduction sub-scale of the alcohol expectancies questionnaire that moderate the relationship between social anxiety and alcohol consumption

(Booth & Hasking, 2009, p.730-736). Taking a different approach than alcohol expectancies, social anxiety and drinking motives were the predictor variables in a 2007 study. Two hundred and thirty-nine participants were divided in 3 groups. These groups were classified as high (83), moderate (90), and low (66) anxiety. These groups were discovered to not significantly differ in terms of coping mechanisms or conformity drinking motives. Against the usual findings, social anxiety also was not significantly related to weekly alcohol consumption or any alcohol related issues. Post hoc results found that coping techniques were correlated to both of these factors, within every group (Ham, Bonin, & Hope, 2007, p. 991-1003). This finding could be in conjunction with the tension reduction hypothesis. It implies that it may not be social anxiety itself that causes an increase in drinking, but rather the assumption that alcohol will relieve it.

#### 1.4: Gender

It has been long documented that men have reported to consume larger quantities of alcohol than women. Research by Wilsnack et al concluded that men drink more frequently than women, and more alcohol in one sitting. They also found that women are more likely to abstain from alcohol than men, and these findings did not change with an increase in age. In fact, there were more instances of drinking among the older age brackets, particularly with men (2009, p. 1487-1500). This difference continuously appears in research on alcohol abuse. A study examining 1316 Caucasian and black participants looked at several factors that may lead to alcohol abuse. These variables included stressors, alcohol expectancies, coping techniques. The study included 510 men, and 806 women from New York, who were randomly selected from their residency. The age range was from 19-87, with the mean age landing on 40.2 years old. Just under half of participants were married, 46.4%, and over half were employed. Another half received more than a high school degree. The data was

collected by 27 interviewers who partook in 5 days training on how to administer the interview, general interviewing skills, and study specific procedures. Each participant was paid an incentive of \$25. The interview process took roughly 90 minutes, and was conducted over summer and autumn in 1986 (Cooper et al, 1992, p. 139-152). One of the measures it used was the Alcohol Expectancy Questionnaire by Rohsenow (1983). The 6 sub-scales used were global positive, social and physical pleasure, social expressiveness, aggression and power, sexual enhancement, and relaxation and tension reduction. Following analysis, it was discovered that both genders drank significantly more if they had positive expectations for doing so. This also has led to seeing an increase in alcohol related problems for the same reason. While it was significant for both genders, men had a stronger correlation with alcohol expectancies and alcohol consumption (Cooper et al, 1992, p. 139-152).

### 1.5: Age

Leigh and Stacy recruited 2875 participants in the United States. Participants' ages went from 12 years old up. These people were selected as part of a multi-stage area probability sample of the household population. Forty-eight states were utilized as part of this selection process. The data collected was part of the National Alcohol Survey. The measurements that were brought into service looked at drinking habits, which involved frequency, quantity, frequency of drunkenness, and maximum quantity. It also explored the beliefs about the effects of alcohol in line with alcohol expectancies. In conclusion, it was found that alcohol expectancies accounted for a larger variance of the younger participants, and were less useful in predicting habits of those in an older age group. When suppression effects were considered, they believed that positive outcome expectancies predicted drinking more successfully in the younger groups, whereas negative expectancies did not. This was found inversely with the older age groups as well. Overall, the positive expectancies were a

more accurate source of prediction (2004, p. 215-227). This gives a glimpse at the potential for there to be difference factors predicting alcohol consumption for different age ranges. While relatively vague at present, further investigation into these factors, and how ages are affect differently could be a benefit in interventions. Self-esteem also seems to fluctuate with age. A longitudinal study was conducted involving 4 assessments across a 16-year period of a nationally representative sample of 3,617 participants. These individuals were aged between 25 and 104 years old. The results from this found a curve of self-esteem that grew until it peaked at around age 60, and then began to decline. Lower self-esteem was more common in women than in men (Orth, Trzesniewski, & Robins, 2010, p. 645-658).

#### 1.6: Rationale

As shown through the data and literary reviews aforementioned, alcohol consumption has been seen to be altered by levels of social anxiety, self-esteem, and alcohol expectancies. Other variables such as gender are also a factor. This research is being conducted as, while these variables are frequently seen to be a cause, there have not been examined together. Thus, it is plausible to consider that these factors may all have a say when it comes to consumption. Narrowing down underlying factors behind troublesome drinking is essential. The figures shown above clearly demonstrate the problem drinking crisis in Ireland. Determining what may cause a person to engage in such behaviour could provide the necessary interventions. Those with social anxiety, and/or low self-esteem could receive information about the facts behind self-medicating using alcohol. For those already doing so, better treatment could be provided to combat this. Rather than observing a patient's social anxiety, for example, and their alcohol dependence as 2 separate issues that need to be tackled individually, therapists could focus on treating the social anxiety, which in turn will reduce alcohol consumption. The inclusion of gender gives an even more specific guideline

as to who is at an increased risk for alcohol related issues. The alcohol expectancies only includes 3 sub-scales of the questionnaire. Global positive, social expressiveness, and social and physical pleasure were chosen as they relate more so to the other 2 scales, giving this research a focus on the more social aspect of consuming alcohol. Should self-esteem play a significant role in moderating alcohol consumption, identifying further who is most at risk would be invaluable. For this reason, the 7 age categories are compared for their levels of self-esteem.

### 1.7: Hypotheses

*Hypothesis 1:* Low self-esteem, high social anxiety, and positive expectancies for alcohol will predict a higher instance of alcohol consumption.

*Hypothesis 2:* There will be a difference in self-esteem, and alcohol consumption between males and females.

*Hypothesis 3:* There will be a significant difference in self-esteem levels between age categories.

*Hypothesis 4:* There will be a significant difference between levels of social anxiety, and relationship status.

Hypothesis 1 is one-tailed, as it is predicting that as self-esteem lowers, and social anxiety and alcohol expectancies increase, there amount of alcohol will also increase. Hypothesis 2, 3, and 4 are two-tailed.

## 2. Methodology

### 2.1: Participants

Participants consisted of 132 adults, which consisted of 86 (65.15%) females, and 46 males (34.85%). Anyone over the age of 18 was invited to take part in this study, to the exclusion of minors. This is due to the investigation examining the reasons in consuming alcohol legally, and not the factors that may encourage adolescents to obtain and drink alcohol. Participants were recruited through purposive and snowball means, as the survey was published online which then resulted in several people who saw this, also sharing the link to their contacts. Completing this questionnaire was voluntary, and random selection was used. Potential participants were informed of the anonymity involved, and were required to specify that they consented to continuing. No incentive was offered. As per the categorisation of age, the range from which participants could choose from was 18-63+. The group “18-26” was the most popular, and was responsible for 49.24% of the sample.

### 2.2: Apparatus

As required to create and send this survey, several pieces of equipment were employed. The website GoogleForms was used to build the survey on. Next 2 pieces of software were necessary. These included IBM SPSS 24, and Microsoft Excel.

### 2.3: Materials

The online survey creator, “Google Forms”, was employed in the creation of the survey, as well as the distributing of said survey. The layout consisted of a cover sheet providing information, and requesting consent. It also included contact details for the researcher and supervisor should there be any further questions. There were 6 pages to complete, with the first section of questions involving gender, age, marital status, and level of

alcohol consumption. Gender could be selected as either female or male. Age was divided into 6 options to choose from, including 18-26, 27-35, 36-44, 45-53, 54-62, and 63+. Similarly, marital status was also split into 6 different options, such being single, married, divorced, widowed, in a relationship, and separated. Finally, the units of alcohol consumed in a typical week was asked. A reference image was included that displayed the units of popular drinks. Following this section, 3 more were to follow, with these questionnaires being the Rosenberg Self-Esteem Scale in full, the interaction anxiety portion of Leary's social anxiety scale, and 3 sub-scales from the Alcohol Expectancies Questionnaire (AEQ-2).

*Rosenberg Self-Esteem Scale-* This scale was selected due to its consistent reliability in psychology for examining the matter. It is a 10-item survey consisting of questions such as "I wish I could have more respect for myself.". The Likert scale is used for scoring this survey, with participants having 4 options to select from in regard to how much each statement applies to them. These options range from "strongly agree" to "strongly disagree". Reverse scoring is necessary on half of the statements. (Rosenberg, 1965). It has a test-retest reliability of .85 (StatisticsSolutions, n.d.). Cronbach's alpha has shown to be .86 (Vermillion & Dodder, 2007, p. 416-418).

*Interaction Anxiousness Scale:* This scale is part of an overall view of social anxiety. Included as an extension to this is the Audience Anxiousness Scale, which has been omitted in this case. This scale contains 15 statements such as "I wish I had more confidence in social situations". Recipients of this scale are required to answer how true or characteristic each statement is to them, using a 5-point scale of "not at all", "slightly", "moderately", "very", or "extremely characteristic". Reverse scoring is required for statements 3, 6, 10, and 15. The interaction anxiousness element was chosen as it more focused on everyday situations, whereas the audience anxiousness measure is only applicable to what would be considered as

rare instances for many people, and therefore less likely to be a catalyst of alcohol consumption. Its statements includes “My thoughts become jumbled when I speak before an audience”. The interaction scale also has a significant correlation with the Rosenberg Self-Esteem Scale (Leary, 1983, p. 66-75). Reported validity for the interaction anxiousness scale is .87 Cronbach’s alpha (Qiu, Han, Zhai, & Jia, 2017, p. 78-85).

*Alcohol Expectancies Questionnaire (AEQ-2)*- This is revised, shortened form of the Alcohol Expectancies Questionnaire. While the original contains 90 questions, this version contains 40. However, this was shortened to 15 for the use in this study, as only 3 sub-scales were selected. The original possesses 8 sub-scales, Global Positive, Power & Aggression, Careless Unconcern, Social Expressiveness, Relaxation & Tension Reduction, Cognitive & Physical Impairment, Sexual Enhancement, and Social & Physical Pleasure. The 3 that were chosen for this study were Global Positive, Social & Physical Pleasure, and Social Expressiveness. Participants were required to check “Agree” if they felt a statement sometimes or always matched them, or “Disagree” if they believed that alcohol never produced the effect in question. They were then required to rate their answer from 1 to 10, in regards to how little or how much they believed their answer was accurate. Statements contained phrases such as “Drinking gives me more confidence in myself”, which is an example of a Social Expressiveness statement. Scoring this questionnaire involves calculating the ratings given for every statement that is marked with “Agree”. This scale was developed by Rohsenow, after revising the original alcohol expectancies questionnaire by Brown, Christiansen, and Goldman (1987, p. 483-491). It is also referred to as to Alcohol Effects Questionnaire. Cronbach’s alpha for global positive, social and physical pleasure, and social expressiveness has been reported as .85, .85, and .92, respectively (George et al, 1995, p 177-185).

## 2.4: Design

This study is of a correlational design as it examined the relationship between factors such as self-esteem, social anxiety, and alcohol expectancies with alcohol consumption. Though other hypotheses are of a quasi-experimental design. It is entirely quantitative by nature. The correlational aspect of this research is employing the same group of participants when analysing each variable. The quasi-experimental element is involved in factors involving naturally selected groups, such as gender, and does not have manipulation over the independent variables. The predictor variables used for the main research hypothesis is the social anxiety, self-esteem, and alcohol expectancies. The criterion is the amount of alcohol consumed. Independent variables also examined in further hypotheses are gender, age, and relationship status. The dependent variables are, alcohol consumption, mean social anxiety, and mean self-esteem. Hypotheses 1 predicts that there is an inverse correlation between alcohol consumption and self-esteem, and positive correlations between alcohol consumption, and social anxiety and alcohol expectancies. Due to this, it is considered a one-tailed hypothesis. The remaining 3 hypotheses are two-tailed, as they predict difference but do not assume the direction in which the will occur. The data for the variables required were collected using self-reported measures,

## 2.5: Procedure

To start this research, it was first approved by the ethics board at Dublin Business School. Following this, a survey was created using GoogleForms. This involved compiling the questionnaires used, and creating an appropriate layout for each. A “thank you” note was also added for participants who had either completed the survey or did not consent in taking part. A pilot study was first run in order to establish an estimate time for completion, as well as to ensure the layout was correct, and to locate any errors. A link was posted onto

Facebook, and sent via WhatsApp with a brief explanation as to what the link regarded. When clicked, this link brought participants to GoogleForms where they were greeted with the cover sheet. This cover sheet gave a detailed explanation about the purpose of the study. Confirmation was provided as to the anonymity that each person would receive, and that answers would be stored on a password protected computer. They were also informed that this data could not be retracted following submission, as it would be impossible to trace their response, though it would be deleted alongside every other response following analysis. An option to consent, or opt out was included at the bottom of this page, with the answer taking the participant to the survey if they consented, or the “thank you” note if not. There were 34 questions asked, excluding the 15 add-ons to the alcohol expectancies section for rating the answers. An image from Alcohol and You (n.d.) outlining the units of alcohol in 8 drinks was included for participants to calculate their consumption. Completing the survey took participants around 5-10 minutes. Upon completion, or lack of consent, participants received the contact details of 3 organisations that may be helpful should the research have caused any negative feelings. These services included Alcoholics Anonymous, AI-Anon Alanteen, and Samaritans. These organisations assist those suffering from an alcohol related issue, those who have a family member or friend with an alcohol related issue, and those experiencing emotion distress, respectively. The survey was then taken offline, following a brief amount of time, and responses were downloaded via Excel. The Excel sheet was coded before being transferred to IBM SPSS 24 for further coding and analysis.

## 2.6: Ethical Considerations

As mentioned above, this study was approved by the ethics board at Dublin Business School. There was no major distress or harm expected to occur to participants. Participants were briefed prior to commencing the study. This included assurances that information was

completely anonymous, that no one other than the researcher, and relevant supervisor would have access to the data collected, and that data would be stored on a password protected device. No deception was involved in this study, neither was any incentive. Should any participant have felt emotional distress from answering any of these questions, or was made feel uncomfortable mentioning alcohol consumption, organisations offering assistance for these issues were included with their contact information.

### 3. Results

A validity check was performed on the AEQ-2, which found Cronbach's alpha to have a value of .89. With an age range of 18-63+, a total of 132 participants completed this study. This consisted of 86 (65.15%) females, and 46 males (34.85%). Of the 7 age categories, the 18-26 group had a much larger amount than any other. It accounted for 49.24% of the sample, whereas the second most common age range was only 16.66%. This is displayed in Table 1 below. Fifty-two single people participated in this study, the most common relationship status at 39.39%. The response with the fewest responses was "widowed", which accounts for .76% of the sample, with just 1 response.

Table 1: Age Categories

| Categories | Mean  | SD    | N   |
|------------|-------|-------|-----|
| 18-26      | 9.99  | 13.80 | 65  |
| 27-35      | 7.97  | 8.95  | 9   |
| 36-44      | 9.07  | 10.06 | 22  |
| 45-53      | 13.31 | 11.68 | 21  |
| 54-62      | 9.77  | 8.92  | 13  |
| 63+        | 19    | 15.56 | 2   |
| Total      | 10.34 | 12.14 | 132 |

*Hypothesis 1:* Low self-esteem, high social anxiety, and positive expectancies for alcohol will predict a higher instance of alcohol consumption.

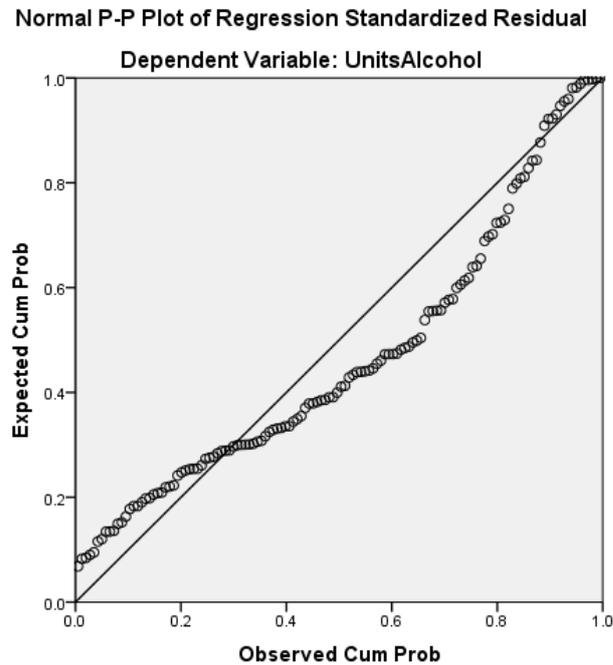
Multiple regression was used to investigate this hypothesis. This requires 15-40 participants as part of the sample per variable. As 132 were recruited in this instance,

this assumption was met. A scatter plot, Figure 1, is included below to demonstrate the distribution. VIF reported at 1.09 at its lowest, and 1.45 at its highest, while tolerance was at .69 and .91 respectively. However, the Pearson's correlation assumption was not met as independent variables did not correlate with alcohol consumption above .3. This is displayed in Table 2, below. Upon completing a multiple regression analysis of the variables social anxiety, self-esteem, alcohol expectancies, and alcohol consumption, the test concluded that the predictors explained 12.7% of the variance ( $F(3, 128) 7.37, p < .001$ ). It concluded that social anxiety did not accurately predict alcohol consumption ( $\beta = -.26, p = .01, 95\% \text{ CI} = -7.12-.99$ ), though neither did self-esteem ( $\beta = -.16, p = .1, 95\% \text{ CI} = -7.48 - .67$ ). Alcohol expectancies, however, were found to significantly correlated with alcohol consumption ( $\beta = .26, p = .003, 95\% \text{ CI} = .11-.52$ ). A Spearman's Rho test was conducted as the multiple regression did not meet all of the assumptions. This found significant relationships between social anxiety ( $r_s(132) = -2.9, p = <.01$ ), and self-esteem ( $r_s(132) = -2.3, p = <.01$ ) with alcohol consumption.

Table 2: Pearson's Correlation

| Pearson's<br>Correlation | UnitsAlcohol | MeanSE | MeanSA | MeanExp |
|--------------------------|--------------|--------|--------|---------|
| UnitsAlcohol             | 1.00         | -2.36  | -2.75  | .147    |
| Mean SE                  | -2.36        | 1.00   | .54    | .25     |
| Mean SA                  | -2.75        | .54    | 1.00   | .27     |
| MeanExp                  | 1.47         | .25    | .27    | 1.00    |

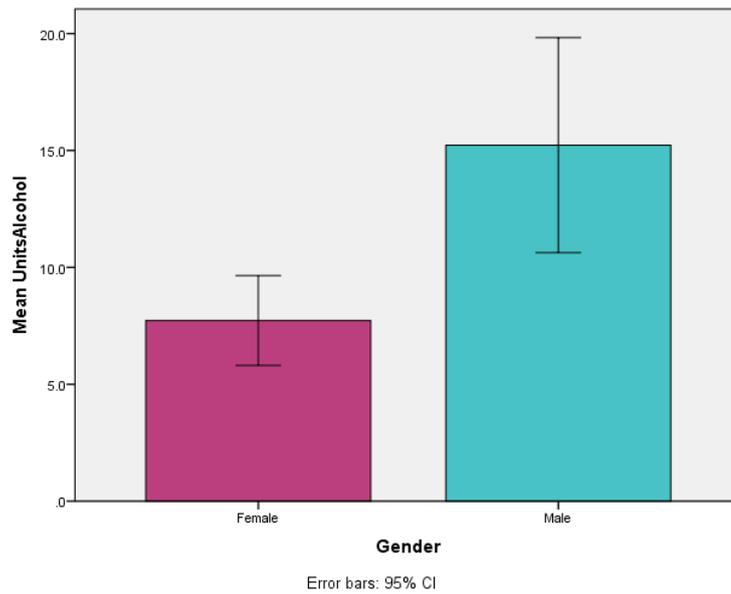
Figure 1: Distribution



*Hypothesis 2:* There will be a difference between males and females, and between relationship status in regards to alcohol consumption.

First, an independent samples t-test was run to examine if there was a relationship between gender and alcohol consumption. It found that there was a statistically significant difference in the amount of alcohol consumed between males ( $M = 15.23$ ,  $SD = 15.48$ ) and females ( $M = 7.27$ ,  $SD = 8.96$ ) ( $t(130) = -3.53$ ,  $p = .001$ ,  $CI(95\%) -11.71 < -3.30$ ). Therefore the null can be rejected. A two-way between groups ANOVA was conducted as part of analysing the data for this hypothesis. It examined the role of gender and relationship status on levels of alcohol consumption and found no significant interaction effect ( $F(5, 122) = 2.22$ ,  $p = .09$ ). However, a main effect was reported for gender ( $F(5, 122) = 6.97$ ,  $p = .01$ ). A bar chart shown on the next page, Figure 2, demonstrates the difference between genders with alcohol consumption.

Figure 2: Gender and Alcohol Consumption



*Hypothesis 3:* There will be a significant difference in self-esteem levels between age categories.

A one-way analysis of variance showed that the level of self-esteem differed significantly between the 7 age groups ( $F(5, 126) 4.80, p < .001$ ). More specifically, post hoc Tukey HSD analysis highlighted that the 18-26 category, and the 45-53 range significantly differed. Table 3 displays the mean, standard deviation, and significance between the groups, calculated during post hoc analysis.

Table 3: Post Hoc of Age

| Age   | Age   | Mean Difference | Significance |
|-------|-------|-----------------|--------------|
| 18-26 | 27-35 | .49             | .10          |
|       | 36-44 | .31             | .19          |
|       | 45-53 | .50             | <.05         |
|       | 54-62 | .45             | .08          |
|       | 63+   | .79             | .331         |
| 27-35 | 18-26 | -.49            | .10          |
|       | 36-44 | -.19            | .95          |
|       | 45-53 | .00             | 1            |
|       | 54-62 | -.05            | 1            |
|       | 63+   | .29             | .98          |
| 36-44 | 18-26 | -.31            | .19          |
|       | 27-35 | .19             | .95          |
|       | 45-53 | .19             | .85          |
|       | 54-62 | .14             | .98          |
|       | 63+   | .48             | .84          |
| 45-53 | 18-26 | -.50            | <.05         |
|       | 27-35 | -.00            | 1            |
|       | 36-44 | -.19            | .85          |
|       | 54-62 | -.05            | 1            |
|       | 63+   | .29             | .98          |
| 54-62 | 18-26 | -.48            | .08          |
|       | 27-35 | .05             | 1            |
|       | 36-44 | -.14            | .98          |
|       | 45-53 | .05             | 1            |
|       | 63+   | .34             | .96          |
| 63+   | 18-26 | -.79            | .33          |
|       | 27-35 | -.29            | .98          |
|       | 36-44 | -.48            | .84          |
|       | 45-53 | -.29            | .98          |
|       | 54-62 | -.39            | .96          |

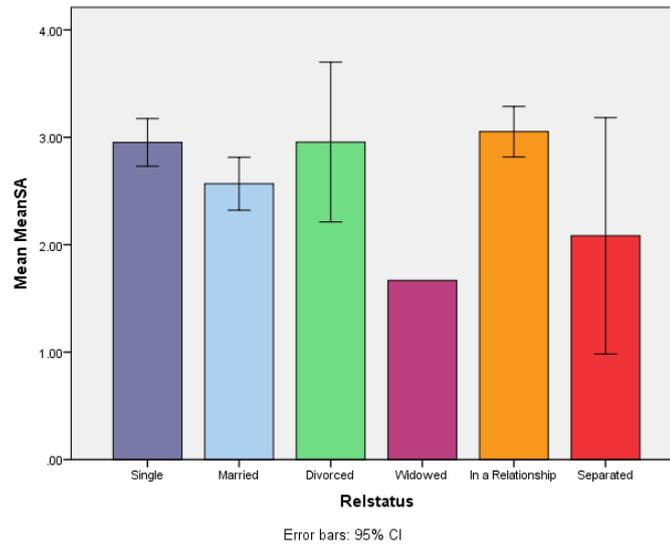
*Hypothesis 4:* There will be a significant difference between levels of social anxiety, and relationship status.

A one-way analysis of variance displayed that the levels of reported social anxiety differed significantly between the 6 relationship statuses ( $F(5, 126) 2.95, p = <.05$ ).

No post hoc analysis were run due to the “widowed” category only having one

response. Figure 3, included below, shows the differing levels of social anxiety between the categories.

Figure 3: Social Anxiety and Relationship Status



## 4. Discussion

### 4.1: Findings –

Hypothesis 1 – It was hypothesised that low self-esteem, high social anxiety, and positive expectancies for alcohol will predict a higher instance of alcohol consumption. However, it was found that only one variable, alcohol expectancies, significantly predicted alcohol consumption. Due to only a singular variable meeting this expectation, the research hypothesis is rejected.

*Hypothesis 2* – Hypothesis 2 investigated whether there will be a difference between males and females, and between relationship status in regards to alcohol consumption. Through the use of a two-way between groups ANOVA, it was discovered that while gender did affect alcohol consumption, there was no significant finding for relationship status. Therefore, the null hypothesis is accepted.

*Hypothesis 3* – This hypothesis predicted that there will be a significant difference in self-esteem levels between age categories. After conducting a one-way analysis of variance, it was discovered that there is a significant difference in mean self-esteem between the 18-26 and 44-53 age ranges. In this case, the research hypothesis is accepted.

*Hypothesis 4* – Finally, the fourth hypothesis aimed to establish that there will be a significant difference between levels of social anxiety, and relationship status. Following a one-way analysis of variance, a significant result was found. However, the exact cause for the significant result was not located, neither was any significant differences between each category. This was due to the “widowed” category only receiving 1 response, which is not considered statistically significant. The decision to retain this category was made regardless as half of the categories have very low response rates. As only 4 people selected “separated”, and 6 selected “divorced”, the data was to be skewed due to uneven numbers. Instead,

choosing to focus on the other 3. While not able for analysis, the “widowed” response instead serves as a reference for what may be expected, as it does provide some insight into the social anxiety levels experienced by a widow.

#### *4.2: Comparisons with Previous Research*

In the introduction, the background to the reasoning behind this study were highlighted. These included the regularly reported relationship between social anxiety, self-esteem, and alcohol expectancies with alcohol consumption. Other factors such as gender were also noted. The main hypothesis of this study failed to replicate the majority of these findings. Granted, the multiple regression failed to meet 1 of the assumptions, though it did find a positive correlation between alcohol consumption and alcohol expectancies. This supports past studies, such as the study conducted by Cooper et al (1992, p. 139-152). A Spearman’s Rho test did find a significant interaction between social anxiety, self-esteem, and alcohol consumption, which also matches the findings of past studies. Though previous research has also suggested that it is not social anxiety that causes alcohol consumption. It is the positive expectancies of doing so that may be the reason behind it. In this case, finding a correlation from the alcohol expectancies variable would reinforce this idea. Especially considering that the sub-scales selected in this study are the social and global options. Gender has also been explored in previous research, with men consistently being significantly more likely than females to drink more often, and in larger quantities. Alcohol expectancies is thought to be linked with this connection. This study supports this finding, as males were significantly found to consume more alcohol than women ( $t(130) = -3.53, p = .001, CI(95\%) -11.71 < -3.30$ ) through the use of an independent samples t-test. A dip in self-esteem was noticed from running a one-way analysis of variance, though it was seen in a younger age category than what was suggested in previous search. The significantly lower self-esteem

came from the 45-53 category, rather than the 54-62 or 63+ options. This may have been caused by some age categories, such as the 63+ having much lower numbers. However, it does add to the evidence that younger age categories have higher levels of self-esteem. Though, interestingly, the 18-26 year olds reported significantly higher levels of self-esteem, whereas they were almost completely negated in the 2010 study, with the youngest participant being 25. (Orth, Trzesniewski, & Robins, 2010, p. 645-658). This addition to the previous research has given some evidence that to go younger again when recruiting participants may lead to finding more statistically significant differences. Examining as large of an age range as possible will provide maximum likelihood of developing a self-esteem curve throughout the lifespan.

#### *4.3: Implications*

This research provided mixed results, in terms of finding significant results for the research hypotheses. It was expected that social anxiety, and self-esteem would have a link to alcohol consumption, though this was not the case for this specific research. While this does not conclude that previous research, on either side of the debate, is incorrect, it has provided some evidence. Gender and alcohol expectancies were both shown to have a relationship with drinking. Interestingly, the alcohol expectancies scales used were those related to social issues, and what alcohol could do as a whole. At first glance, this makes it unusual that it was significant while social anxiety was not. Though, this has been reported before, and was discussed in the previous section. This may provide some evidence that it is not social anxiety per se that alters drinking behaviours, but the expectancy of what it may do for social behaviours. Furthermore, there was a significant difference in the average self-esteem levels and age. The 18-26 year old category scored significantly higher in regards to self-esteem than the 45-53 year olds. This result has established that there may be a deterioration of self-

esteem with increasing age. However, as will be discussed further below, there is a very large difference between the amount of participants in each bracket. These results would not be applicable alone for certain categories that only had a couple of representatives. Even so, what is found may be useful in providing interventions. As someone is aging, it may be noteworthy that an decrease in self-esteem could cautiously be expected.

#### *4.4: Strengths and Weaknesses*

A strength located in this research is the broader population examined. In previous research, such as the one by Glindemann, Geller, and Fortney, have a tendency to focus solely on college students, to the exclusion of all others. While it is not questioned that alcohol consumption is common among students, it completely negates the large proportion of people, especially when regarding issues such as social anxiety, and self-esteem, which have the capability of affecting anyone. This study includes all adult ages, only to the exclusion of those under 18. It provides a much wider look at how these factors can alter people's behaviours. On the same note, the Glindemann et al study only focused on one set of college students, from one college. Due to this, it is arguable that these participants may provide a certain string of results as they are all currently in the same situations one another. This study examined adults from any background, so it is highly unlikely that anything more than a handful of participants came from the same circumstances.

Over the duration of the research, and throughout analysis, several discrepancies emerged that may have affected the overall results found. Firstly, there was large differences within the gender, age, and relationship status variables. As mentioned previously, men only accounted for 34.85% of the sample. Having such a large gap may have skewed the data. More noticeably, age and relationship status have major differences between their categories. The 18-26 year old bracket accounted for nearly half of the sample, despite there being 6

other categories. Sixty-five people in this age range completed the survey, whereas only 2 people in the 63+ group did. Worse again, only 1 person reported being widowed. Such a massive difference in the ages may have easily swayed the results. Disregarding the differences between the categories, having only 2 participants in the 63+ group makes the analysis of their data to be taken with caution, as it is not enough to accurately represent this age. This issue is again seen in the relationship status variable. Fifty-two participants stated that they are single, whereas only 1 claimed to be widowed. This result is could hardly be viewed as an accurate, or fair, comparison collecting data from 1 person compared to 52.

Another discrepancy is the inaccuracy of reported units of alcohol consumed by participants. When examining the data, it is apparent that those who reported higher numbers were less likely to give specifics. While lower numbers typically contained a decimal point, this was absent from the vast majority of higher number answers. As it is unlikely that a decimal place would not be included for so many of such a specific, and for a lot more consumption, it would be rational to conclude that those who reported lower numbers paid closer attention to the reference image and therefore gave a more representable answer. Lastly, as one of the assumptions for multiple regression was not met, the results should not be considered as empirical evidence.

#### *4.5: Future Directions*

This research has added to the debate on whether social anxiety, and self-esteem can predict alcohol consumption. As this area has continuously yielded inconsistent results, it would be pivotal to examine a more detailed approach for each variable, rather than social anxiety in general, for example. This may solve where the previously discovered link becomes relevant. Doing so could provide more accurate, and more successful interventions and treatments to sufferers of these conditions. Replication of this study may be done, with

some alterations to provide a more complete view. As there was a significant result found for alcohol expectancies regarding social expectancies, whereas this was not seen with social anxiety itself, researchers should include a more in depth look at the force behind social anxiety that may lead one to consume alcohol. This could be done by examining different scenarios in which social anxiety may worsen, and establish if there is a difference between environments. For example, someone may feel social anxiety when in their place of employment but will not lean towards drinking to overcome their anxiety, but that same person may resolve to drinking at a party purely to ease their social anxiety. This could explain the significant result from the alcohol expectancies, and it does touch on circumstances like this, "Alcohol makes it easier for me to talk to people". As alcohol expectancies might be the genuine reason behind the reported alcohol dependence linked to suffers of social anxiety, future research should consider the inclusion of the relaxation and tension reduction sub-scale of the AEQ-2. Not only would this be the purpose of the alcohol, but the scale was found to have a significant effect in Booth and Hasking's study on the matter (2009, p.730-736). While self-esteem could be considered more grounded, and less flexible than social anxiety, it is possible that the same idea of environments. This is particularly relevant in situations where people have the opportunity to compare themselves to others. Further research into the difference in self-esteem between age categories is required, as the sample analysed as part of this research is too small in some categories to be considered significant. Categories could even be made smaller for a result with much greater specificity.

#### *4.6: Conclusion*

Overall, this study provided a mix of supporting previous research, and disagreeing

with it. While it has been widely shown that self-esteem can affect the levels of alcohol consumption, it has failed to make a significant effect here. Social anxiety has displayed the same trend, with an insignificant correlation to the units of alcohol consumed. However, the alcohol expectancies relating to social environments, and the overall positive expectancies of alcohol, social expressiveness, social and physical pleasure, and global positive did have a significant interaction effect. Displaying that social circumstances are linked to the amount one drinks. Equally, it was found that gender does have a significant effect, also. Both an independent samples t-test, and a two-way between groups ANOVA located this relationship, supporting the statistics that men consume more than women, on average. The other element within the two-way between groups ANOVA, relationship status, did not have a significant effect, neither did the 2 variables together. A one-way analysis of variance found that self-esteem differed between age ranges. In particular, the 18-26 category, and the 45-53 category had a significant difference, with the former reporting high levels of self-esteem. Another one-way analysis of variance discovered a significant difference between social anxiety levels, and relationship status.

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## Appendix A – Cover Sheet

Welcome,

My name is Katie Timmins, and I am currently conducting research in the Department of Psychology in Dublin Business School that is investigating factors contributing to alcohol consumption. These factors include social anxiety, self-esteem, and alcohol expectancies. This research is being conducted as part of my studies, and will be used for examination.

You are invited to take part in this study and participation involves completing and submitting the following anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

You must be 18 or older to participate. Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been submitted.

The data collected from this questionnaire will be securely stored on a password protected computer, and only myself and my supervisor will have access to the data before analysis.

Please note that by clicking "yes" to the question below that you are consenting to participating in this study. Throughout the study please ensure that you read the instructions included at the top of each section.

If you have any further questions or concerns, please contact Katie Timmins at xxxxxxxx@mydbs.ie. My supervisor may also be contacted at xxxxxxxx@dbs.ie.

## Appendix B – Questionnaires

### Section 1:

Are you male or female?

What age are you? 18-26

27-35

36-44

45-53

54-62

63+

What is your relationship status?

Single

Married

Divorced

Widowed

In a relationship

Separated

### Alcohol Units Guide

| ALCOHOL UNITS GUIDE   |   |   |   |
|---|---|---|---|
|  |  |  |  |
| Pint of beer (4%)<br>= 2.3 units  | Pint of cider (4.5%)<br>= 2.6 units   | Alcopop (4%/275ml)<br>= 1.1 units   | Can of beer (5%/330ml)<br>= 1.6 units   |
|  |  |  |  |
| Spirits e.g. vodka/<br>whiskey (40%/35ml)<br>= 1.4 units                            | Bottle of spirits<br>(40%/1 litre)<br>= 40 units                                    | Small 'pub' bottle of<br>wine (13%/187ml)<br>= 2.4 units                            | Bottle of wine<br>(13%/750ml)<br>= 9.8 units  |

How many units of alcohol would you consume during a typical week? (see image above for guidance)

**Section 2:**

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

1. On the whole, I am satisfied with myself.

Strongly Agree Agree Disagree Strongly Disagree

2. At times I think I am no good at all.

Strongly Agree Agree Disagree Strongly Disagree

3. I feel that I have a number of good qualities.

Strongly Agree Agree Disagree Strongly Disagree

4. I am able to do things as well as most other people.

Strongly Agree Agree Disagree Strongly Disagree

5. I feel I do not have much to be proud of.

Strongly Agree Agree Disagree Strongly Disagree

6. I certainly feel useless at times.

Strongly Agree Agree Disagree Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

Strongly Agree Agree Disagree Strongly Disagree

8. I wish I could have more respect for myself.

Strongly Agree Agree Disagree Strongly Disagree

9. All in all, I am inclined to feel that I am a failure.

Strongly Agree Agree Disagree Strongly Disagree

10. I take a positive attitude toward myself.

Strongly Agree Agree Disagree Strongly Disagree

**Section 3:**

Indicate how characteristic each of the following statements is of you according to the following scale:

1 = Not at all characteristic of me.

2 = Slightly characteristic of me.

3 = Moderately characteristic of me.

4 = Very characteristic of me.

5 = Extremely characteristic of me.

\_\_\_\_\_ 1. I often feel nervous even in casual get-togethers.

\_\_\_\_\_ 2. I usually feel comfortable when I'm in a group of people I don't know.

\_\_\_\_\_ 3. I am usually at ease when speaking to a member of the other sex.

\_\_\_\_\_ 4. I get nervous when I must talk to a teacher or a boss.

\_\_\_\_\_ 5. Parties often make me feel anxious and uncomfortable.

\_\_\_\_\_ 6. I am probably less shy in social interactions than most people.

\_\_\_\_\_ 7. I sometimes feel tense when talking to people of my own sex if I don't know them very well.

\_\_\_\_\_ 8. I would be nervous if I was being interviewed for a job.

\_\_\_\_\_ 9. I wish I had more confidence in social situations.

\_\_\_\_\_ 10. I seldom feel anxious in social situations.

\_\_\_\_\_ 11. In general, I am a shy person.

\_\_\_\_\_ 12. I often feel nervous when talking to an attractive member of the opposite sex.

\_\_\_\_\_ 13. I often feel nervous when calling someone I don't know very well on the telephone.

\_\_\_\_\_ 14. I get nervous when I speak to someone in a position of authority.

\_\_\_\_\_ 15. I usually feel relaxed around other people, even people who are quite different from me.

**Section 4:**

This questionnaire consists of a series of statements that describe possible effects following alcohol use. We would like to find out about your present beliefs about alcohol. Please read each of the statements and respond according to your experiences with a heavy (5 drinks or more per occasion) amount of alcohol. If you believe alcohol sometimes or always has the stated effect on you, check AGREE. If you believe alcohol never has the stated effect on you, check DISAGREE. Then, in section B below each question, fill in the number that best corresponds to the strength of your belief, according to the following scale: 1 = Mildly Believe 10 = Strongly Believe For example, if you strongly believe that alcohol makes you less shy, you would check AGREE and enter a "10" on the below scale. Please answer every question without skipping any. For a HEAVY (5 or more drinks per occasion) amount of alcohol

1A. Drinking makes me feel less shy.

1B. Mildly Believe \* \* \* \* \* Strongly Believe

2A. Drinking makes the future seem brighter to me.

2B. Mildly Believe \* \* \* \* \* Strongly Believe

3A. Drinking makes me feel good.

3B. Mildly Believe \* \* \* \* \* Strongly Believe

4A. Alcohol has a pleasant, cleansing, tingly taste to me.

4B. Mildly Believe \* \* \* \* \* Strongly Believe

5A. Alcohol seems like magic to me.

5B. Mildly Believe \* \* \* \* \* Strongly Believe

6A. When I'm drinking, it is easier to open up and express my feelings.

6B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

7A. Drinking adds a certain warmth to social occasions for me.

7B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

8A. If I'm feeling restricted in any way, drinking makes me feel better.

8B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

9A. Having drinks is a nice way for me to celebrate special occasions.

9B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

10A. Drinking is pleasurable because it's enjoyable for me to join in with other people who are enjoying themselves.

10B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

11A. I feel more coordinated after I drink.

11B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

12A. Drinking gives me more confidence in myself.

12B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

13A. Alcohol makes it easier for me to talk to people.

13B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

14A. If I have alcohol it is easier for me to express my feelings.

14B. Mildly Believe \* \* \* \* \* \* \* \* \* \*Strongly Believe

15A. Alcohol makes me more interesting.

15B. Mildly Believe \* \* \* \* \* Strongly Believe

## Appendix C – Contact Sheet

Thank you!

Your response has been recorded. This response is completely anonymous. Should this survey have caused any emotional distress, please see the contact details of relevant organisations below.

Alcoholics Anonymous helps those who have an alcohol addiction. If please contact (01)8420700 or, for those who are deaf or hard of hearing, text 0871460387.

AI-Anon Alateen offers support to those who are affected by another's drinking, such as family or friends. If this questionnaire has caused emotion distress in regards to this, please contact this service's helpline at (01)8732699. This is available from 10am-10pm everyday.

Samaritans also provides a helpline that is run 24 hours over 365 days for anyone experiencing emotional or psychological distress. Their contact number is 116 123.

If you have any questions regarding this study, please contact xxxxxxxx@mydbs.ie or xxxxxxxx@dbs.ie