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# **The Causal Effect of Alcohol Consumption on Employment Status**

by

Chanvuth Sangchai

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
Department of Economics  
College of Business Administration  
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# The Causal Effect of Alcohol Consumption on Employment Status

Chanvuth Sangchai

## ABSTRACT

Alcohol consumption may affect labor market outcomes directly through a reduction in productivity and indirectly through human capital accumulation. However, empirical results from previous studies in the economics literature are mixed and inconclusive. While some researchers found negative effects of alcohol use on labor market outcomes, quite a few studies found either positive or insignificant effects. The purpose of this dissertation is to estimate causal effects of alcohol consumption on employment status. It uses three data sets previously unexploited for this purpose and attempts to eliminate any potential estimation problems from previous studies. The results show that previous problematic heavy drinking, i.e. clinically-defined alcohol abuse and/or dependence, has no significant direct effects, but has significant indirect effects on current employment propensity for both genders through human capital components, specifically educational attainment and health status. While general alcohol consumption has only an indirect effect on employment status for females, it has both direct and indirect effects on employment status for males, though the direct effect is very small.

## 1. Introduction

Many researchers have attributed tremendous economic costs to alcohol consumption, and the U.S. federal government has used various public health policies to prevent and treat alcohol abuse. Nonetheless, alcohol prevalence rates in the U.S. have persistently been very high. As Table 1 shows, data from the National Household Survey on Drug Abuse (NHSDA) from the Substance Abuse and Mental Health Data Archive (SAMHDA) reveal that alcohol prevalence rates for past year and past month use ranged from 62–73 percent and 46–61 percent, respectively, during 1979–2001. The new versions of this survey, the 2002 and 2003 National Survey on Drug Use and Health (NSDUH), reveal similar rates of 66.0 percent and 65.3 percent for past year use and 51.0 percent and 50.4 percent for past month use. The 2002 and 2003 NSDUH also show that nearly 8 percent of the U.S. population exhibited symptoms of alcohol abuse and/or dependence in the past year, based on criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), published by the American Psychiatric Association (APA).

According to medical researchers, harmful effects of alcohol intoxication include decreased thinking and reasoning performance, diminished concentration, impaired short-term memory, and reduced coordination. Prolonged alcohol consumption can have even more serious consequences, such as health problems, unplanned pregnancy, illegal drug use, accidents, crime and suicide.



Labor and health economists are also interested in the consequences of alcohol consumption on labor market outcomes such as employment status, hours worked, and wages. Alcohol use could negatively affect labor market outcomes directly through a reduction in productivity and indirectly by decreasing human capital accumulation. In contrast, despite the conventional wisdom about the social costs of alcohol consumption, some medical research has shown that moderate alcohol use may be beneficial to health. If so, and productivity is positively related to health, moderate drinking could improve labor market outcomes. Indeed, empirical results on this relationship are mixed and inconclusive, suggesting the need for further investigation.

**Table 1. Alcohol prevalence rates<sup>†</sup> from NHSDA surveys**

<b>Year</b>	<b>Past year use (%)</b>	<b>Past month use (%)</b>
1979	72.9	60.9
1982	68.0	55.0
1985	72.9	58.3
1988	68.1	53.4
1990	66.0	51.2
1991	68.0	50.9
1992	64.7	47.8
1993	66.5	49.6
1994-A	66.9	52.6
1994-B	66.9	53.9
1995	65.4	52.2
1996	64.9	51.0
1997	64.1	51.4
1998	64.0	51.7
1999	62.2	46.4
2000	61.9	46.6
2001	63.6	48.3

<sup>†</sup>Statistics are calculated from online analysis on the Inter-University Consortium for Political and Social Research (ICPSR) web site using sample weights.

The purpose of this study is to estimate the causal effect of alcohol consumption on employment status. Specifically, it investigates whether previous problematic heavy drinking, i.e. clinically-defined alcohol abuse and/or dependence, or more frequent alcohol use lowers the probability of current employment. The focus is on attempting to

eliminate potential estimation problems found in previous studies in order to generate estimates that can be reliably interpreted as causal effects. In particular, an instrumental variables (IV) regression approach will be applied to control for potential endogeneity that is inherent in the nature of the relationship between alcohol consumption and labor market outcomes. IV estimates will be compared to single-equation estimates using ordinary least squares (OLS) to test whether alcohol use is exogenously determined with respect to employment. Overidentification tests will be performed to establish the validity of the instrumental variables.

The study will use survey data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), the National Survey on Drug Use and Health (NSDUH), and the National Education Longitudinal Study of 1988 (NELS:88) that have not previously been used to study the relationship between alcohol use and labor market outcomes. There are several advantages in using these data sets. In particular, they contain information on various measures of employment status and alcohol consumption. Self-administered answer sheets for the alcohol use questions will help minimize underreporting. The data also contain many variables that have the potential to be highly correlated with drinking but uncorrelated with current employment, which would allow their specification as instrumental variables in the estimation procedure. Finally, the richness of the data enables controlling for many demographic factors that are likely related to both drinking and employment.

Various strategies, solutions and suggestions from previous studies will be implemented. First, this study will recognize that effects of alcohol consumption on employment might vary by age and gender. Male and female samples will be analyzed

separately, and only respondents of prime labor force age will be included so that potential effects on school enrollment and retirement at either end of the age distribution are filtered out. Second, the study will use alternative measures of drinking and employment as well as different data sets in order to examine the robustness of the results. Finally, different model specifications will be used to further investigate robustness and to distinguish between direct and indirect effects of alcohol consumption on labor market outcomes.

The remainder of this study is organized as follows. Section 2 summarizes the results of previous relevant studies. Section 3 documents the theory that motivates studying this topic as well as the empirical methods used. Section 4 describes the data sets, sample restrictions, and the lists of variables included in the analysis. Section 5 provides detailed estimation results. Section 6 offers conclusions, caveats, suggestions for future research, and policy implications.

## 2. Literature Review

In the past two decades, a growing body of literature has examined the relationship between alcohol use and labor market outcomes. Medical research has shown that alcohol consumption can cause serious health problems. Since poor health can reduce worker productivity, the conventional wisdom is that alcohol consumption is detrimental to labor market outcomes. However, the majority of empirical results contradict this conventional wisdom.

Some researchers have argued that moderate alcohol use may positively affect labor market outcomes, paralleling medical research showing that moderate drinking is beneficial to health. Drinking in moderation can also be relaxing, which might also improve productivity. Meanwhile, social drinking possibly enhances social capital, i.e. the ability to network among other employed individuals, which could also improve labor market outcomes.<sup>1</sup>

It has also been argued that the unexpected positive correlation may arise from income effects running in the opposite direction. An increase in earnings may lead to an increase in alcohol consumption if alcohol is a normal good.

Another possible mechanism generating beneficial effects of drinking on labor market outcomes is unobserved heterogeneity. An unobserved family or individual specific effect that simultaneously affects both the alcohol consumption and labor market decisions, and is positively associated with labor market outcomes, will lead to an

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<sup>1</sup> See Durlauf (2002) for prospective roles of social capital in socioeconomic outcomes.

upwardly biased estimate. For instance, aggressive or “type A personality” individuals might be more likely to both drink and be employed full time.

Studies of labor market effects of alcohol use can be divided into two categories based on the specific labor market outcomes examined: (1) earnings, i.e. income and wage, and (2) labor supply, i.e. employment status and hours of work. Mixed results have been obtained for both categories of studies.

### 2.1. Earnings

A majority of the literature on labor market effects of drinking has concentrated on the income or wage of workers, where frequencies of drinking or number of drinks are the commonly used measures of drinking. Berger and Leigh (1988), the first empirical study in this area, used the 1972–1973 Quality of Employment Survey to investigate the effect of alcohol use on wages by estimating separate earnings equations for non-drinkers and drinkers who worked at least 20 hours per week as part of a sample selection model. They found that both moderate and heavy drinkers earn higher wages than non-drinkers. Employing a similar model, Bryant et al. (1993) studied the effect of alcohol use on earnings of young white males in the National Longitudinal Survey of Youth (NLSY) and found that drinkers earned more and received higher wages than non-drinkers.

Later, to explain these unexpected results, some researchers proposed the existence of an inverse U-shaped relationship between alcohol consumption and wages: light to moderate alcohol use increases health and thus productivity, but at some moderate level of drinking additional consumption is detrimental. French and Zarkin (1995) used data from four worksites to investigate this hypothesis by adding quadratic

and cubic alcohol use terms to a wage equation, showing that moderate drinkers indeed have higher wages than both non-drinkers and heavy drinkers. Heien (1996) obtained similar results using 1979 and 1984 National Household Survey on Alcohol Use data, as did Hamilton and Hamilton (1997) for earnings of prime-age males using the 1985 Canadian General Social Survey, Barrett (2002) using the 1989–90 Australian National Health Survey, and Auld (2005) using the 1985 and 1991 cycles of the Canadian General Social Survey.

Yet, several analyses have yielded different results. Zarkin et al. (1998a) used a sample of prime-age workers from the 1991 and 1992 NHSDA and found a significant positive relationship of alcohol use on wages for men that had no turning point at which the effect became negative. Using a prime-age sample from the 1979–1995 Current Population Survey (CPS), Dave and Kaestner (2002) estimated the reduced-form equation of the effect of alcohol taxes on wages. They found significant positive effects of alcohol taxes on the natural log of wages for females, but insignificant positive effects for males, suggesting that heavy alcohol consumption reduces wages for females but not males. But because these estimates are implausibly large and inconsistent with their results for employment and work hours, they concluded that there is no systematic relationship between alcohol consumption and labor market outcomes. Employing a methodology similar to that used by Dave and Kaestner (2002), Cook and Peters (2005) used a sample of full-time workers from the 1979 National Longitudinal Survey of Youth (NLSY) to estimate a reduced-form equation by replacing the drinking variables with alcohol prices. They found evidence of a positive association between alcohol price and earnings for both genders, but the estimate for males is not statistically significant.

Hence, the results suggest that there is a negative association between drinking and earnings for females only.

Another possible explanation for positive earnings effects of alcohol consumption is unmeasured individual characteristics that positively influence wages. This problem is called unobserved time invariant heterogeneity. Two studies of earnings addressed this problem using different panel data sets from the National Longitudinal Survey of Youth (NLSY). Kenkel and Ribar (1994) applied an IV approach to address this problem and found negative effects of alcohol use on earnings for both genders where the magnitude of the estimates is larger compared to OLS estimates. Peters (2004) addressed this problem by applying a fixed effect model and found positive effects of alcohol use on wages using both OLS and individual fixed effect approaches. However, the estimates from the fixed effect model are smaller in magnitude and statistically insignificant. Both studies suggest that unobserved heterogeneity might be the cause of the unexpected positive drinking effects found by other researchers.

## 2.2. Labor Supply

Earnings studies have ignored the effect of alcohol consumption on employment by analyzing samples consisting only of workers. Other researchers have thus examined effects on employment and, more generally, hours worked. Many labor supply studies defined a binary indicator of alcohol abuse and/or dependence based on criteria from different versions of the Diagnostic and Statistical Manual of Mental Disorders (DSM). Depending on the study, this variable is referred to as representing alcohol abuse and/or dependence, problem drinking, or alcoholism.

Using multiple site data from the Epidemiologic Catchment Area (ECA) survey, Mullahy and Sindelar (1991) found negative and statistically significant effects of previous alcoholism (based on DSM-III-R) on the probability of working full time, for both genders, using logit regressions. These effects were smaller, but still significant, after controlling for human capital measures. Using the same data to investigate the effect of previous alcoholism on employment (full or part time), Mullahy and Sindelar (1993) found similar results. Both studies treated the alcoholism variable as exogenous.

While the results of these two studies support the conventional wisdom that labor market effects of drinking are negative, other studies estimated either insignificant or mixed effects. In the 1979-1990 NLSY, Kenkel and Ribar (1994) found that in IV regressions, alcohol abuse and alcohol dependence (based on DSM-III) have insignificant negative effects on hours of work for men, but have a positive and significant effect for women. However, the results were not robust to alternative model specifications. Using prime-age males and females in the Alcohol Supplement of the 1988 National Health Interview Survey (NHIS), Mullahy and Sindelar (1996) applied an IV approach and found that for both genders, problem drinking (based on DSM-III-R) lowered employment and increased unemployment, though the results are not statistically significant. Zarkin et al. (1998b) investigated the effect of alcohol use on past month work hours among young male workers, finding an insignificant positive effect in the 1991 NHSDA data but a significant negative effect in the 1992 NHSDA data. Thus, they concluded that the relationship is unstable. Feng et al. (2001) used a random sample of prime working age respondents from a four-wave longitudinal population-based survey of six southern U.S. states. In their bivariate probit model, problem drinking (based on DSM-IV) has an



insignificant negative effect on employment for women but a significant positive effect for men.

Two recent studies revealed significant negative effects of alcoholism on the probability of working. Using the same data and variable specification as did Mullahy and Sindelar (1996) but restricting the sample to males, Terza (2002) applied a non-linear multinomial logit model that accounted for the possible endogeneity of drinking and a non-linear relationship, and obtained results that are similar but significant and twice as large. MacDonald and Shields (2004) also found significant negative effects of problem drinking on the probability of working when allowing for potential unobserved heterogeneity using bivariate probit models for working age males in the 1996 Health Survey of England (HSE). They defined problem drinking using CAGE, an internationally used assessment instrument for identifying problems with alcohol that, like DSM, is based on the observed psychological and physical symptoms of alcohol.

Earnings studies are prone to sample selection bias because they examine only workers. This raises the possibility that the negative effect of alcohol use is underestimated. In addition, the instrumental variables employed in this study are more likely to be endogenous with respect to earnings than employment. Therefore, this study will focus on labor supply, specifically employment status.

### 3. Theoretical Background and Methodology

The model used in this study is based on human capital theory. Labor market outcomes have a variety of determinants, such as demographic and geographic factors, education, health status, social status, and consumption decisions. By accumulating human capital such as education, training, and work experience, individuals increase labor market productivity and thus the probability of employment. Health capital is also an importance component of human capital because, *ceteris paribus*, healthier workers are more productive. Alcohol consumption can lower employment probability both directly, through a reduction in productivity, and indirectly, by decreasing human capital accumulation (Mullahy and Sindelar 1989). Other exogenous factors such as age, race, marital status, the number of children, and local labor supply and demand also determine whether an individual participates in the labor force and is employed.

Therefore, consider a model of the relationship between employment and alcohol consumption of the form

$$E_i = \beta_0 + \beta_1 X_{1i} + \dots + \beta_k X_{ki} + \beta_A A_i + \epsilon_i, \quad i = 1, \dots, n, \quad (1)$$

where  $E$  is employment status,  $A$  is alcohol consumption, the  $X$ 's are observable explanatory variables such as demographic factors, education, health status, marital status, and geographic controls,  $k$  is the number of exogenous variables,  $\epsilon$  is the error term (which contains unobservable determinants of employment),  $\beta$ 's are parameters to be estimated,  $i$  indexes individuals, and  $n$  is the number of observations.

This study attempts to obtain an econometrically consistent estimate of the alcohol use coefficient,  $\beta_A$ , in equation (1). For ordinary least squares (OLS) to yield this, the assumption of zero correlation between the error term ( $\varepsilon$ ) and alcohol consumption ( $A$ ), i.e. zero conditional mean, must hold (Greene 2002). However, zero conditional mean is particularly unlikely to hold in equation (1). This is because of a variety of factors, including the model specification, the nature of survey data, and the likely bi-directional relationship between alcohol consumption and employment.

The violation of this assumption is called the endogeneity problem and can arise for three distinct reasons. First, unobserved determinants of employment are by definition part of the error term. If any of these unobserved determinants are also correlated with alcohol use, the error term will be correlated with alcohol use. This is called the omitted variable problem. Second, when actual alcohol use is measured with error, observed alcohol use is correlated with the measurement error, which is subsumed into the error term. This is called the measurement error problem. Alcohol consumption in particular might be either underreported or overreported, depending on whether and which others are present during the interview. Third, if the alcohol consumption decision also responds to changes in employment, i.e. through the income effect if alcohol is a normal good, then changes in the error term will circulate to alcohol use through employment. This is called the simultaneity problem.

The most popular econometric solution to the problem of endogeneity, including measurement error in alcohol use as long as it is not systematically related to employment, is the instrumental variables (IV) approach, which produces consistent estimates in the presence of an endogenous explanatory variable. This approach

requires one or more instrumental variables that are not correlated with the error term ( $\varepsilon$ ), but have a high partial correlation with alcohol use even after effects through other exogenous variables have been netted out (Wooldridge 2002).

Typically, the IV approach is estimated using two-stage least squares (2SLS). In the first stage regression, the following equation is estimated using OLS and fitted values ( $\hat{A}_i$ ) are obtained:

$$A_i = \gamma_0 + \gamma_1 X_{1i} + \dots + \gamma_k X_{ki} + \delta_1 Z_{1i} + \dots + \delta_j Z_{ji} + \eta_i, \quad i = 1, \dots, n, \quad (2)$$

where the  $Z$ 's are the instrumental variables, the  $X$ 's are the explanatory variables from equation (1),  $j$  is the number of instrumental variables, the  $\gamma$ 's and  $\delta$ 's are parameters to be estimated, and  $\eta$  is the error term. In the second stage, equation (3), which is identical to equation (1) with  $\hat{A}_i$  substituted for  $A_i$ , is estimated by OLS:

$$E_i = \beta_0 + \beta_1 X_{1i} + \dots + \beta_k X_{ki} + \beta_A \hat{A}_i + \varepsilon_i, \quad i = 1, \dots, n. \quad (3)$$

The standard errors obtained from this regression are incorrect, but are easily corrected (Wooldridge 2002).

A minimal condition for identification of equation (3) is the rank condition, which can be tested using a standard partial F test of the null hypothesis  $\delta_1 = \dots = \delta_j = 0$  in equation (2), i.e. the first stage regression. This reduces to a t-test if there is only one instrumental variable, i.e. if  $j = 1$ . If this hypothesis is rejected, equation (3) passes the rank condition and is identified. Identification is exact in the case of only one instrumental variable. Otherwise, the equation is overidentified, and a test of overidentifying restrictions should be carried out to determine whether the instrumental variables are correlated with the residuals, i.e. sample error terms, from equation (3). The test statistic is  $n \cdot R^2$ , where  $R^2$  is the multiple coefficient of determination obtained by

regressing the residuals from equation (3) on the X's and the Z's using OLS. Under the null hypothesis of overidentifying restriction validity along with homoskedastic errors, this statistic is distributed as chi-square, with degrees of freedom equal to one less than the number of instrumental variables. Failure to reject the null hypothesis implies that 2SLS will produce consistent causal effect estimates.

The weakness of even a properly specified 2SLS model is that it is inefficient relative to OLS in the situation where alcohol use is actually exogenous, i.e. zero conditional mean is satisfied, in which case OLS produces consistent estimates. Thus, the Hausman (1978) test for exogeneity will be conducted. The idea of this test is that if alcohol use and the error term of (1) are uncorrelated, the estimates obtained from OLS and 2SLS should differ only by sampling error. The Hausman t statistic is equal to the difference between the 2SLS and OLS estimates of  $\beta_A$  divided by the square root of the difference in the estimated variances of  $\beta_A$  under 2SLS and OLS. If the null hypothesis of exogeneity is rejected, 2SLS estimates should be used to make inferences about causal effects. If not, OLS estimates are preferable due to their smaller standard errors.

In sum, IV, estimated by 2SLS, produces a consistent estimate of the causal effect of alcohol use on employment in the presence of endogeneity, if valid instrumental variables can be obtained. Given the potential endogeneity of alcohol use in this context, 2SLS will be used in this study.

## 4. Data Descriptions

### 4.1. Variable Selections and Sample Restrictions

#### 4.1.1. Dependent Variables

Different labor market outcomes, and different definitions of the same labor market outcomes, can be affected differentially by the same variables. Wage studies concentrate on workers and thus ignore effects on employment and labor force participation. Studies of income or earnings estimate combined effects on the wage and labor supply, so different sample inclusion criteria regarding work status and hours worked can lead to different conclusions.

This study concentrates on employment status. Most studies have grouped individuals who are unemployed and those who are out of labor force into the same category, although alcohol consumption might affect labor force participation differently than it does employment among those in the labor force. Carefully defining employment and using alternative measures to examine robustness are thus important.

#### 4.1.2. Alcohol Variables

Properly defining drinking status is also important, since light and heavy drinking might have different effects on labor market outcomes. The variety of alcohol use measures in the different data sets studied allow for examination of many different past year drinking variables. For maintaining the possibility of causality, it is useful for the

period in which drinking status is measured to have preceded that for labor market status. This study will use both binary indicators and numerical measures of alcohol use.

#### 4.1.3. Instrumental Variables

Estimates from the many studies that have treated drinking as exogenous and use a single equation method reflect the partial correlation between alcohol consumption and labor market outcomes, holding constant other variables in the regression, but not necessarily the causal effect of drinking on labor market outcomes. Mullahy and Sindelar (1991, 1993), French and Zarkin (1995), Heien (1996), Zarkin et al. (1998b) and Feng et al. (2001) each acknowledged the endogeneity problem, but applied a single equation approach because of data limitations.

Previous IV studies have used a variety of instruments as attempted sources of exogenous variation with which to identify drinking behavior. Kenkel and Ribar (1994) used as instruments the percentage of the state's population residing in dry counties, the average beer price, parent's alcoholism, and relatives' alcoholism. Instruments specified by Mullahy and Sindelar (1996) included an indicator of whether an individual lived with alcoholic relatives or parents, the state-level excise tax on beer, the state-level excise tax on cigarettes, and the state-level apparent alcohol consumption. Zarkin et al. (1998a, 1998b) used respondents' assessments of risk from using alcohol as instruments. Barrett (2002) specified as instruments a dummy variable indicating whether the individual smoked at 18 years of age (to capture attitudes toward risk) and a set of variables measuring drinking patterns in the locality of residence (to capture social influences on drinking behaviors). Macdonald and Shields (2004) used respondent non-chronic health

conditions as well as information about whether parents and partners smoked as instruments.

However, these studies still fail to reach consistent conclusions, leading to the question of instrument validity. It is particularly important to perform tests of overidentification to ensure that the instrumental variables are exogenous with respect to employment and the resulting IV estimates are thus consistent. Mullahy and Sindelar (1996) and Zarkin et al. (1998a, 1998b) are the only studies in this area that included the tests of instrument validity. Mullahy and Sindelar (1996) found that their instruments marginally pass overidentification tests, implying that their instruments can be validly excluded from the labor market outcome equations. However, Zarkin et al. (1998a, 1998b) found that their instruments did not pass overidentification tests, i.e. could not be validly excluded from the labor market outcome equations, thus preventing the authors from obtaining definitive conclusions.

#### 4.1.4. Exogenous Variables

Alcohol consumption has both direct and indirect effects on employment. Alcohol consumption can directly increase absenteeism and lower productivity. It can also affect productivity indirectly by reducing the accumulation of human capital through deleterious effects on schooling, health, and work experience. It is important to estimate regressions with and without these human capital measures in order to distinguish the direct effect from the overall effect that includes the indirect effect through human capital accumulation.



To investigate the direct and indirect effects of alcohol consumption, four specifications of the set of explanatory factors included in equations (2) and (3) are defined, corresponding to specifications labeled Model 1–4. In Model 1, these include only demographic and geographic factors that are reasonably exogenous. Under this specification, the estimated alcohol use coefficient,  $\beta_A$ , will reveal the overall effect of alcohol use on employment. In Model 2, the explanatory variables include those from Model 1, along with the number of children and marital status. Model 3 includes the variables in Model 2 plus educational attainment. Model 4 adds health status indicators to the variables from Model 3. The estimated coefficient of alcohol use in Model 4 will reveal its direct effect on employment, controlling for indirect effects through the main types of human capital that determine employment and might also be altered by drinking.

#### 4.1.5. Sample Restrictions

Previous studies reveal the importance of stratifying analysis samples based on gender and age. Various studies, including Mullahy and Sindelar (1991, 1996), Kenkel and Ribar (1994), Zarkin et al. (1998a), Feng et al. (2001) and Dave and Kaestner (2002) have found that labor market effects of alcohol use vary by gender. Because men tend to have higher tolerance levels for alcohol than do women and alcohol can cause medical problems to progress more rapidly in women than in men, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) suggests a lower drinking limit for women than for men. Meanwhile, men tend to drink more heavily than women and are more likely to develop symptoms of alcoholism. Moreover, gender differences in labor market behavior over the course of the life cycle, driven in large part by child bearing among women, are

well known. Therefore, this study will analyze males and females separately.

Samples will include only prime age respondents, because labor market effects of alcohol use are likely to vary with age. The drinking behavior of young people is qualitatively different from that of older people. All else equal, the level of tolerance to alcohol decreases with age. In addition, alcohol can harmfully interact with many medical conditions that are common in older people. The NIAAA recommends that older people limit their alcohol consumption to one drink per day.

Perhaps more important are life-cycle differences in labor market activity. Mullahy and Sindelar (1993) argued that this is responsible for changes in the relationship between alcohol consumption and labor market outcomes over the lifetime of an individual. For instance, alcohol may cause an adolescent drinker to drop out of school and enter the labor force early, thus leading to more work experience and higher earnings in early adulthood relative to non-drinkers. But this relationship reverses itself during prime work ages, as returns to schooling ultimately dominate those from experience. Older drinkers will therefore have accumulated fewer financial assets than non-users, forcing them to retire later. Thus, even if drinking reduces employment for individuals of prime work ages, drinkers might be more likely to work in early adulthood and as normal retirement age approaches. Indeed, Hamilton and Hamilton (1997) found that heavy drinkers have flatter age-earnings profiles than abstainers and moderate drinkers, implying that heavy alcohol use lowers educational attainment and increases work propensity among young adults, and precludes early retirement later in life. Failure to recognize these life cycle differences may yield misleading conclusions.

Most researchers have restricted their samples to prime-age individuals, between the ages of 25–59 years old, to eliminate effects of alcohol use that operate through school enrollment and retirement. In contrast, Kenkel and Ribar (1994) and Zarkin et al. (1998b) used samples of young adults, aged 14–29 and 18–24 respectively, and obtained weak results. This is predicted if negative productivity effects are masked because some of these effects act to increase earnings by reducing school enrollment and thus lengthening labor market experience among young adults.

Moreover, respondents who report being out of the labor force, including homemakers, students and retirees, are omitted from analysis samples. If drinking has harmful effects on productivity and human capital accumulation, it might raise the likelihood of unemployment while simultaneously reducing the likelihood of being out of the labor force. Thus, categorizing homemakers, students and retirees as non-workers might produce misleading results.

Finally, respondents for whom information on any of the included variables is missing are also excluded from the analysis samples.

#### 4.2. Data

This study uses three cross sectional data sources: the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), the 2002 and 2003 waves of the National Survey on Drug Use and Health (NSDUH), and the National Education Longitudinal Study of 1988 (NELS:88).

#### 4.2.1 NESARC

The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), conducted by the NIAAA, is a survey of U.S. non-institutionalized households with individuals aged 18 and older. Non-institutional group quarters housing units such as boarding and rooming houses, non-transient hotels and motels, shelters, facilities for housing workers, college residences, and group homes were also surveyed. The 2001–2002 wave used here includes 43,093 respondents and is available online at [www.niaaa.census.gov](http://www.niaaa.census.gov). NESARC is designed to be a longitudinal survey, but the second wave of interviews is still ongoing and thus not yet available.

There are two particular advantages to using these data. First, information on alcohol consumption is very rich. Not only does the data set contain information on drinking status, quantity, frequency, and types of beverages, but it also contains an estimate of the average daily volume of ethanol intake in the past year. To collect precise information on the quantity of alcohol consumed by respondents, interviewers used flashcards containing categorical response options, accompanied by life-sized photographs of common glasses, with and without ice, with lines for various fill levels that indicated the corresponding number of ounces. This data set also contains several indicators for symptoms of alcohol abuse and/or dependence (based on DSM-IV) in the last 12 months and prior to the last 12 months, which will allow comparison with other studies that use similar diagnostic criteria. Second, the data set contains abundant information on family alcohol consumption history. Measures of problem drinking status of parents, siblings and other family members can plausibly serve as instrumental variables in the econometric analysis.

#### 4.2.1.1. Dependent Variables

This study examines two binary indicators of current employment status, one for any full-time or part-time employment and another for working full time. The latter is used to examine the robustness of the results from the former variable. The effect of drinking on full-time employment is expected to be larger than that on any employment, since one manifestation of a deleterious productivity impact could be a switch from a full to part time job.

#### 4.2.1.2. Alcohol Variables

Two binary indicators and four numerical measures of alcohol use are studied. The indicators reflect whether the respondent had symptoms of alcohol abuse and/or dependence (based on DSM-IV); one pertains to only the last 12 months and the other relates to the period prior to the last 12 months. The numerical variables all cover the previous year. They are the number of alcoholic drinks consumed in the last 12 months, the number of days on which the respondent had five or more alcoholic drinks in the last 12 months, the number of days on which the respondent felt intoxicated in the last 12 months, and the average daily volume of ethanol consumed in the last 12 months. The number of days intoxicated is useful because drinking quantities and frequencies ignore differences across individuals in the level of tolerance to alcohol.

#### 4.2.1.3. Instrumental Variables

A strength of the NESARC is the information it contains on problem drinking among family members. Indicators of drinking problems among family members are

candidates to serve as instrumental variables. Through hereditary or environmental factors, drinking among parents, siblings, grandparents and other family members is likely to be highly correlated with respondent drinking, even after controlling for the influence of other exogenous determinants of alcohol use. The medical literature has observed that alcoholism is passed from one generation to the next. Shuckit (1999) showed that first-degree relatives of alcoholics are three to four times more likely to develop alcoholism than first-degree relatives of non-alcoholics. However, previous drinking problems among family members are plausibly not further related to respondent employment status, holding constant respondent and other family background characteristics.

Tests of instrument strength and overidentifying restrictions were used to establish which combinations of these measures are the most empirically defensible to specify as instruments. Ultimately, two indicators of problem drinking among family members were selected: whether the respondent's blood/natural father and/or mother was ever an alcoholic or problem drinker and whether any of the respondent's full brothers and/or sisters was ever an alcoholic or problem drinker.

#### 4.2.1.4. Exogenous Variables

The set of exogenous variables in Model 1 includes age, age squared, four race dummy variables, two Metropolitan Statistical Area (MSA) residence dummy variables, state unemployment rates (from the Bureau of Labor Statistics), and four indicators for family history of major depression and/or antisocial personality disorder. The four race dummy variables consist of *White*, *Black*, *American Indian/Alaska Native*, and

*Asian/Pacific Islander*, with *Hispanic or Latino* serving as the omitted category. Two Metropolitan Statistical Area (MSA) residence dummy variables indicate whether a respondent living in an MSA resides inside or outside the central city. An indicator variable for whether a respondent is not living in an MSA is the omitted category for the residence dummy variables. Four binary indicators for family history of major depression and/or antisocial personality disorder include an indicator of whether the respondent's father/mother were ever depressed; an indicator of whether the respondent's brother/sister were ever depressed; an indicator of whether the respondent's father/mother ever had behavior problems; and an indicator of whether the respondent's brother/sister ever had behavior problems. These family mental health variables are included to control for the possibility that respondent employment is correlated with problem drinking among family members through a correlation between family member problem drinking and mental health. State unemployment rates are included to capture variations in labor market conditions across states.

Model 2 contains the same set of exogenous variables as Model 1, but adds the number of children and five dummy variables for marital status, *Married*, *Cohabiting*, *Widowed*, *Divorced*, and *Separated*, with *Never married* as the omitted category. Model 3 includes the Model 2 variables, along with five dummy variables for educational attainment, *Completed graduate degree*, *Had some graduate studies*, *Completed college*, *Had some college education*, and *Completed high school*, with *Not completed high school* as the omitted category. Finally, Model 4 contains the variables in Model 3, plus four dummy variables for health status, *Excellent*, *Very good*, *Good*, and *Fair*, with *Poor* as the omitted category.

The expected signs of the regression coefficients in the employment equation (3) are positive for age and negative for the square of age, since employment tends to increase with age at a decreasing rate. The expected sign for geographic controls is positive, if the additional labor demand in bigger cities is greater than the additional labor supply. According to human capital theory, labor market outcomes are positively related to educational attainment and health status, making their expected signs positive. Marital status and the number of children are expected to have positive signs for men and negative signs for women: based on traditional gender roles, married men will have incentive to financially support their spouses and children, while married women will have less incentive to work if married and a higher opportunity cost of working as the number of children rises. The coefficient of the state unemployment rate, as a proxy for labor demand, is expected to be negative. The coefficients of family history of mental health disorders will also be negative if these conditions adversely affect employment and are positively correlated across family members.

#### 4.2.1.5. Sample Restrictions

After the sample restrictions discussed in section 4.1.5 are applied, the final NESARC analysis samples contain 8,673 males and 9,355 females who are 26–55 years old. These lower and upper age limits are chosen in order to minimize any effects of drinking that operate through school enrollment and retirement while maintaining a fairly broad definition of “prime working age.”



#### 4.2.1.6. Sample Descriptive Statistics

Table 2 summarizes descriptive statistics for the NESARC sample. Average ages for both genders are about 40 years old and the majority of each sample is white. About 86 percent of the male sample and 72 percent of the female sample currently works full time. About half of the respondents live in an MSA outside the central city, with roughly two-thirds of the remainder living in central cities. About 13 percent of males and 11 percent of females did not complete high school, while about 17 percent of males and 15 percent of females completed four years of college. Very few respondents report poor health. Past alcohol abuse and/or dependence is about twice as prevalent among males as among females, while average alcohol consumption is two to four times greater for males depending on the specific measure. Alcoholism or problem drinking is reported about one-quarter of the time for a parent and one-fifth of the time for a sibling.

#### 4.2.2. NSDUH

The National Survey on Drug Use and Health (NSDUH) is a multistage area probability sample of the U.S. civilian non-institutionalized population aged 12 and above. The 2002 NSDUH is the 22<sup>nd</sup> in the series, formerly titled the National Household Survey on Drug Abuse (NHSDA), which started in 1971. The primary purpose is to measure the prevalence and correlates of drug use in the U.S. The surveys are funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) and conducted by RTI International, and can be obtained from [www.icpsr.umich.edu](http://www.icpsr.umich.edu). Starting in 2002, each respondent to complete a survey was given

**Table 2. Sample descriptive statistics from NESARC**

Variable	Male (n=8,673)			Female (n=9,355)		
	Mean	Min	Max	Mean	Min	Max
<b>Exogenous variables</b>						
Age	40.36	26	55	40.32	26	55
White	0.58	0	1	0.53	0	1
Black	0.16	0	1	0.23	0	1
American Indian/Alaska Native	0.02	0	1	0.02	0	1
Asian/Pacific Islander	0.04	0	1	0.03	0	1
Hispanic or Latino*	0.21	0	1	0.19	0	1
Living in MSA - in central city	0.33	0	1	0.36	0	1
Living in MSA - outside central city	0.50	0	1	0.48	0	1
Not living in MSA*	0.17	0	1	0.16	0	1
Father/mother ever depressed	0.20	0	1	0.28	0	1
Brother/sister ever depressed	0.16	0	1	0.23	0	1
Father/mother had behavior problems	0.08	0	1	0.10	0	1
Brother/sister had behavior problems	0.11	0	1	0.14	0	1
Number of children	1.70	0	15	1.85	0	15
Married	0.60	0	1	0.50	0	1
Cohabitating	0.04	0	1	0.03	0	1
Widowed	0.01	0	1	0.02	0	1
Divorced	0.13	0	1	0.18	0	1
Separated	0.03	0	1	0.05	0	1
Never married*	0.20	0	1	0.21	0	1
Completed graduate degree	0.10	0	1	0.10	0	1
Had some graduate studies	0.04	0	1	0.04	0	1
Completed college	0.17	0	1	0.15	0	1
Had some college education	0.33	0	1	0.36	0	1
Completed high school	0.23	0	1	0.23	0	1
Not completed high school*	0.13	0	1	0.11	0	1
Excellent health	0.35	0	1	0.33	0	1
Very good health	0.33	0	1	0.31	0	1
Good health	0.22	0	1	0.24	0	1
Fair health	0.07	0	1	0.09	0	1
Poor health*	0.02	0	1	0.03	0	1
<b>Dependent variables</b>						
Current employment (full time/part time)	0.89	0	1	0.86	0	1
Currently working full time (35+ hours a week)	0.86	0	1	0.72	0	1
<b>Alcohol variables</b>						
Alcohol abuse and/or dependence prior to the last 12 months	0.43	0	1	0.23	0	1
Alcohol abuse and/or dependence in last 12 months	0.13	0	1	0.06	0	1
Number of drinks consumed in the last 12 months	257.17	0	10950	91.87	0	10950
Number of days drank 5+ drinks in the last 12 months	22.24	0	365	4.92	0	365
Number of days drunk in the last 12 months	7.82	0	365	3.58	0	365
Average daily volume of ethanol consumed in the last 12 months	0.60	0	139.20	0.20	0	76.82
<b>Instrumental variables</b>						
Father/mother was ever an alcoholic/problem drinker	0.20	0	1	0.27	0	1
Brother/sister was ever an alcoholic/problem drinker	0.18	0	1	0.22	0	1

\*Omitted dummy variables

an incentive payment of \$30, resulting in a substantial improvement in the response rate. Because of this, as well as other improvements in data collection quality control procedures implemented in 2002, NSDUH data are not necessarily comparable with the NHSDA data that preceded them. The public use file contains data on 54,079 respondents for 2002 and 55,230 respondents for 2003. The data are not longitudinal, but the two cross sections are pooled for this analysis.

Like NESARC, the NSDUH data include a variety of demographic variables, alcohol consumption measures, and employment measures, as well as several potential instrumental variables. Another advantage of NSDUH is that it used self-administered questionnaires to collect the alcohol consumption data. Zarkin et al. (1998b) suggested that this will help minimize systematic misreporting compared to questionnaires administered by interviewers.

#### 4.2.2.1. Dependent Variables

Two binary indicators for past week employment status, one for any employment and the other for working full time, are used.

#### 4.2.2.2. Alcohol Variables

A variety of alcohol use measures are reported in the NSDUH. The ones studied here are a binary indicator of whether the respondent had symptoms of alcohol abuse and/or dependence (based on DSM-IV) in the past year, along with the number of days alcohol was consumed in the last year, the number of days alcohol was consumed in the

last month, and the number of days the respondent consumed five or more alcoholic drinks in the last month.

#### 4.2.2.3. Instrumental Variables

Examples of potential instrumental variables in the NSDUH include the number of friends who drink at all and who get drunk at least once a week, along with indicators for serious arguments in the respondent's household, whether the respondent's religious beliefs are an important part of his/her life, whether these beliefs influence his/her decisions, whether it is important that his/her friends share these beliefs, and the respondent's opinion about the risk of using alcohol. The intuition behind using these variables as instruments is not necessarily as compelling as for the family alcohol consumption history variables in the NESARC. However, tests of instrument strength and overidentification were used to establish empirically valid combinations. The two chosen were a binary indicator of whether the respondent thinks there is no or slight risk, rather than moderate or great risk, from consuming 4–5 alcoholic drinks nearly every day and a binary indicator of whether the respondent's religious beliefs are an important, rather than an unimportant, part of his/her life.

#### 4.2.2.4. Exogenous Variables

Similar to the model used to analyze the NESARC, the set of exogenous variables in Model 1 includes two age dummy variables, three race dummy variables, and two MSA residence dummy variables. The two age indicators are *Age between 30 and 34 years old* and *Age between 35 and 49 years old*, with *Age between 26 and 29 years old*

as the omitted category. The three race indicators are *White*, *Black*, and *Hispanic*, with *Other races* as the omitted category. The two MSA residence indicators are for *Living in an MSA with one million or more persons* and *Living in an MSA with fewer than 1 million persons*, with *Not living in an MSA* as the omitted category. Model 2 contains the Model 1 variables, the number of children, and three dummy variables for marital status, *Married*, *Widowed*, and *Divorced or separated*, with *Never married* as the omitted category. Model 3 adds three dummy variables for educational attainment, *Completed undergraduate/graduate study*, *Had some college education*, and *Completed high school*, with *Not completed high school* as the omitted category. Model 4 further contains four dummy variables for health status, *Excellent*, *Very good*, *Good* and *Fair*, with *Poor* as the omitted category. The expected signs of the coefficients are analogous to those discussed in Section 4.2.1.4.

#### 4.2.2.5. Sample Restrictions

Because only categorical information on age is available in the NSDUH and 50–64 year olds are grouped into the same category, the age range is restricted to 26–49 years old. The pooled 2002 and 2003 NSDUH samples consist of 12,046 men and 11,779 women.

#### 4.2.2.6. Sample Descriptive Statistics

Table 3 summarizes sample descriptive statistics from the pooled 2002 and 2003 NSDUH data set. The majority of the respondents are white and 35–49 years old. The largest percentage live in an MSA with population over 1 million and have very

**Table 3. Sample descriptive statistics from NSDUH**

Variable	Male (n=12,046)			Female (n=11,779)		
	Mean	Min	Max	Mean	Min	Max
<b>Exogenous variables</b>						
Age between 26 and 29 years old*	0.18	0	1	0.17	0	1
Age between 30 and 34 years old	0.23	0	1	0.22	0	1
Age between 35 and 49 years old	0.59	0	1	0.61	0	1
White	0.71	0	1	0.70	0	1
Black	0.10	0	1	0.13	0	1
Hispanic	0.13	0	1	0.11	0	1
Other races*	0.06	0	1	0.06	0	1
Living in a MSA with 1 million or more persons	0.38	0	1	0.37	0	1
Living in a MSA with fewer than 1 million persons	0.37	0	1	0.37	0	1
Not living in MSA*	0.25	0	1	0.26	0	1
Number of children aged <18 in household	1.05	0	3	1.16	0	3
Married	0.62	0	1	0.60	0	1
Widowed	0.00	0	1	0.01	0	1
Divorced or separated	0.13	0	1	0.19	0	1
Never married*	0.24	0	1	0.21	0	1
Completed undergraduate/graduate study	0.29	0	1	0.31	0	1
Had some college education	0.24	0	1	0.29	0	1
Completed high school	0.33	0	1	0.30	0	1
Not completed high school*	0.14	0	1	0.10	0	1
Excellent health	0.28	0	1	0.30	0	1
Very good health	0.41	0	1	0.40	0	1
Good health	0.25	0	1	0.24	0	1
Fair health	0.05	0	1	0.06	0	1
Poor health*	0.01	0	1	0.01	0	1
<b>Dependent variables</b>						
Employment (full time/part time) last week	0.94	0	1	0.93	0	1
Working full time last week	0.89	0	1	0.73	0	1
<b>Alcohol variables</b>						
Alcohol abuse and/or dependence in the last 12 months	0.13	0	1	0.06	0	1
Number of days drinking alcohol in the last 12 months	82.07	0	365	48.36	0	365
Number of days drinking alcohol in the last month	6.38	0	30	3.60	0	30
Number of days drank 5+ alcoholic drinks in the last month	2.13	0	30	0.74	0	30
<b>Instrumental variables</b>						
Perceived risk (=1 if there is a slight risk or no risk when people have 4-5 drinks of an alcoholic beverage nearly every day, =0 else)	0.10	0	1	0.04	0	1
Religious influence (=1 if his/her religious beliefs are an important part of his/her life, =0 else)	0.71	0	1	0.79	0	1

\*Omitted dummy variables

good health. Eighty-nine percent of males and seventy-three percent of females were employed full time the previous week. As in the NESARC, alcohol prevalence is higher among males than among females. Around 10 percent of the male sample, but only 4 percent of the female sample, thinks that there is no more than a slight risk of physical and other harm from having four or five drinks nearly every day. Roughly 71 percent of males and 79 percent of females report that religious beliefs are an important part of their lives.

#### 4.2.3. NELS:88

The National Education Longitudinal Study of 1988 (NELS:88), from the U.S. Department of Education's National Center for Education Statistics (NCES), is a longitudinal survey consisting of a base year and four follow-ups. Information on obtaining the data is available at <http://nces.ed.gov/surveys/nels88/>.

In 1988, the first survey was conducted using a nationally representative sample of eighth-graders. These respondents were then re-surveyed in 1990, 1992, 1994 and 2000. The base year and first and second follow-up surveys each consist of about 27,000 respondents. The third follow-up survey consists of approximately 15,000 respondents. The fourth follow-up samples 12,144 respondents who are by then ages 25–28.

Data from the fourth follow-up interview in 2000 will be used in this study since the majority of the respondents had already completed postsecondary education, started or even changed careers, and started to form families. However, some information from the first and second follow-ups will also be used. Relative to the NESARC and the NSDUH, the disadvantages of the NELS:88 are that it contains very few exogenous

variables to serve as controls and the sample size is relatively small. However, an advantage is that the longitudinal aspect of the data provides potential instrumental variables. The most relevant of these are measures of previous alcohol use, which is likely to be correlated with current alcohol use but has no obvious reason to be correlated with current employment, at least once other human capital measures that might be both affected by previous drinking and determinants of current employment are held constant.

#### 4.2.3.1. Dependent Variables

As with the NESARC and the NSDUH, two binary indicators for current employment status, any current employment and current full-time employment, are specified.

#### 4.2.3.2. Alcohol Variables

There are only two measures of current alcohol use reported in the 2000 NELS:88 survey. These are the number of occasions that the respondent drank alcohol in the last 30 days, and drank five or more alcoholic drinks in a row, over the previous two weeks. Both are used in the analysis.

#### 4.2.3.3. Instrumental Variables

Examples of potential instruments in NELS:88 include religious beliefs, the frequency of participation in religious services, the perspective of friends about alcohol use, and alcohol use during the 10<sup>th</sup> and 12<sup>th</sup> grade. Based on the same types of specification tests used for the NESARC and the NSDUH, namely tests for joint



significance and overidentification, two variables were chosen as instruments, indicators of whether the respondent drank on 20 or more occasions in the last 30 days during 10th grade and whether the respondent drank 5 or more drinks in a row on at least 6 occasions in the last two weeks during 12th grade. Information on both of these measures is reported in categorical form, which is converted to binary indicators for use in the analysis. The cutoff thresholds for these variables represent the 95<sup>th</sup> and 99<sup>th</sup> percentiles of the distributions for males and females, respectively.

#### 4.2.3.4. Exogenous Variables

The set of exogenous variables in Model 1 includes age, age squared, and four race dummy variables.<sup>2</sup> The four race indicators consist of *White*, *Black*, *Native American/Alaska Native*, and *Asian/Pacific Islander*, with *Hispanic* as the omitted category. Model 2 contains the same set of exogenous variables as Model 1, plus the number of children and stepchildren in the household, and five indicators for marital status, *Married*, *Cohabiting*, *Widowed*, *Separated*, and *Divorced*, with *Never married* as the omitted category. Model 3 includes the variables in Model 2 plus five dummy variables for educational attainment, *Ph.D. or Professional Doctorate*, *Masters degree*, *Bachelor degree*, *Had some college education*, and *Completed high school*, with *Not completed high school* as the omitted category. No indicators of health status are available, so Model 4 cannot be estimated. The expected coefficient signs are again the same as those described in Section 4.2.1.4.

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<sup>2</sup> Note that there are no MSA residence dummy variables available in NELS:88.

#### 4.2.3.5. Sample Restrictions

After excluding respondents who report school enrollment or keeping house, the NELS:88 samples consist of 3,876 men and 4,638 women.

#### 4.2.3.6. Sample Descriptive Statistics

Table 4 summarizes the NELS:88 sample descriptive statistics. About three quarters of the sample is white. Ninety-two percent of males and eighty-three percent of females are currently working full time or part time. Less than one percent of respondents had completed a Ph.D. or professional doctorate degree, but only about three percent did not complete high school. The number of times the respondent drank alcohol in the last 30 days is about six for males but only three for females, while the number of times the respondent drank five or more drinks in a row over the last two weeks is close to one for males but only 0.30 for females. Around 2 percent of male respondents and 1 percent of female respondents drank on 20 or more occasions in the last 30 days when they were in 10<sup>th</sup> grade. Finally, about 7 percent of male respondents and 2 percent of female respondents drank 5 or more drinks in a row at least 6 times in the last two weeks when they were in 12<sup>th</sup> grade.

**Table 4. Sample descriptive statistics from NELS:88**

Variable	Male (n=3,876)			Female (n=4,638)		
	Mean	Min	Max	Mean	Min	Max
<b>Exogenous variables</b>						
Age	26.39	25	28	26.27	25	28
White	0.75	0	1	0.71	0	1
Black	0.07	0	1	0.09	0	1
Native American/Alaska Native	0.01	0	1	0.01	0	1
Asian/Pacific Islander	0.07	0	1	0.07	0	1
Hispanic*	0.11	0	1	0.11	0	1
Household number of children/stepchildren	0.40	0	7	0.69	0	6
Married	0.34	0	1	0.45	0	1
Cohabiting	0.01	0	1	0.01	0	1
Widowed	0.00	0	0	0.00	0	1
Separated	0.01	0	1	0.01	0	1
Divorced	0.04	0	1	0.05	0	1
Never married*	0.60	0	1	0.48	0	1
Ph.D. or Professional Doctorate	0.00	0	1	0.00	0	1
Master degree	0.01	0	1	0.01	0	1
Bachelor degree	0.33	0	1	0.37	0	1
Had some college education	0.15	0	1	0.19	0	1
Completed high school	0.48	0	1	0.40	0	1
Not completed high school*	0.03	0	1	0.03	0	1
<b>Dependent variables</b>						
Current employment (full time/part time)	0.92	0	1	0.83	0	1
Currently working full time	0.85	0	1	0.71	0	1
<b>Alcohol variables</b>						
Number of occasions drank alcohol in the last 30 days	5.88	0	30	2.92	0	30
Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks	0.96	0	10	0.30	0	10
<b>Instrumental variables</b>						
Drinking at 10th grade (=1 if the respondent drank on 20+ occasions in the last 30 days during 10th grade, =0 else)	0.02	0	1	0.01	0	1
Drinking at 12th grade (=1 if the respondent drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade, =0 else)	0.07	0	1	0.02	0	1

\*Omitted dummy variables

## 5. Estimation Results

### 5.1. Results from NESARC

#### 5.1.1. Alcohol Abuse and/or Dependence

Table 5 summarizes the 2SLS and OLS regression estimates of the effects of past year and prior alcohol abuse and/or dependence on the probability of current full or part time employment for males. In the first stage regressions, the  $t$  tests for individual significance and the  $F$  tests for joint significance show that both instrumental variables are highly significant and positively related to alcohol abuse and/or dependence, indicating that the models are overidentified. The tests of overidentification fail to reject the null hypothesis that the instrumental variables are uncorrelated with the residuals in the employment equations. This suggests that the identification restrictions are valid, and therefore 2SLS will produce consistent estimates of the causal effect of alcohol abuse and/or dependence on employment.

For all four model specifications, coefficients of the instruments in the first stage regressions imply that a respondent with an alcoholic father/mother or brother/sister is about 11 percentage points more likely to develop symptoms of alcohol abuse and/or dependence prior to the last 12 months, and three to five percentage points more likely to develop symptoms of alcohol abuse and/or dependence in the last 12 months. The 2SLS estimates in Model 1 imply reductions in the probability of current employment of 10.2 percentage points from alcohol abuse and/or dependence occurring prior to the past year

Table 5. Regression estimates of binary alcohol measures on the probability of current employment (full time/part time): the male sample from NESARC

Alcohol variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Alcohol abuse and/or dependence prior to the last 12 months</b>	-0.1022 ** (0.0496)	-0.0169 ** (0.0069)	-0.0864 * (0.0509)	-0.0141 ** (0.0069)	-0.0413 (0.0506)	-0.0144 ** (0.0068)	-0.0122 (0.0483)	-0.0050 (0.0064)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.1163 *** (0.0136)		0.1131 *** (0.0136)		0.1124 *** (0.0137)		0.1089 *** (0.0136)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.1199 *** (0.0146)		0.1159 *** (0.0146)		0.1156 *** (0.0146)		0.1134 *** (0.0146)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	87.55 ***		81.58 ***		80.43 ***		76.91 ***	
Overidentification test (p-value)	0.8376		0.8941		0.8441		0.6718	
Hausman Statistic	-1.7364 *		-1.4347		-0.5356		-0.1503	
<b>Alcohol abuse and/or dependence in the last 12 months</b>	-0.2666 ** (0.1328)	-0.0229 ** (0.0100)	-0.2368 * (0.1439)	-0.0095 (0.0100)	-0.1186 (0.1422)	-0.0088 (0.0099)	-0.0470 (0.1357)	-0.0052 (0.0092)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0545 *** (0.0095)		0.0508 *** (0.0095)		0.0502 *** (0.0095)		0.0487 *** (0.0095)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0329 *** (0.0102)		0.0287 *** (0.0101)		0.0279 *** (0.0102)		0.0271 *** (0.0101)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	26.42 ***		22.21 ***		21.41 ***		20.16 ***	
Overidentification test (p-value)	0.8256		0.7997		0.9985		0.7265	
Hausman Statistic	-1.8409 *		-1.5841		-0.7747		-0.3090	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A1 and A2 for full estimation results.

and 26.7 percentage points from past year alcohol abuse and/or dependence. All else equal, the likelihood of current employment for an individual with prior and past year alcohol abuse and/or dependence problems is, on average, 11 percent (0.10/0.89) and 30 percent (0.27/0.89) less than for an individual without prior and past year alcohol abuse and/or dependence problems.<sup>3</sup> Both of these estimates are statistically significant at the five percent level. Effects of past year alcohol abuse and/or dependence are larger than those of prior alcohol abuse and/or dependence in both the 2SLS and OLS models. This is expected, since individuals who previously abused or had been dependent on alcohol might have stopped drinking in the past year and thus have fewer limitations preventing them from working currently. These estimates represent the total effect of alcohol abuse and/or dependence on employment propensities, including indirect effects through human capital variables not held constant in Model 1.

The OLS estimates are negative, but much smaller than those from 2SLS. This implies that bias dampening the negative effects of alcohol use, which arises from reverse causation (i.e. the income effect running from employment to alcohol use) and measurement error, outweighs bias in the opposite direction from unobserved heterogeneity. In Model 1, Hausman tests reject the null hypothesis that alcohol use is exogenous, meaning that the alcohol variables are endogenous with respect to employment and the 2SLS estimates should thus be used to make inferences about causal effects of past alcohol abuse and/or dependence on the probability of current employment.

In Model 2, which adds the number of children and marital status as explanatory

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<sup>3</sup> To obtain the percentage effect, the coefficient is divided by the sample mean of the dependent variable.

variables, the effects become slightly smaller and less significant. The effects then become much smaller and lose significance in Models 3 and 4, which also control for educational attainment and health status, respectively. This implies that there is no significant direct effect of past alcohol abuse and/or dependence on employment propensity. In addition, Hausman statistics are no longer statistically significant.

Therefore, the results from Table 5 suggest that, for males, past alcohol abuse and/or dependence does not directly affect current employment, but indirectly affects current employment through human capital components, specifically health status and educational attainment. In particular, the estimates in Model 4 are much smaller than those in Model 3, implying that the indirect effects through health capital are substantial. This is not surprising, since health status affects the capacity to work as well as the ability to accumulate other human capital components.

Complete second stage regression results in Appendices A1 and A2 show that the educational attainment and health status coefficients are positive and statistically significant in Model 4, supporting the above conclusion. Appendices A1 and A2 also show that the signs of the coefficients of the other covariates are as hypothesized in Section 4.

Table 6 is identical to Table 5, except that the dependent variable is an indicator of working full time. Since the first stage regressions are exactly the same as those in Table 5, the only difference between the tables is in the second stage drinking coefficients. The 2SLS estimates in Model 1 are similar to those in Table 5. They imply that prior and past year alcohol abuse and/or dependence significantly reduce the probability of currently working full time by 12.3 and 30.4 percentage points,

Table 6. Regression estimates of binary alcohol measures on the probability of currently working full time (35+ hours a week): the male sample from NESARC

Alcohol variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Alcohol abuse and/or dependence prior to the last 12 months</b>								
	-0.1226 ** (0.0564)	-0.0138 * (0.0079)	-0.1080 * (0.0576)	-0.0107 (0.0078)	-0.0521 (0.0571)	-0.0113 (0.0077)	-0.0210 (0.0554)	-0.0012 (0.0073)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.1163 *** (0.0136)		0.1131 *** (0.0136)		0.1124 *** (0.0137)		0.1089 *** (0.0136)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.1199 *** (0.0146)		0.1159 *** (0.0146)		0.1156 *** (0.0146)		0.1134 *** (0.0146)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	87.55 ***		81.58 ***		80.43 ***		76.91 ***	
Overidentification test (p-value)	0.7544		0.6572		0.6996		0.8144	
Hausman Statistic	-1.9479 *		-1.7024 *		-0.7224		-0.3611	
<b>Alcohol abuse and/or dependence in the last 12 months</b>								
	-0.3038 ** (0.1502)	-0.0351 *** (0.0113)	-0.2744 * (0.1625)	-0.0188 * (0.0113)	-0.1271 (0.1601)	-0.0182 (0.0112)	-0.0485 (0.1556)	-0.0140 (0.0106)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0545 *** (0.0095)		0.0508 *** (0.0095)		0.0502 *** (0.0095)		0.0487 *** (0.0095)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0329 *** (0.0102)		0.0287 *** (0.0101)		0.0279 *** (0.0102)		0.0271 *** (0.0101)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	26.42 ***		22.21 ***		21.41 ***		20.16 ***	
Overidentification test (p-value)	0.4588		0.3985		0.5561		0.7492	
Hausman Statistic	-1.7934 *		-1.5764		-0.6817		-0.2226	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A3 and A4 for full estimation results.



respectively. In percentage terms, the likelihood of currently working full time for an individual with prior and past year alcohol abuse and/or dependence problems is, on average, 14 percent (0.12/0.86) and 35 percent (0.30/0.86) less than for an individual without prior and past year alcohol abuse and/or dependence problems. The Hausman statistics in Model 1 are statistically significant, suggesting that the alcohol variables are endogenous with respect to labor market outcomes, and the 2SLS estimates in Model 1 should be used to make inferences about causal effects of past alcohol abuse and/or dependence on the probability of currently working full time.

As expected, employment effects in Table 6 are larger than those in Table 5, because problem drinking can cause workers to drop out of full-time jobs and work part time instead. As in Table 5, the magnitudes of the OLS estimates are smaller than those from 2SLS. After human capital variables are added into the model, the 2SLS estimates became smaller and insignificant, suggesting the same conclusion as that from Table 5. Complete second stage regression results in Appendices A3 and A4 show that the educational attainment and health status coefficients are again positive and statistically significant in Model 4.

Table 7 summarizes the 2SLS and OLS regression results of the effect of prior and past year alcohol abuse and/or dependence on the probability of current employment for females. Similar to the male sample, the  $t$  tests for individual significance and  $F$  tests for joint significance of the instrumental variables, together with the tests of overidentification, indicate that 2SLS produces consistent causal effect estimates for all four models. Both instruments are positively correlated with alcohol abuse and/or dependence in the first stage regressions, and their coefficients slightly decrease as

Table 7. Regression estimates of binary alcohol measures on the probability of current employment (full time/part time): the female sample from NESARC

Alcohol variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Alcohol abuse and/or dependence prior to the last 12 months</b>	-0.2342 *** (0.0777)	-0.0084 (0.0089)	-0.1454 * (0.0746)	-0.0061 (0.0088)	-0.0948 (0.0734)	-0.0103 (0.0088)	0.0006 (0.0685)	-0.0074 (0.0082)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0861 *** (0.0101)		0.0866 *** (0.0101)		0.0865 *** (0.0101)		0.0858 *** (0.0101)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0615 *** (0.0110)		0.0637 *** (0.0110)		0.0642 *** (0.0110)		0.0638 *** (0.0110)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	66.08 ***		67.93 ***		68.01 ***		67.05 ***	
Overidentification test (p-value)	0.7767		0.9969		0.7349		0.9985	
Hausman Statistic	-2.9251 ***		-1.8793 *		-1.1599		0.1176	
<b>Alcohol abuse and/or dependence in the last 12 months</b>	-0.7488 *** (0.2794)	-0.0243 (0.0155)	-0.4936 * (0.2692)	-0.0149 (0.0154)	-0.3504 (0.2678)	-0.0122 (0.0153)	0.0020 (0.2426)	-0.0150 (0.0142)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0302 *** (0.0058)		0.0293 *** (0.0058)		0.0288 *** (0.0058)		0.0289 *** (0.0058)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0107 * (0.0064)		0.0108 * (0.0063)		0.0101 (0.0064)		0.0101 (0.0064)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	17.82 ***		16.97 ***		16.04 ***		16.10 ***	
Overidentification test (p-value)	0.3826		0.6812		0.9813		0.9969	
Hausman Statistic	-2.5972 ***		-1.7809 *		-1.2650		0.0701	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A5 and A6 for full estimation results.

human capital covariates are added. An individual with either an alcoholic father/mother or brother/sister is six to nine percentage points more likely to develop symptoms of alcohol abuse and/or dependence prior to the last 12 months, and one to three percentage points more likely to develop symptoms of alcohol abuse and/or dependence in the last 12 months.

The 2SLS estimates in Model 1, which represent the total employment effect of alcohol abuse and/or dependence for females, show that prior and past year alcohol abuse and/or dependence significantly reduce the probability of current employment by 23.4 and 74.9 percentage points, respectively. Once again, the effects of past year alcohol abuse and/or dependence are larger than those of prior alcohol abuse and/or dependence using both 2SLS and OLS. However, the 2SLS effects seem implausibly large, as they imply reductions in current employment of 27 percent (0.23/0.86) from alcohol problems prior to the past year and 87 percent (0.75/0.86) from past year alcohol problems. Their standard errors are also large, meaning that statistical power is inadequate to identify effects of reasonable size.

OLS estimates are also negative, but are statistically insignificant and much smaller than are those from 2SLS. Hausman tests are significant in Model 1, again suggesting that the alcohol variables are endogenous with respect to the probability of current employment and 2SLS estimates should be used to infer causal effects of past alcohol abuse and/or dependence.

After adding other covariates, the effects become smaller and insignificant as shown in Models 2 and 3 for both 2SLS and OLS methods. The estimates even become positive, though statistically insignificant, in Model 4. In addition, the Hausman

statistics are no longer statistically significant. Thus, these results for females suggest the same conclusion as that for males in Table 5, namely negative employment effects of problem drinking that occur entirely through human capital accumulation.

Table 8 summarizes 2SLS and OLS regression results for the effect of prior and past year alcohol abuse and/or dependence on the probability of working full time for females. Once again, the first stage regressions are the same as those in the preceding table. The 2SLS estimates in Model 1 imply that prior and past year alcohol abuse and/or dependence significantly reduce the probability of currently working full time by 35.4 and 120.8 percentage points, respectively. The full-time effects in Table 8 are larger than those for any employment in Table 7, and the effect of past year alcohol abuse and/or dependence is again much higher than that of alcohol abuse and/or dependence prior to the last 12 months. However, it is clear, particularly for the past year measure, that the 2SLS estimates are again implausibly large. The accompanying standard errors continue to be extremely large, relative to the full-time employment rate of 72 percent. For example, to be statistically significant, the 2SLS estimate for past year drinking would have to imply a reduction in full-time employment propensity of nearly 100 percent.

The 2SLS estimates become slightly smaller and insignificant when the human capital variables are added to the regression, implying that prior and past year alcohol abuse and/or dependence have no significant direct effects on the probability of working full time for females. Moreover, complete second stage regression results in Appendices A7 and A8 show that all the estimated human capital variable coefficients in Model 4 are statistically significant and positively affect employment propensity for both the 2SLS and OLS approaches, implying that prior and past year alcohol abuse and/or dependence

Table 8. Regression estimates of binary alcohol measures on the probability of currently working full time (35+ hours a week); the female sample from NESARC

Alcohol variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Alcohol abuse and/or dependence prior to the last 12 months</b>								
	-0.3544 *** (0.1040)	0.0190 (0.0117)	-0.2490 ** (0.0990)	0.0110 (0.0116)	-0.1727 * (0.0967)	0.0057 (0.0114)	-0.0821 (0.0932)	0.0090 (0.0111)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0861 *** (0.0101)		0.0866 *** (0.0101)		0.0865 *** (0.0101)		0.0858 *** (0.0101)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0615 *** (0.0110)		0.0637 *** (0.0110)		0.0642 *** (0.0110)		0.0638 *** (0.0110)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	66.08 ***		67.93 ***		68.01 ***		67.05 ***	
Overidentification test (p-value)	0.5066		0.2411		0.1225		0.1762	
Hausman Statistic	-3.6144 ***		-2.6440 ***		-1.8584 *		-0.9839	
<b>Alcohol abuse and/or dependence in the last 12 months</b>								
	-1.2083 *** (0.3889)	0.0138 (0.0204)	-0.9339 ** (0.3721)	0.0014 (0.0202)	-0.7258 ** (0.3651)	0.0063 (0.0200)	-0.3881 (0.3362)	0.0039 (0.0193)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0302 *** (0.0058)		0.0293 *** (0.0058)		0.0288 *** (0.0058)		0.0289 *** (0.0058)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0107 * (0.0064)		0.0108 * (0.0063)		0.0101 (0.0064)		0.0101 (0.0064)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	17.82 ***		16.97 ***		16.04 ***		16.10 ***	
Overidentification test (p-value)	0.9289		0.5858		0.3067		0.2777	
Hausman Statistic	-3.1470 ***		-2.5174 **		-2.0085 **		-1.1678	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A7 and A8 for full estimation results.

have significant indirect effects on the probability of working full time for females through human capital components. OLS estimates are positive in all models, suggesting that income effects cause OLS to underestimate the negative effect of problem drinking on the probability of working full time for females.

### 5.1.2. Frequencies of Alcohol Consumption

Table 9 summarizes the results from the current employment regressions for males in which the four continuous alcohol measures are used. The highly significant  $t$  and  $F$  test statistics in the first stage regressions, combined with high overidentification test  $p$ -values, show that the instrumental variables are appropriate for making inferences about causal effects of alcohol consumption.

As before, estimates in Model 1 represent total effects. Both 2SLS and OLS estimates show that alcohol consumption negatively and significantly affects the probability of current employment. 2SLS effects are larger than those from OLS, but the Hausman test rejects exogeneity of alcohol use for only one of the four drinking variables, and never does so in Models 2–4. Thus the relevant causal effect interpretations are those from OLS. Drinking one alcoholic beverage each week in the previous 12 months (52 weeks) reduces the probability of current employment by 0.2 percentage points ( $-0.000031 \times 52$ ), which is equivalent to 0.2 percent ( $-0.000031 \times 52 / 0.89$ ). Drinking five or more alcoholic beverages once each week in the previous 12 months reduces the probability of current employment by 1.6 percentage points ( $-0.000303 \times 52$ ), or 1.8 percent ( $-0.000303 \times 52 / 0.89$ ). Getting drunk once a week in the last 12 months reduces the probability of current employment by 2.1 percentage points ( $-0.000402 \times 52$ ), or 2.3 percent

Table 9. Regression estimates of continuous alcohol measures on the probability of current employment (full time/part time): the male sample from NESARC

Alcohol variables	Male (n=8673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of drinks consumed in the last 12 months</b>								
	-0.000176 *	-0.000031 ***	-0.000157	-0.000025 ***	-0.000086	-0.000021 ***	-0.000046	-0.000018 ***
	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0000)
Alcoholic father/mother (1 <sup>st</sup> stage)	89.9339 ***		81.8730 ***		77.0466 ***		74.4399 ***	
	(16.1563)		(16.0734)		(16.0680)		(16.0509)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	24.6531		15.3125		9.8275		8.5371	
	(17.3067)		(17.2308)		(17.2308)		(17.2032)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	18.84 ***		14.81 ***		12.65 ***		11.74 ***	
Overidentification test (p-value)	0.5047		0.4893		0.7912		0.8274	
Hausman Statistic	-1.5722		-1.2824		-0.6031		-0.2714	
<b>Number of days drank 5+ drinks in the last 12 months</b>								
	-0.001325 **	-0.000303 ***	-0.001216	-0.000236 ***	-0.000670	-0.000188 ***	-0.000297	-0.000157 ***
	(0.0007)	(0.0001)	(0.0007)	(0.0001)	(0.0008)	(0.0001)	(0.0008)	(0.0000)
Alcoholic father/mother (1 <sup>st</sup> stage)	11.2847 ***		10.2260 ***		9.4532 ***		9.1054 ***	
	(1.8583)		(1.8459)		(1.8414)		(1.8387)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	5.9464 ***		4.7028 **		3.7983 *		3.6102 *	
	(1.9907)		(1.9788)		(1.9740)		(1.9707)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	27.62 ***		21.55 ***		17.56 ***		16.26 ***	
Overidentification test (p-value)	0.7495		0.7127		0.9299		0.7556	
Hausman Statistic	-1.5631		-1.3252		-0.5997		-0.1798	
<b>Number of days drunk in the last 12 months</b>								
	-0.003925 *	-0.000402 ***	-0.003409	-0.000338 ***	-0.001703	-0.000316 ***	-0.000596	-0.000250 ***
	(0.0020)	(0.0001)	(0.0021)	(0.0001)	(0.0021)	(0.0001)	(0.0019)	(0.0001)
Alcoholic father/mother (1 <sup>st</sup> stage)	3.4518 ***		3.2780 ***		3.2010 ***		3.1327 ***	
	(1.0809)		(1.0811)		(1.0825)		(1.0826)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	2.6419 **		2.4407 **		2.3568 **		2.3166 **	
	(1.1579)		(1.1589)		(1.1604)		(1.1603)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	9.54 ***		8.38 ***		7.87 ***		7.56 ***	
Overidentification test (p-value)	0.9686		0.9354		0.9330		0.7005	
Hausman Statistic	-1.7250 *		-1.4454		-0.6720		-0.1787	
<b>Average daily volume of ethanol consumed in the last 12 months</b>								
	-0.077235 *	-0.009342 ***	-0.069738	-0.007761 ***	-0.038149	-0.006925 ***	-0.017712	-0.004498 ***
	(0.0417)	(0.0015)	(0.0458)	(0.0015)	(0.0469)	(0.0015)	(0.0448)	(0.0014)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.1977 ***		0.1807 ***		0.1686 ***		0.1628 ***	
	(0.0617)		(0.0616)		(0.0616)		(0.0616)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0917		0.0739		0.0593		0.0535	
	(0.0661)		(0.0660)		(0.0661)		(0.0660)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	7.27 ***		5.79 ***		4.79 ***		4.39 ***	
Overidentification test (p-value)	0.7100		0.6900		0.9075		0.7715	
Hausman Statistic	-1.6312		-1.3549		-0.6660		-0.2949	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%. \*\*Statistically significant at 5%. \*Statistically significant at 10%.

Model 1 contains general exogenous variables. Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators. Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A9-A12 for full estimation results.

( $-0.000402 \times 52 / 0.89$ ). As expected, the estimates become larger, in percentage terms, as drinking becomes heavier, assuming that many male respondents require more than five drinks in one sitting to consider themselves drunk. Since alcohol tolerance levels vary across individuals, the number of days drunk in the last 12 months might well be the most relevant of these three drinking measures.

Drinking an additional ounce of ethanol daily in the previous 12 months reduces the probability of current employment by 0.9 percentage points, or one percent. A 12-ounce bottle of beer, five ounce glass of wine, and a 1.5 shot of 80-proof liquor each contain about 0.6 ounces of ethanol. Therefore, an additional one of these standard alcoholic drinks each day would reduce the probability of current employment by 0.6 percent ( $-0.009342 \times 0.6 / 0.89$ ). This is a smaller effect than implied by drinking measures above, but does not take into account the extent to which consumption is spread out over time. For instance, getting drunk once/week and not drinking at all the remainder of the week seems likely to be more damaging to productivity than having one drink per day, given that the medical literature has found health benefits to the latter, even though the number of drinks consumed weekly might be the same in each scenario.

As before, the negative effects of drinking diminish in size substantially upon adding the human capital variables in Models 2, 3 and 4. However, the OLS effects are still statistically significant in all four variations of Model 4. The complete second stage regression results in Appendices A9 to A12 again show that all human capital components significantly and positively affect the probability of current employment for males. Overall, the implication is that alcohol consumption has both direct and indirect effects on current employment for males, though both are small.



Table 10 summarizes the 2SLS and OLS regression results of the effects of the four numerical alcohol consumption measures on the probability of working full time for males. The pattern of results is quite similar to that from Table 9, with each having identical first stage regressions. Effects on working full time are again larger than those on any current employment. 2SLS effects are much larger than are those of OLS, but also have large standard errors. Thus Hausman tests show no statistical difference between 2SLS and OLS except for in one Model 1 specification. OLS estimates are therefore preferable to 2SLS estimates in making inferences about the causal effect of alcohol consumption on the probability of working full time.

Drinking one alcoholic beverage each week in the previous 12 months reduces the probability of working full time by 0.2 percentage points ( $-0.000044 \times 52$ ), or 0.3 percent ( $-0.000044 \times 52 / 0.86$ ). Drinking five or more alcoholic beverages once each week in the previous 12 months reduces the probability of working full time by 2.0 percentage points ( $-0.000375 \times 52$ ), or 2.3 percent ( $-0.000375 \times 52 / 0.86$ ). Getting drunk once a week in the last 12 months reduces the probability of working full time by 2.8 percentage points ( $-0.000533 \times 52$ ) or 3.2 percent ( $-0.000533 \times 52 / 0.86$ ). As in Table 9, the estimates grow in magnitude as the intensity of drinking increases. Meanwhile, drinking an additional standard alcoholic beverage, i.e. 0.6 ounces of ethanol, daily in the previous 12 months reduces the probability of working full time by 0.7 percentage points ( $-0.011950 \times 0.6$ ), or 0.8 percent ( $-0.011950 \times 0.6 / 0.86$ ).

Tables 11 and 12 summarize the 2SLS and OLS regression results for the effect of the four numerical drinking measures on the probability of current employment and on

Table 10. Regression estimates of continuous alcohol measures on the probability of currently working full time (35+ hours a week): the male sample from NESARC

Alcohol variables	Male (n=8,673)								
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)		
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	
<b>Number of drinks consumed in the last 12 months</b>									
	-0.000189 *	-0.000044 ***	-0.000164	-0.000036 ***	-0.000070	-0.000031 ***	-0.000023	-0.000028 ***	
	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	
Alcoholic father/mother (1 <sup>st</sup> stage)	89.9339 ***		81.8730 ***		77.0466 ***		74.4399 ***		
	(16.1563)		(16.0734)		(16.0680)		(16.0509)		
Alcoholic brother/sister (1 <sup>st</sup> stage)	24.6531		15.3125		9.8275		8.5371		
	(17.3067)		(17.2308)		(17.2308)		(17.2032)		
F-statistic (IV's in the 1 <sup>st</sup> stage)	18.84 ***		14.81 ***		12.65 ***		11.74 ***		
Overidentification test (p-value)	0.2359		0.1996		0.4165		0.6859		
Hausman Statistic	-1.3933		-1.1001		-0.3144		0.0440		
<b>Number of days drank 5+ drinks in the last 12 months</b>									
	-0.001491 **	-0.000375 ***	-0.001376	-0.000295 ***	-0.000663	-0.000237 ***	-0.000246	-0.000203 ***	
	(0.0007)	(0.0001)	(0.0008)	(0.0001)	(0.0009)	(0.0001)	(0.0009)	(0.0001)	
Alcoholic father/mother (1 <sup>st</sup> stage)	11.2847 ***		10.2260 ***		9.4532 ***		9.1054 ***		
	(1.8583)		(1.8459)		(1.8414)		(1.8387)		
Alcoholic brother/sister (1 <sup>st</sup> stage)	5.9464 ***		4.7028 **		3.7983 *		3.6102 *		
	(1.9907)		(1.9788)		(1.9740)		(1.9707)		
F-statistic (IV's in the 1 <sup>st</sup> stage)	27.62 ***		21.55 ***		17.56 ***		16.26 ***		
Overidentification test (p-value)	0.3974		0.3336		0.5034		0.7252		
Hausman Statistic	-1.5084		-1.2948		-0.4710		-0.0489		
<b>Number of days drunk in the last 12 months</b>									
	-0.004573 **	-0.000533 ***	-0.004089 *	-0.000453 ***	-0.001964	-0.000425 ***	-0.000764	-0.000357 ***	
	(0.0023)	(0.0001)	(0.0024)	(0.0001)	(0.0023)	(0.0001)	(0.0022)	(0.0001)	
Alcoholic father/mother (1 <sup>st</sup> stage)	3.4518 ***		3.2780 ***		3.2010 ***		3.1327 ***		
	(1.0809)		(1.0811)		(1.0825)		(1.0826)		
Alcoholic brother/sister (1 <sup>st</sup> stage)	2.6419 **		2.4407 **		2.3568 **		2.3166 **		
	(1.1579)		(1.1589)		(1.1604)		(1.1603)		
F-statistic (IV's in the 1 <sup>st</sup> stage)	9.54 ***		8.38 ***		7.87 ***		7.56 ***		
Overidentification test (p-value)	0.5966		0.5226		0.6176		0.7757		
Hausman Statistic	-1.7417 *		-1.5054		-0.6619		-0.1831		
<b>Average daily volume of ethanol consumed in the last 12 months</b>									
	-0.085961 *	-0.011950 ***	-0.077880	-0.009969 ***	-0.036625	-0.008936 ***	-0.013234	-0.006506 ***	
	(0.0469)	(0.0017)	(0.0515)	(0.0017)	(0.0524)	(0.0017)	(0.0512)	(0.0016)	
Alcoholic father/mother (1 <sup>st</sup> stage)	0.1977 ***		0.1807 ***		0.1686 ***		0.1628 ***		
	(0.0617)		(0.0616)		(0.0616)		(0.0616)		
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.0917		0.0739		0.0593		0.0535		
	(0.0661)		(0.0660)		(0.0661)		(0.0660)		
F-statistic (IV's in the 1 <sup>st</sup> stage)	7.27 ***		5.79 ***		4.79 ***		4.39 **		
Overidentification test (p-value)	0.3881		0.3354		0.4915		0.7154		
Hausman Statistic	-1.5799		-1.3205		-0.5286		-0.1314		

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%. \*\*Statistically significant at 5%. \*Statistically significant at 10%.

Model 1 contains general exogenous variables. Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators. Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A1.3-A.16 for full estimation results.

Table 11. Regression estimates of continuous alcohol measures on the probability of current employment (full time/part time): the female sample from NESARC

Alcohol variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of drinks consumed in the last 12 months</b>	-0.000596 *** (0.0002)	-0.000015 (0.0000)	-0.000362 * (0.0002)	-0.000012 (0.0000)	-0.000229 (0.0002)	-0.000008 (0.0000)	0.000002 (0.0002)	-0.000016 (0.0000)
Alcoholic father/mother (1 <sup>st</sup> stage)	26.8696 *** (7.1163)		26.9459 *** (7.1137)		26.5282 *** (7.1189)		26.8724 *** (7.1210)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	32.4049 *** (7.7555)		33.3923 *** (7.7585)		32.6577 *** (7.7736)		33.4474 *** (7.7724)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	20.60 ***		21.20 ***		20.27 ***		21.05 ***	
Overidentification test (p-value)	0.7580		0.6982		0.5617		0.9999	
Hausman Statistic	-2.7480 ***		-1.7982 *		-1.1454		0.1007	
<b>Number of days drank 5+ drinks in the last 12 months</b>	-0.005564 *** (0.0020)	-0.000304 ** (0.0001)	-0.003533 * (0.0019)	-0.000250 ** (0.0001)	-0.002301 (0.0019)	-0.000174 (0.0001)	0.000016 (0.0018)	-0.000165 (0.0001)
Alcoholic father/mother (1 <sup>st</sup> stage)	2.8946 *** (0.7489)		2.7897 *** (0.7491)		2.6909 *** (0.7488)		2.6585 *** (0.7494)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	3.4595 *** (0.8162)		3.4038 *** (0.8170)		3.2268 *** (0.8177)		3.2475 *** (0.8180)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	21.37 ***		20.15 ***		18.32 ***		18.22 ***	
Overidentification test (p-value)	0.7635		0.7064		0.5702		0.9599	
Hausman Statistic	-2.6880 ***		-1.7329 *		-1.1040		0.1020	
<b>Number of days drunk in the last 12 months</b>	-0.016028 ** (0.0081)	-0.000187 (0.0001)	-0.010464 (0.0068)	-0.000174 (0.0001)	-0.006657 (0.0059)	-0.000151 (0.0001)	0.000043 (0.0049)	-0.000150 (0.0001)
Alcoholic father/mother (1 <sup>st</sup> stage)	1.1429 * (0.6771)		1.0877 (0.6783)		1.0838 (0.6788)		1.0823 (0.6795)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	1.0601 (0.7379)		1.0221 (0.7397)		1.0304 (0.7412)		1.0431 (0.7416)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	3.19 **		2.89 *		2.88 *		2.90 *	
Overidentification test (p-value)	0.9912		0.8827		0.6804		0.9992	
Hausman Statistic	-1.9558 *		-1.5057		-1.0960		0.0394	
<b>Average daily volume of ethanol consumed in the last 12 months</b>	-0.206406 *** (0.0790)	-0.007928 ** (0.0034)	-0.123943 * (0.0704)	-0.007412 ** (0.0034)	-0.075313 (0.0685)	-0.06248 * (0.0034)	0.000545 (0.0617)	-0.007025 ** (0.0031)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0623 ** (0.0264)		0.0626 ** (0.0264)		0.0617 ** (0.0265)		0.0614 ** (0.0265)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.1042 *** (0.0288)		0.1067 *** (0.0288)		0.1048 *** (0.0289)		0.1070 *** (0.0289)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	11.94 ***		12.25 ***		11.78 ***		12.06 ***	
Overidentification test (p-value)	0.5322		0.5485		0.4722		0.9591	
Hausman Statistic	-2.5135 **		-1.6572 *		-1.0096		0.1229	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%. \*\*Statistically significant at 5%. \*Statistically significant at 10%.

Model 1 contains general exogenous variables. Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators. Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A17-A20 for full estimation results.

Table 12. Regression estimates of continuous alcohol measures on the probability of currently working full time (35+ hours a week): the female sample from NESARC

Alcohol variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of drinks consumed in the last 12 months</b>	-0.000850 *** (0.0003)	0.000002 (0.0000)	-0.000561 ** (0.0003)	-0.000007 (0.0000)	-0.000364 (0.0003)	-0.000002 (0.0000)	-0.000140 (0.0002)	-0.000009 (0.0000)
Alcoholic father/mother (1 <sup>st</sup> stage)	26.8696 *** (7.1163)		26.9459 *** (7.1137)		26.5282 *** (7.1189)		26.8724 *** (7.1210)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	32.4049 *** (7.7555)		33.3923 *** (7.7585)		32.6577 *** (7.7736)		33.4474 *** (7.7724)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	20.60 ***		21.20 ***		20.27 ***		21.05 ***	
Overidentification test (p-value)	0.2128		0.1080		0.0653		0.1330	
Hausman Statistic	-2.9981 ***		-2.1358 **		-1.4236		-0.5541	
<b>Number of days drank 5+ drinks in the last 12 months</b>	-0.007938 *** (0.0026)	-0.000076 (0.0002)	-0.005489 ** (0.0025)	-0.000109 (0.0002)	-0.003686 (0.0026)	-0.000001 (0.0002)	-0.001453 (0.0024)	0.000011 (0.0002)
Alcoholic father/mother (1 <sup>st</sup> stage)	2.8946 *** (0.7489)		2.7897 *** (0.7491)		2.6909 *** (0.7488)		2.6585 *** (0.7494)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	3.4595 *** (0.8162)		3.4038 *** (0.8170)		3.2268 *** (0.8177)		3.2475 *** (0.8180)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	21.37 ***		20.15 ***		18.32 ***		18.22 ***	
Overidentification test (p-value)	0.2139		0.1118		0.0685		0.1348	
Hausman Statistic	-2.9847 ***		-2.1244 **		-1.4444		-0.6076	
<b>Number of days drunk in the last 12 months</b>	-0.023566 ** (0.0115)	-0.000057 (0.0002)	-0.017139 * (0.0100)	-0.000072 (0.0002)	-0.011404 (0.0084)	-0.000040 (0.0002)	-0.004938 (0.0069)	-0.000039 (0.0002)
Alcoholic father/mother (1 <sup>st</sup> stage)	1.1429 * (0.6771)		1.0877 (0.6783)		1.0838 (0.6788)		1.0823 (0.6795)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	1.0601 (0.7379)		1.0221 (0.7397)		1.0304 (0.7412)		1.0431 (0.7416)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	3.19 **		2.89 *		2.88 *		2.90 *	
Overidentification test (p-value)	0.5378		0.3127		0.1535		0.1687	
Hausman Statistic	-2.0463 **		-1.7148 *		-1.3574		-0.7054	
<b>Average daily volume of ethanol consumed in the last 12 months</b>	-0.282608 *** (0.1057)	-0.004227 (0.0045)	-0.178972 * (0.0937)	-0.005630 (0.0044)	-0.106929 (0.0901)	-0.004103 (0.0044)	-0.033081 (0.0838)	-0.004792 (0.0042)
Alcoholic father/mother (1 <sup>st</sup> stage)	0.0623 ** (0.0264)		0.0626 ** (0.0264)		0.0617 ** (0.0265)		0.0614 ** (0.0265)	
Alcoholic brother/sister (1 <sup>st</sup> stage)	0.1042 *** (0.0288)		0.1067 *** (0.0288)		0.1048 *** (0.0289)		0.1070 *** (0.0289)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	11.94 ***		12.25 ***		11.78 ***		12.06 ***	
Overidentification test (p-value)	0.1251		0.0680		0.0455		0.1169	
Hausman Statistic	-2.6351 ***		-1.8529 *		-1.1423		-0.3380	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%. \*\*Statistically significant at 5%. \*Statistically significant at 10%.

Model 1 contains general exogenous variables. Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators. Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix A21-A24 for full estimation results.

the probability of working full time, respectively, for females. Except for the number of days getting drunk, the statistics in the first stage regression and the tests of overidentification for other alcohol variables show that the instrumental variables are adequate. Full-time effects in Table 12 are again larger than employment effects in Table 11. Both the 2SLS and OLS estimates in Model 1 show negative effects of all four alcohol measures, but the OLS estimates are less significant and much smaller than those of the 2SLS method.

Hausman tests for exogeneity in Models 1 and 2 suggest that the alcohol variables are endogenous with respect to employment, but exogeneity cannot be rejected in Models 3 and 4. Therefore, the total causal effects can be interpreted from the 2SLS estimates in Model 1 while the direct causal effects can be interpreted from the OLS estimates in Model 4. However, the OLS estimates in Model 4 are very small and statistically insignificant, implying that there is no direct effect of alcohol consumption on employment propensity. The total effects from Model 1 can be interpreted as follows. Drinking one alcoholic beverage each week in the previous 12 months reduces the probability of current employment and the probability of working full time by 3.1 percentage points ( $-0.000596 \times 52$ ) and 4.4 percentage points ( $-0.000850 \times 52$ ), respectively. Drinking five or more alcoholic beverages once each week in the previous 12 months reduces the probability of current employment and the probability of working full time by 28.9 percentage points ( $-0.005564 \times 52$ ) and 41.2 percentage points ( $-0.007938 \times 52$ ), respectively. Getting drunk once a week in the last 12 months reduces the probability of current employment and the probability of working full time by 83.3 percentage points ( $-0.016028 \times 52$ ) and 122.5 percentage points ( $-0.023566 \times 52$ ),

respectively. Similar to in Tables 9 and 10, the estimates become larger as drinking becomes heavier. Drinking an additional 0.6 ounce of ethanol daily in the previous 12 months reduces the probability of current employment and the probability of working full time by 12.4 percentage points ( $-0.206406 \times 0.6$ ) and 16.9 percentage points ( $-0.282608 \times 0.6$ ), respectively.

Comparing the total effects from Tables 9 and 10 and Tables 11 and 12, the effects of alcohol consumption for females are much larger than those for males. Substantively, this could be because alcohol consumption tends to more quickly intoxicate females and causes medical problems to progress more rapidly in females than males, as mentioned in Section 4.1.5. However, this comparison is of limited usefulness because it is between much smaller OLS estimates in Tables 9 and 10 and 2SLS estimates in Tables 11 and 12. Using instead the OLS estimates in Table 11, for example, would yield the conclusion that effects on males are slightly larger than are those on females.

Similar to the results of the male sample, the effects become smaller and insignificant in both 2SLS and OLS approaches after controlling for human capital covariates. The complete second stage regression results in Appendices A17 to A24 show that all human capital controls significantly affect employment status. The alcohol and human capital estimates and their significance levels imply that alcohol consumption affects employment status indirectly but not directly. All other covariate coefficients, again, have the signs that were hypothesized in Section 4.

## 5.2. Results from NSDUH

### 5.2.1. Alcohol Abuse and/or Dependence

Table 13 summarizes the 2SLS and OLS regression results for the effect of past year alcohol abuse and/or dependence on the probability of employment (full time/part time) last week for both males and females. In the first stage regressions, both instrumental variables are individually and jointly significant in all models. The overidentification statistics show that the null hypotheses of overidentification can not be rejected, again supporting the instrumentation strategy.

From the first stage regressions in each model, the signs of the estimates for both instrumental variables are as expected. Alcohol abuse and/or dependence is positively related to perceiving no more than slight risk from consuming 4-5 alcoholic drinks nearly every day, but negatively related to religious beliefs being important. A male (female) who thinks that there is no more than slight risk undertaken from consuming 4-5 alcoholic drinks nearly every day is about 8 to 10 percentage points (6 percentage points) more likely to develop alcohol abuse and/or dependence in the last 12 months. Respondents of both genders who think their religious beliefs are important are about 2 percentage points less likely to develop alcohol abuse and/or dependence. These estimated effects decrease slightly as human capital covariates are added into the models.

For the male sample in Model 1, past year alcohol abuse and/or dependence has a statistically significant negative total effect on the probability of past week employment using both estimation approaches. Past year alcohol abuse and/or dependence lowers the probability of employment by 19.3 percentage points or 20.5 percent (-0.1929 / 0.94) using 2SLS, but by only 3.3 percentage points or 3.5 percent (-0.0325 / 0.94) using

Table 13. Regression estimates of binary alcohol measures on the probability of employment (full time/part time) last week using NSDUH

Alcohol variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.1929 *** (0.0677)	-0.0325 *** (0.0063)	-0.1377 * (0.0743)	-0.0236 *** (0.0063)	-0.0764 (0.0788)	-0.0207 *** (0.0063)	-0.0689 (0.0793)	-0.0188 *** (0.0063)
Perceived risk (1 <sup>st</sup> stage)	0.1006 *** (0.0102)		0.0923 *** (0.0102)		0.0862 *** (0.0102)		0.0857 *** (0.0102)	
Religious influence (1 <sup>st</sup> stage)	-0.0216 *** (0.0068)		-0.0151 ** (0.0068)		-0.0149 ** (0.0068)		-0.0145 ** (0.0067)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	54.81 ***		44.43 ***		38.58 ***		38.11 ***	
Overidentification test (p-value)	0.7126		0.8943		0.9855		0.9817	
Hausman Statistic	-2.3815 **		-1.5412		-0.7088		-0.6333	
<b>Female (n=11,779)</b>								
Alcohol variables	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.6529 *** (0.1733)	-0.0276 *** (0.0096)	-0.6759 *** (0.1922)	-0.0212 ** (0.0097)	-0.5304 *** (0.1903)	-0.0157 (0.0096)	-0.5102 *** (0.1906)	-0.0116 (0.0096)
Perceived risk (1 <sup>st</sup> stage)	0.0622 *** (0.0118)		0.0603 *** (0.0117)		0.0562 *** (0.0117)		0.0556 *** (0.0117)	
Religious influence (1 <sup>st</sup> stage)	-0.0239 *** (0.0054)		-0.0196 *** (0.0054)		-0.0194 *** (0.0054)		-0.0192 *** (0.0054)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	24.71 ***		20.77 ***		18.69 ***		18.34 ***	
Overidentification test (p-value)	0.5177		0.5783		0.8219		0.7769	
Hausman Statistic	-3.6145 ***		-3.4117 ***		-2.7081 ***		-2.6197 ***	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix B1 and B2 for full estimation results.



OLS. The Hausman test statistic shows that there is a significant difference between the two estimates, which means past year alcohol abuse and/or dependence should be treated as an endogenous variable. Therefore, the 2SLS estimate from Model 1 should be used to draw an inference about the total causal effect of alcohol abuse and/or dependence on the probability of employment last week.

Adding marital status and children as explanatory variables in Model 2 reduces the size and significance of the 2SLS estimate, and adding educational attainment causes the 2SLS estimate to lose significance. The OLS estimate also becomes smaller upon adding other covariates into the equation in Models 2–4, but remains significant. Because the Hausman statistic shows an insignificant difference between the 2SLS and OLS estimates in Models 2–4, but the former are always negative and larger in magnitude, the latter can be used to draw inferences about the direct effect of alcohol abuse and/or dependence on the probability of employment last week. Past year alcohol abuse and/or dependence directly lowers the probability of employment last week by 1.9 percentage points or 2.0 percent (-0.0188 / 0.94).

Literal interpretation of the results, i.e. relying on 2SLS for the total effect, implies that most of the effect of past year alcohol abuse and/or dependence on the probability of past week employment among males is an indirect effect through human capital accumulation. However, using the conservative OLS estimate for the total effect, nearly 60 percent of the total effect would be considered direct rather than indirect. Regardless, complete second stage regression results in Appendix B1 support the conclusion that human capital effects are important, since all the coefficients of the human capital components are statistically significant and positive.

The 2SLS estimates for females are statistically significant and larger than for males. The OLS estimates are much smaller than 2SLS estimates and statistically significant in Model 1 and 2, but not in Models 3 and 4. However, the Hausman test statistics show that there is a significant difference between 2SLS and OLS, which means that OLS is inconsistent and 2SLS should be used for interpretation. Therefore, the results imply that there is a large significant direct effect and a relatively smaller significant indirect effect of past year alcohol abuse and/or dependence on the probability of employment last week for the female sample. For a randomly chosen female in the population, other variables held constant, the likelihood of employment last week for an individual with alcohol abuse and/or dependence problems in the past year is, on average, 65.3 percentage points (Model 1) and 51.0 percentage points (Model 4) less than for an individual without alcohol abuse and/or dependence problems in the past year. Complete second stage regression results in Appendix B2 also support this conclusion.

Table 14 summarizes similar results for the effect of past year alcohol abuse and/or dependence on the probability of working full time last week. Once again, the first stage regressions are the same as in Table 13. For both genders, overidentification statistics show that the instrumental variables are valid in all models, albeit weakly in Model 1 with  $p$ -values between 0.05 and 0.1. As expected, 2SLS estimates are larger than those in Table 13. For males, in Model 1 past year alcohol abuse and/or dependence lowers the probability of working full time last week by 32.3 percentage points or 36.3 percent ( $-0.3232 / 0.89$ ) using 2SLS, but by only 3.8 percentage points or 4.3 percent ( $-0.0380 / 0.89$ ) using OLS. After adding human capital covariates, the 2SLS effects become smaller and insignificant, and in Models 3 and 4 the Hausman test statistics

Table 14. Regression estimates of binary alcohol measures on the probability of working full time last week using NSDUH

Alcohol variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.3232 *** (0.0925)	-0.0380 *** (0.0084)	-0.2157 ** (0.0999)	-0.0228 *** (0.0084)	-0.1672 (0.1062)	-0.0199 ** (0.0084)	-0.1464 (0.1063)	-0.0167 ** (0.0084)
Perceived risk (1 <sup>st</sup> stage)	0.1006 *** (0.0102)		0.0923 *** (0.0102)		0.0862 *** (0.0102)		0.0857 *** (0.0102)	
Religious influence (1 <sup>st</sup> stage)	-0.0216 *** (0.0068)		-0.0151 ** (0.0068)		-0.0149 ** (0.0068)		-0.0145 ** (0.0067)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	54.81 ***		44.43 ***		38.58 ***		38.11 ***	
Overidentification test (p-value)	0.0764		0.2629		0.2300		0.2134	
Hausman Statistic	-3.0967 ***		-1.9380 *		-1.3906		-1.2240	
<b>Female (n=11,779)</b>								
Alcohol variables	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.2191 (0.2649)	0.0205 (0.0170)	-0.4763 (0.2942)	-0.0070 (0.0169)	-0.3147 (0.3042)	-0.0012 (0.0169)	-0.2759 (0.3059)	0.0030 (0.0169)
Perceived risk (1 <sup>st</sup> stage)	0.0622 *** (0.0118)		0.0603 *** (0.0117)		0.0562 *** (0.0117)		0.0556 *** (0.0117)	
Religious influence (1 <sup>st</sup> stage)	-0.0239 *** (0.0054)		-0.0196 *** (0.0054)		-0.0194 *** (0.0054)		-0.0192 *** (0.0054)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	24.71 ***		20.77 ***		18.69 ***		18.34 ***	
Overidentification test (p-value)	0.0534		0.2791		0.4000		0.3509	
Hausman Statistic	-0.9064		-1.5978		-1.0321		-0.9132	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix B3 and B4 for full estimation results.

show that there are no significant differences between the 2SLS and OLS estimates.

The OLS effects become smaller as human capital covariates are added in Models 2–4, but remain significant. This again implies that alcohol abuse and/or dependence has a small direct effect on the probability of working full time, but a large indirect effect through human capital components. Complete second stage regression results in Appendix B3 that show positive and significant human capital variable coefficients also support this conclusion.

For females, the results for all models show that the effects from 2SLS are large, yet insignificant due to high standard errors. Because the Hausman statistic shows an insignificant difference between the 2SLS and OLS estimates in every model, the OLS estimates should be used to draw inferences about the causal effect of past year alcohol abuse and/or dependence on the probability of working full time last week. However, in all four models the OLS estimates are very small and not statistically different from zero. Therefore, it can be concluded that there is no significant direct or indirect effect of past year alcohol abuse and/or dependence on the probability of working full time last week for females.

### 5.2.2. Frequencies of Alcohol Consumption

Table 15 summarizes the 2SLS and OLS regression results for the effects of the three numerical alcohol measures on the probability of employment in the past week for males. All test statistics in the first stage regressions show that both instrumental variables are adequate for making inference about causal effects. The signs of the estimates for both instrumental variables from the first stage regressions are as expected.

Table 15. Regression estimates of continuous alcohol measures on the probability of employment (full time/part time) last week: the male sample from NSDUH

Alcohol variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of days drinking alcohol in the last 12 months</b>	-0.00033 *** (0.0001)	-0.00004 * (0.0000)	-0.00022 * (0.0001)	-0.00002 (0.0000)	-0.00011 (0.0001)	-0.00002 (0.0000)	-0.00010 (0.0001)	-0.00001 (0.0000)
Perceived risk (1 <sup>st</sup> stage)	57.7730 *** (2.8461)		56.4162 *** (2.8403)		56.6514 *** (2.8601)		56.5771 *** (2.8611)	
Religious influence (1 <sup>st</sup> stage)	-13.6000 *** (1.8876)		-12.3000 *** (1.8862)		-12.3000 *** (1.8865)		-12.3000 *** (1.8868)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	238.98 ***		224.05 ***		222.76 ***		222.17 ***	
Overidentification test (p-value)	0.7644		0.7859		0.9399		0.9362	
Hausman Statistic	-2.6086 ***		-1.7393 *		-0.8532		-0.7603	
<b>Number of days drinking alcohol in the last month</b>	-0.00382 *** (0.0013)	-0.00041 (0.0003)	-0.00246 * (0.0013)	-0.00016 (0.0003)	-0.00127 (0.0013)	-0.00018 (0.0003)	-0.00113 (0.0013)	-0.00017 (0.0003)
Perceived risk (1 <sup>st</sup> stage)	4.9686 *** (0.2421)		4.8644 *** (0.2417)		4.9561 *** (0.2433)		4.9530 *** (0.2434)	
Religious influence (1 <sup>st</sup> stage)	-1.3412 *** (0.1605)		-1.2430 *** (0.1605)		-1.2473 *** (0.1605)		-1.2500 *** (0.1605)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	253.97 ***		239.20 ***		244.26 ***		243.98 ***	
Overidentification test (p-value)	0.8665		0.7162		0.9045		0.9044	
Hausman Statistic	-2.6599 ***		-1.7533 *		-0.8443		-0.7466	
<b>Number of days drank 5+ alcohol drinks in the last month</b>	-0.00616 *** (0.0021)	-0.00224 *** (0.0004)	-0.00413 * (0.0022)	-0.00166 *** (0.0004)	-0.00227 (0.0023)	-0.00127 *** (0.0004)	-0.00204 (0.0023)	-0.00116 *** (0.0004)
Perceived risk (1 <sup>st</sup> stage)	3.1747 *** (0.1420)		3.0771 *** (0.1415)		2.8979 *** (0.1418)		2.8913 *** (0.1417)	
Religious influence (1 <sup>st</sup> stage)	-0.5855 *** (0.0942)		-0.5100 *** (0.0940)		-0.5011 *** (0.0936)		-0.4971 *** (0.0935)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	276.17 ***		256.33 ***		227.74 ***		226.84 ***	
Overidentification test (p-value)	0.6196		0.8878		0.9859		0.9789	
Hausman Statistic	-1.8866 *		-1.1435		-0.4384		-0.3817	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix B5-B7 for full estimation results.

Alcohol consumption frequency is positively related to perceived lack of risk and negatively related to religious influence.

For Model 1, an individual who thinks that there is no more than slight risk from consuming 4-5 alcoholic drinks nearly every day, drank 58 more days in the last 12 months, five more days in the last month, and heavily, three more days in the last month than other individuals. Those who think their religious beliefs are an important part of their lives drank 14 fewer days in the last 12 months, 2 fewer days in the last month, and 1 fewer day heavily in the last month than those who think otherwise. For Models 2 to 4, the coefficients of both instruments become slightly smaller as other covariates are added into the model.

For Model 1, the 2SLS estimates are statistically significant, showing negative total effects of alcohol consumption on the probability of employment last week. The interpretations are as follows. If the respondent drank alcohol one additional day a week in the last 12 months, the probability of employment last week would fall by 1.7 percentage points ( $-0.00033 \times 52$ ) or 1.8 percent ( $-0.00033 \times 52 / 0.94$ ). If the respondent drank alcohol one additional day per week in the last month (four weeks), the probability of employment last week would decrease by 1.5 percentage points ( $-0.00382 \times 4$ ) or 1.6 percent ( $-0.00382 \times 4 / 0.94$ ). If the respondent drank five or more alcoholic beverages one additional day a week in the last month, the probability of employment last week would be reduced by 2.5 percentage points ( $-0.00616 \times 4$ ) or 2.6 percent ( $-0.00616 \times 4 / 0.94$ ).

Using OLS, the estimates are less statistically significant and are smaller than using 2SLS. Hausman statistics suggest that there are significant differences between

2SLS and OLS estimates, implying that these alcohol measures are endogenous and thus 2SLS is preferred to OLS in these specifications.

For both 2SLS and OLS estimates in Models 2 to 4, the estimates are smaller than those in Model 1 and are less statistically significant, except for the OLS estimates of the number of days in which five or more alcohol drinks were consumed in the last month, which are significant in every model. Therefore, it can be concluded that the number of days drinking alcohol has significant indirect effects on current employment, but no significant direct effects. However, there are small direct and indirect effects of number of days on which the respondent drank heavily (five or more drinks) on the probability of employment last week. If the respondent drank five or more alcoholic drinks one additional day a week in the last month, the probability of employment last week would directly be reduced by 0.5 percent ( $-0.00116 \times 4 / 0.94$ ).

Similar to the results presented in Table 15, Table 16 summarizes the 2SLS and OLS regression results of the effect of three alcohol measures on the probability of working full time for males. The first stage regressions are the same as in Table 15, and the tests of overidentification yield identical conclusions about the validity of the instrumental variables. For the 2SLS approach, the estimates are bigger than those in Table 15, as expected. The Hausman statistics in Model 1 are statistically significant, suggesting that the alcohol variables are endogenous with respect to employment and the 2SLS estimates in Model 1 should be used to make inferences about causal total effects of past alcohol consumption on the probability of working full time.

The 2SLS estimates in Model 1 can be interpreted as follows. Drinking alcohol one additional day a week in the last 12 months reduces the probability of working full time

Table 16. Regression estimates of continuous alcohol measures on the probability of working full time last week: the male sample from NSDUH

Alcohol variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of days drinking alcohol in the last 12 months</b>								
Perceived risk (1 <sup>st</sup> stage)	-0.00056 *** (0.0002)	-0.00002 (0.0000)	-0.00036 ** (0.0002)	0.00002 (0.0000)	-0.00026 * (0.0002)	0.00003 (0.0000)	-0.00023 (0.0002)	0.00003 (0.0000)
Religious influence (1 <sup>st</sup> stage)	57.7730 *** (2.8461)	(2.8403)	56.4162 *** (2.8403)	(2.8403)	56.6514 *** (2.8601)	(2.8611)	56.5771 *** (2.8611)	(2.8611)
F-statistic (IV's in the 1 <sup>st</sup> stage)	-13.6000 *** (1.8876)	(1.8862)	-12.3000 *** (1.8876)	(1.8862)	-12.3000 *** (1.8865)	(1.8868)	-12.3000 *** (1.8868)	(1.8868)
Overidentification test (p-value)	238.98 ***	224.05 ***	238.98 ***	224.05 ***	222.76 ***	222.17 ***	222.17 ***	222.17 ***
Hausman Statistic	0.0830	0.3313	0.0830	0.3313	0.2648	0.2645	0.2645	0.2645
	-3.6173 ***	-2.4583 **	-3.6173 ***	-2.4583 **	-1.8450 *	-1.6685 *	-1.6685 *	-1.6685 *
<b>Number of days drinking alcohol in the last month</b>								
Perceived risk (1 <sup>st</sup> stage)	-0.00656 *** (0.0018)	-0.00042 (0.0004)	-0.00414 ** (0.0018)	-0.00001 (0.0003)	-0.00301 * (0.0018)	-0.00002 (0.0003)	-0.00266 (0.0018)	0.00000 (0.0003)
Religious influence (1 <sup>st</sup> stage)	4.9686 *** (0.2421)	(0.2417)	4.8644 *** (0.2417)	(0.2417)	4.9561 *** (0.2433)	(0.2433)	4.9530 *** (0.2434)	(0.2434)
F-statistic (IV's in the 1 <sup>st</sup> stage)	-1.3412 *** (0.1605)	(0.1605)	-1.2430 *** (0.1605)	(0.1605)	-1.2473 *** (0.1605)	(0.1605)	-1.2500 *** (0.1605)	(0.1605)
Overidentification test (p-value)	253.97 ***	239.20 ***	253.97 ***	239.20 ***	244.26 ***	243.98 ***	243.98 ***	243.98 ***
Hausman Statistic	0.1165	0.3906	0.1165	0.3906	0.2991	0.2754	0.2754	0.2754
	-3.5606 ***	-2.5582 **	-3.5606 ***	-2.5582 **	-1.7265 *	-1.5463	-1.5463	-1.5463
<b>Number of days drank 5+ alcohol drinks in the last month</b>								
Perceived risk (1 <sup>st</sup> stage)	-0.01016 *** (0.0029)	-0.00237 *** (0.0006)	-0.00648 ** (0.0029)	-0.00140 ** (0.0006)	-0.00497 (0.0031)	-0.00102 * (0.0006)	-0.00435 (0.0031)	-0.00084 (0.0006)
Religious influence (1 <sup>st</sup> stage)	3.1747 *** (0.1420)	(0.1415)	3.0771 *** (0.1415)	(0.1415)	2.8979 *** (0.1418)	(0.1417)	2.8913 *** (0.1417)	(0.1417)
F-statistic (IV's in the 1 <sup>st</sup> stage)	-0.5855 *** (0.0942)	(0.0940)	-0.5100 *** (0.0940)	(0.0940)	-0.5011 *** (0.0936)	(0.0936)	-0.4971 *** (0.0935)	(0.0935)
Overidentification test (p-value)	276.17 ***	256.33 ***	276.17 ***	256.33 ***	227.74 ***	226.84 ***	226.84 ***	226.84 ***
Hausman Statistic	0.0467	0.2573	0.0467	0.2573	0.2247	0.2115	0.2115	0.2115
	-2.7838 ***	-1.7636 *	-2.7838 ***	-1.7636 *	-1.2857	-1.1444	-1.1444	-1.1444

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix B8-B10 for full estimation results.



by 2.9 percentage points ( $-0.00056 \times 52$ ) or 3.3 percent ( $-0.00056 \times 52 / 0.89$ ). Drinking alcohol one additional day a week in the last month reduces the probability of working full time by 2.6 percentage points ( $-0.00656 \times 4$ ) or 2.9 percent ( $-0.00656 \times 4 / 0.89$ ). Drinking five or more alcoholic drinks one additional day a week in the last month reduces the probability of working full time by 4.1 percentage points ( $-0.01016 \times 4$ ) or 4.6 percent ( $-0.01016 \times 4 / 0.89$ ).

However, after other covariates are added, the estimates become smaller and insignificant. The OLS estimates even become positive, albeit insignificant, in Model 4. Therefore, it can be concluded that there are no significant direct effects, but significant indirect effects of alcohol consumption on working full time for males.

Table 17 summarizes the 2SLS and OLS regression results of the effect of the three alcohol measures on the probability of employment last week for females. Similar to those of the male sample in Table 15, all first stage statistics and the tests of overidentification show that both instrumental variables are adequate for the female sample. The coefficients on both instruments in the first stage regressions have the expected signs. For Model 1, an individual who thinks that there is no more than slight risk from consuming 4-5 alcoholic drinks nearly every day drank 43 more days in the last 12 months, four more days in the last month, and two more days heavily in the last month than others. An individual who thinks that his/her religious beliefs are an important part of his/her life drank 14 fewer days in the last 12 months, one less day in the last month, and one less day heavily in the last month than an individual who thinks otherwise. The coefficients of both instruments are similar in other model specifications.

The 2SLS estimates from all models indicate significant negative effects of

Table 17. Regression estimates of continuous alcohol measures on the probability of employment (full time/part time) last week: the female sample from NSDUH

Alcohol variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of days drinking alcohol in the last 12 months</b>	-0.00102 *** (0.00002)	-0.00009 *** (0.00000)	-0.00009 *** (0.00002)	-0.00007 ** (0.00000)	-0.00073 *** (0.00002)	-0.00008 ** (0.00000)	-0.00069 *** (0.00002)	-0.00009 *** (0.00000)
Perceived risk (1 <sup>st</sup> stage)	43.0742 *** (3.5306)		42.7496 *** (3.5137)		43.8184 *** (3.5246)		43.7135 *** (3.5217)	
Religious influence (1 <sup>st</sup> stage)	-13.6000 *** (1.6353)		-12.4000 *** (1.6309)		-12.4000 *** (1.6304)		-12.5000 *** (1.6293)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	113.87 ***		107.39 ***		110.43 ***		110.77 ***	
Overidentification test (p-value)	0.7277		0.6641		0.9815		0.9503	
Hausman Statistic	-3.9536 ***		-3.7757 ***		-2.7603 ***		-2.5996 ***	
<b>Number of days drinking alcohol in the last month</b>	-0.01208 *** (0.0028)	-0.00093 ** (0.00004)	-0.01164 *** (0.0029)	-0.00075 * (0.00004)	-0.00842 *** (0.00027)	-0.00097 ** (0.00004)	-0.00803 *** (0.00027)	-0.00106 *** (0.00004)
Perceived risk (1 <sup>st</sup> stage)	3.6151 *** (0.2832)		3.5956 *** (0.2822)		3.7605 *** (0.2825)		3.7488 *** (0.2822)	
Religious influence (1 <sup>st</sup> stage)	-1.1740 *** (0.1312)		-1.0906 *** (0.1310)		-1.0852 *** (0.1307)		-1.0918 *** (0.1306)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	126.91 ***		120.81 ***		128.12 ***		128.26 ***	
Overidentification test (p-value)	0.6873		0.6098		0.9961		0.9308	
Hausman Statistic	-4.0056 ***		-3.8147 ***		-2.7479 ***		-2.5840 ***	
<b>Number of days drank 5+ alcohol drinks in the last month</b>	-0.02724 *** (0.0063)	-0.00436 *** (0.00009)	-0.02638 *** (0.0064)	-0.00382 *** (0.00009)	-0.02004 *** (0.0066)	-0.00298 *** (0.00009)	-0.01923 *** (0.0066)	-0.00268 *** (0.00009)
Perceived risk (1 <sup>st</sup> stage)	1.7803 *** (0.1230)		1.7629 *** (0.1224)		1.6914 *** (0.1226)		1.6865 *** (0.1226)	
Religious influence (1 <sup>st</sup> stage)	-0.3893 *** (0.0570)		-0.3502 *** (0.0568)		-0.3494 *** (0.0567)		-0.3484 *** (0.0567)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	132.84 ***		126.92 ***		118.04 ***		117.48 ***	
Overidentification test (p-value)	0.7596		0.8621		0.6873		0.7520	
Hausman Statistic	-3.6795 ***		-3.5353 ***		-2.6200 ***		-2.5451 **	

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%.  
 \*\*Statistically significant at 5%.  
 \*Statistically significant at 10%.  
 Model 1 contains general exogenous variables.  
 Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.  
 Model 3 contains those variables in Model 2 plus educational attainment indicators.  
 Model 4 contains those variables in Model 3 plus health status indicators.  
 See Appendix B11-B13 for full estimation results.

alcohol consumption on the probability of employment. In Model 1, the total effects of alcohol are three to four times larger than those of the male sample in Table 15 and can be interpreted as follows. If the respondent drank alcohol one additional day a week in the last 12 months, the probability of past week employment is reduced by 5.3 percentage points ( $-0.00102 \times 52$ ) or 5.7 percent ( $-0.00102 \times 52 / 0.93$ ). If the respondent drank alcohol one additional day a week in the last month, the probability of past week employment is decreased by 4.8 percentage points ( $-0.01208 \times 4$ ) or 5.2 percent ( $-0.01208 \times 4 / 0.93$ ). If the respondent drank five or more alcoholic drinks one additional day a week in the last month, the probability of past week employment falls by 10.9 percentage points ( $-0.02724 \times 4$ ) or 11.7 percent ( $-0.02724 \times 4 / 0.93$ ).

As expected, the OLS estimates are statistically significant but smaller than the 2SLS estimates due to the simultaneity problem, thereby causing a positive bias in OLS model. The Hausman statistics imply that OLS is inconsistent, so 2SLS should be used to make inferences in all models.

For Models 2-4, both 2SLS and OLS effects become smaller but remain negative and significantly different from zero, suggesting that there are small direct effects of alcohol consumption on the probability of employment for females. The interpretations of the direct effects are as follows. If the respondent drank alcohol one additional day a week in the last 12 months, the probability of past week employment falls by 3.6 percentage points ( $-0.00069 \times 52$ ) or 3.9 percent ( $-0.00069 \times 52 / 0.93$ ). If the respondent drank one additional day a week in the last month, the probability of past week employment is reduced by 3.2 percentage points ( $-0.00803 \times 4$ ) or 3.5 percent ( $-0.00803 \times 4 / 0.93$ ). If the respondent drank five or more alcoholic beverages one additional day

a week in the last month, the probability of past week employment last week decreases by 7.7 percentage points ( $-0.01923 \times 4$ ) or 8.3 percent ( $-0.01923 \times 4 / 0.93$ ).

Table 18 summarizes the 2SLS and OLS regression results of the effect of the three alcohol measures on the probability of working full time in the last week for females. Both 2SLS and OLS estimates are statistically insignificant in most models, implying that there are no effects of alcohol consumption on the probability of working full time in the last week for females.

### 5.3. Results from NELS:88

Table 19 summarizes the 2SLS and OLS regression results of the effects of the two continuous alcohol measures on the probability of current employment for males. The coefficients of both instruments, indicators of whether the respondent drank on 20 or more occasions in the last 30 days during 10th grade and five or more drinks in a row on at least six occasions in the last two weeks during 12th grade, have the expected sign in each first stage regression. The  $t$  and  $F$  statistics in the first stage regressions also imply that both instruments are individually and jointly significant. Moreover, the  $p$ -values for the overidentification tests suggest that the instruments are not correlated with the employment equation residuals. Therefore, both instruments appear valid.

The coefficients of the instruments in Model 1 can be interpreted as follows. On average, respondents reporting heavy drinking in 10<sup>th</sup> or 12<sup>th</sup> grades drank on two additional instances in the last 30 days, and drank heavily on one additional instance over the last two weeks. These effects change only slightly when other covariates are added into the model.

Table 18. Regression estimates of continuous alcohol measures on the probability of working full time last week: the female sample from NSDUH

Alcohol variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of days drinking alcohol in the last 12 months</b>	-0.00041 (0.0004)	0.00005 (0.0001)	-0.00072 * (0.0004)	-0.00005 (0.0001)	-0.00046 (0.0004)	-0.00005 (0.0001)	-0.00040 (0.0004)	-0.00006 (0.0001)
Perceived risk (1 <sup>st</sup> stage)	43.0742 *** (3.5306)		42.7496 *** (3.5137)		43.8184 *** (3.5246)		43.7135 *** (3.5217)	
Religious influence (1 <sup>st</sup> stage)	-13.6000 *** (1.6353)		-12.4000 *** (1.6309)		-12.4000 *** (1.6304)		-12.5000 *** (1.6293)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	113.87 ***		107.39 ***		110.43 ***		110.77 ***	
Overidentification test (p-value)	0.0628		0.3045		0.4494		0.3886	
Hausman Statistic	-1.1298		-1.6217		-1.0005		-0.8430	
<b>Number of days drinking alcohol in the last month</b>	-0.00472 (0.0048)	0.00053 (0.0007)	-0.00833 * (0.0049)	-0.00057 (0.0007)	-0.00529 (0.0048)	-0.00080 (0.0007)	-0.00465 (0.0047)	-0.00090 (0.0007)
Perceived risk (1 <sup>st</sup> stage)	3.6151 *** (0.2832)		3.5956 *** (0.2822)		3.7605 *** (0.2825)		3.7488 *** (0.2822)	
Religious influence (1 <sup>st</sup> stage)	-1.1740 *** (0.1312)		-1.0906 *** (0.1310)		-1.0852 *** (0.1307)		-1.0918 *** (0.1306)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	126.91 ***		120.81 ***		128.12 ***		128.26 ***	
Overidentification test (p-value)	0.0610		0.2895		0.4431		0.3839	
Hausman Statistic	-1.0998		-1.5954		-0.9537		-0.7985	
<b>Number of days drank 5+ alcohol drinks in the last month</b>	-0.01379 (0.0109)	-0.00037 (0.0016)	-0.02044 * (0.0111)	-0.00263 * (0.0016)	-0.01374 (0.0114)	-0.00175 (0.0016)	-0.01244 (0.0114)	-0.00145 (0.0016)
Perceived risk (1 <sup>st</sup> stage)	1.7803 *** (0.1230)		1.7629 *** (0.1224)		1.6914 *** (0.1226)		1.6865 *** (0.1226)	
Religious influence (1 <sup>st</sup> stage)	-0.3893 *** (0.0570)		-0.3502 *** (0.0568)		-0.3494 *** (0.0567)		-0.3484 *** (0.0567)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	132.84 ***		126.92 ***		118.04 ***		117.48 ***	
Overidentification test (p-value)	0.0914		0.4469		0.5401		0.4665	
Hausman Statistic	-1.2501		-1.6282		-1.0596		-0.9711	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

Model 4 contains those variables in Model 3 plus health status indicators.

See Appendix B14-B16 for full estimation results.

Table 19. Regression estimates of continuous alcohol measures on the probability of current employment (full time/part time): the male sample from NELS:88

Alcohol variables	Male (n=3,876)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of occasions drank alcohol in the last 30 days</b>						
	-0.01068 (0.00072)	0.00122 * (0.00006)	-0.01027 (0.00073)	0.00162 ** (0.00006)	-0.01143 (0.00071)	0.00171 *** (0.00006)
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	2.0560 *** (0.7435)		2.0540 *** (0.7360)		2.1251 *** (0.7371)	
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	2.0247 *** (0.4504)		1.9960 *** (0.4457)		2.0657 *** (0.4468)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	16.51 ***		16.49 ***		17.57 ***	
Overidentification test (p-value)	0.1731		0.1638		0.2097	
Hausman Statistic	-1.6552 *		-1.6400		-1.8552 *	
<b>Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks</b>						
	-0.03198 (0.0208)	0.00546 ** (0.0025)	-0.03088 (0.0211)	0.00702 *** (0.0025)	-0.03625 * (0.0218)	0.00692 *** (0.0025)
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	0.7342 *** (0.1877)		0.7242 *** (0.1859)		0.7112 *** (0.1860)	
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	0.6775 *** (0.1137)		0.6659 *** (0.1126)		0.6502 *** (0.1128)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	30.22 ***		29.81 ***		28.41 ***	
Overidentification test (p-value)	0.1785		0.1671		0.2171	
Hausman Statistic	-1.8124 *		-1.8072 *		-1.9932 **	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

See Appendix C1 and C2 for full estimation results.

All of the 2SLS estimates in Table 19 imply that alcohol consumption negatively affects the probability of current employment for males. However, these estimates are very small and insignificantly different from zero. By contrast, all of the OLS estimates in Table 19 are positive and statistically different from zero. Nonetheless, the Hausman test statistics in most models imply that these alcohol measures are endogenous and therefore the 2SLS estimates should be used to draw inferences about causal effects. Therefore, it can be concluded that there is no significant direct or indirect effects of alcohol consumption on the probability of current employment for males.

Table 20 summarizes similar results of the 2SLS and OLS regressions of currently working full time on the two continuous alcohol measures for males. The only difference between the results of Table 19 and Table 20 is that the Hausman test statistics in every model imply that these alcohol measures are not endogenous. The OLS estimates are similar to those in the previous literature in signifying positive effects of drinking on full time employment. As before, the effect becomes more positive when human capital measures, here family structure and schooling but not health, are held constant. Thus, indirect effects of drinking again appear to be negative, but direct effects have the unexpected positive sign that many other researchers have similarly uncovered.

Table 21 summarizes the 2SLS and OLS regression results of the effects of the two continuous alcohol measures on the probability of current employment for females. All of the first stage statistics and the overidentification tests imply that both instrumental variables are adequate to identify the effects of alcohol consumption on female employment propensities. The coefficients of the instruments in Model 1 can be interpreted as follows. On average, respondents indicating heavy 10th grade drinking

Table 20. Regression estimates of continuous alcohol measures on the probability of currently working full time: the male sample from NELS:88

Alcohol variables	Male (n=3,876)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of occasions drank alcohol in the last 30 days</b>						
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	-0.00439 (0.0092)	0.00119 (0.0008)	-0.00339 (0.0092)	0.00229 *** (0.0008)	-0.00354 (0.0090)	0.00232 *** (0.0008)
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	2.0560 *** (0.7435)	2.0247 *** (0.4504)	2.0540 *** (0.7360)	2.0657 *** (0.4468)	2.1251 *** (0.7371)	2.0657 *** (0.4468)
F-statistic (IV's in the 1 <sup>st</sup> stage)	16.51 ***		16.49 ***		17.57 ***	
Overidentification test (p-value)	0.2677		0.2447		0.2689	
Hausman Statistic	-0.6075		-0.6174		-0.6569	
<b>Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks</b>						
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	-0.01361 (0.0270)	0.00908 *** (0.0033)	-0.01066 (0.0272)	0.01339 *** (0.0033)	-0.01175 (0.0279)	0.01351 *** (0.0033)
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	0.7342 *** (0.1877)	0.7242 *** (0.1859)	0.6659 *** (0.1126)	0.6502 *** (0.1128)	0.7112 *** (0.1860)	0.6502 *** (0.1128)
F-statistic (IV's in the 1 <sup>st</sup> stage)	30.22 ***		29.81 ***		28.41 ***	
Overidentification test (p-value)	0.2728		0.2479		0.2732	
Hausman Statistic	-0.8469		-0.8911		-0.9116	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

See Appendix C3 and C4 for full estimation results.



Table 21. Regression estimates of continuous alcohol measures on the probability of current employment (full time/part time): the female sample from NELS:88

Alcohol variables	Female (n=4,638)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of occasions drank alcohol in the last 30 days</b>						
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	-0.00766 (0.0117)	0.00648 *** (0.0013)	-0.00132 (0.0115)	0.00128 (0.0013)	0.00085 (0.0111)	0.00133 (0.00013)
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	1.0037 (0.8849)		1.4743 * (0.8457)		1.6438 * (0.8415)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	3.1559 *** (0.4354)		3.0406 *** (0.4162)		3.1276 *** (0.4140)	
Overidentification test (p-value)	27.64 ***		29.22 ***		31.58 ***	
Hausman Statistic	0.4558		0.1304		0.1097	
	-1.2108		-0.2274		-0.0442	
<b>Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks</b>						
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	-0.02709 (0.0541)	0.02186 *** (0.0063)	0.00651 (0.0530)	0.00593 (0.0062)	0.01579 (0.0533)	0.00655 (0.0062)
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	0.4806 *** (0.1777)		0.5286 *** (0.1745)		0.5246 *** (0.1747)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	0.6397 *** (0.0874)		0.6186 *** (0.0859)		0.6147 *** (0.0860)	
Overidentification test (p-value)	32.00 ***		32.20 ***		31.67 ***	
Hausman Statistic	0.3892		0.1304		0.1156	
	-0.9116		0.0111		0.1745	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

See Appendix C5 and C6 for full estimation results.

used alcohol on one additional instance in the last 30 days and drank heavily on one additional instance over the last four weeks. Respondents indicating heavy 12th grade drinking consumed alcohol on three additional instances in the last 30 days and drank heavily on one additional instance over the last two weeks. The coefficients of both instruments in the other models are similar to those in Model 1.

Using 2SLS, there is no evidence of a statistically significant effect of alcohol consumption on female employment. Moreover, the Hausman test statistics in every model imply that these alcohol measures are not endogenous. Using OLS, the estimates are positive, very small in all models, and statistically insignificant when human capital controls are added. Therefore, it can be concluded that there is only a positive total effect of alcohol consumption on current employment for females, which contradicts the conventional wisdom about the effect of alcohol consumption.

Table 22 summarizes similar results of the 2SLS and OLS regressions of currently working full time on the two continuous alcohol measures for females. The Hausman statistics imply that alcohol measures are endogenous in Model 1, suggesting that 2SLS estimates in Model 1 should be used to infer about the causal total effect of alcohol consumption on the probability of currently working full time for females. However, these 2SLS estimates in Model 1 are not statistically different from zero, implying that there is no significant total effect of alcohol consumption on the probability of currently working full time for females.

Table 22. Regression estimates of continuous alcohol measures on the probability of currently working full time: the female sample from NELS:88

Alcohol variables	Female (n=4,638)					
	Model I (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
<b>Number of occasions drank alcohol in the last 30 days</b>						
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	-0.02006 (0.0145)	0.00759 *** (0.0015)	-0.01399 (0.0140)	0.00138 (0.0016)	-0.01142 (0.0135)	0.00117 (0.0016)
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	1.0037 (0.8849)		1.4743 * (0.8457)		1.6438 * (0.8415)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	3.1559 *** (0.4354)		3.0406 *** (0.4162)		3.1276 *** (0.4140)	
Overidentification test (p-value)	27.64 ***		29.22 ***		31.58 ***	
Hausman Statistic	0.5412		0.8834		0.8299	
	-1.9150 *		-1.1016		-0.9381	
<b>Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks</b>						
Drank for 20+ occasions in the last 30 days during 10th grade (1 <sup>st</sup> stage)	-0.09897 (0.0671)	0.03382 *** (0.0076)	-0.06231 (0.0648)	0.01528 ** (0.0075)	-0.05250 (0.0651)	0.01598 ** (0.0075)
Drank 5+ drinks in a row at least 6 times in the last two weeks during 12th grade (1 <sup>st</sup> stage)	0.4806 *** (0.1777)		0.5286 *** (0.1745)		0.5246 *** (0.1747)	
F-statistic (IV's in the 1 <sup>st</sup> stage)	0.6397 *** (0.0874)		0.6186 *** (0.0859)		0.6147 *** (0.0860)	
Overidentification test (p-value)	32.00 ***		32.20 ***		31.67 ***	
Hausman Statistic	0.7363		0.7636		0.7420	
	-1.9924 **		-1.2046		-1.0588	

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%.

\*\*Statistically significant at 5%.

\*Statistically significant at 10%.

Model 1 contains general exogenous variables.

Model 2 contains those variables in Model 1 plus the number of children and marital status indicators.

Model 3 contains those variables in Model 2 plus educational attainment indicators.

See Appendix C7 and C8 for full estimation results.

## 6. Conclusions, Caveats, Policy Implications, and Future Works

Although conventional wisdom suggests that alcohol consumption would adversely affect labor market outcomes directly through a reduction in productivity and indirectly by decreasing human capital accumulation, many economists have obtained estimates of this relationship that are contrary to expectations. This study attempted to estimate causal effects of alcohol consumption on employment status and test the hypothesis that past alcohol use directly and indirectly leads to lower employment propensities by addressing potential estimation problems found in previous studies. Not only are several sample restrictions applied to the data sets to obtain more precise estimates, but the instrumental variables method is also employed to control for the potential endogeneity problem in order to obtain estimates that can be interpreted as causal effects. The results from three different data sets can be summarized as follows.

Using NESARC, the effects of drinking are identified using indicators of whether at least one of the respondent's parents and at least one of the respondent's siblings was ever an alcoholic or problem drinker. Estimates for both genders show that past alcohol abuse and/or dependence has no significant direct effects on current employment but has indirect negative effects through marriage, fertility, education and health. For males, alcohol abuse and/or dependence prior to and during the last 12 months indirectly lowers the probability of current employment by 10.2 and 26.7 percentage points, respectively. The negative indirect effects for females are larger: 23.4 percentage points for alcohol

abuse and/or dependence prior to the past year and 74.9 percentage points for past year abuse and/or dependence.

For frequencies of recent alcohol consumption, estimates imply that alcohol consumption has only an indirect effect on current employment propensity for females, but has both direct and indirect effects on current employment propensity for males, though the direct effect is relatively small. For males, having five or more alcoholic drinks one additional day a week in the past year directly and totally lowers the probability of current employment by 0.8 and 1.6 percentage points, respectively. Getting drunk one additional day a week in the past year directly and totally lowers the probability of current employment by 1.3 and 2.1 percentage points, respectively. For the female sample, the indirect effects are much bigger than those of males. Drinking five or more alcoholic drinks one additional day a week in the past year indirectly lowers the probability of current employment by 28.9 percentage points. Getting drunk one additional day a week in the past year indirectly lowers the probability of current employment by 83.3 percentage points.

The results and conclusions from NESARC for alcohol and/or dependence effects are partially comparable to those found by Mullahy and Sindelar (1991), Mullahy and Sindelar (1993), and Mullahy and Sindelar (1996), who also studied the effects of alcohol abuse and/or dependence on employment. Similar to these studies, this analysis finds that there is only an indirect effect of past alcohol abuse and/or dependence on current employment.

Using NSDUH, drinking effects are identified by indicators of the respondent's perspective about the risk of using alcohol and whether the respondent's religious

beliefs are an important part of his/her life. For males, alcohol abuse and/or dependence has small but significant negative direct employment effects and has significant negative indirect effects through human capital covariates. Alcohol abuse and/or dependence in the past year directly reduces the probability of past week employment by about 1.9 percentage points, which is about a tenth of the size of the total effect. For the number of days alcohol was consumed in the last year and in the last month, there are only negative indirect effects on employment. Drinking alcohol one additional day a week in the past year indirectly reduces the probability of past week employment by 1.7 percentage points. However, there are small direct and indirect effects of number of days on which the respondent drank heavily on the probability of employment last week.

For females, there is a large negative total and direct effect of past year alcohol abuse and/or dependence on employment. Alcohol abuse and/or dependence in the past year directly and totally reduces the probability of past week employment by 51.0 and 65.3 percentage points, respectively. Similarly, for all measures of consumption frequency, there are significant negative total and direct effects on female employment. Drinking alcohol one additional day a week in the past year directly and totally reduces the probability of past week employment by 3.6 and 5.3 percentage points, respectively. Drinking 5 or more alcohol drinks one additional day a week in the past month directly and totally reduces the probability of past week employment by 7.7 and 10.9 percentage points, respectively.

Using NELS:88, current drinking is identified using indicators of alcohol use when the respondents were in 10<sup>th</sup> and 12<sup>th</sup> grades. For males, the results do not show a statistically significant total effect of alcohol use on employment. However, the results

for females show that there is a small positive total effect of alcohol use on employment, contradicting the conventional wisdom about the negative effect of alcohol use on labor market outcomes.

Results from each data set provide different conclusions. For various reasons, the results obtained from NESARC might be preferred to those from the NSDUH and NELS:88. First, both of the latter data sets contain fewer control variables than NESARC, potentially causing the omitted variable problem. Second, the instrumental variables used in these two data sets are neither theoretically nor empirically superior to those used in NESARC, though the diagnostic tests imply that they are statistically adequate. Finally, NESARC offers more precise measures of alcohol consumption, reducing the measurement error. Based on the results from NESARC, it can be concluded that previous problematic heavy drinking, i.e. clinically-defined alcohol abuse and/or dependence or more frequent alcohol use, does lower the probability of current employment for both genders through human capital components, specifically educational attainment and health status.

The results from this study suggest some explanations for the conflicting results of previous studies about the effect of alcohol consumption on employment. First, the inclusion of human capital components makes drinking effects less likely to be significant. Second, different tolerances to alcohol might cause unstable results for frequency measures. Third, controlling for the endogeneity of alcohol use is difficult. Even though the instruments used here are extremely strong predictors of drinking, standard errors of 2SLS estimates were often too large to statistically distinguish them from OLS estimates even though 2SLS estimates were sometimes much larger in

magnitude from a practical perspective.

Since the results suggest that heavy alcohol consumption indirectly causes adverse labor market outcomes through human capital components, the true benefits to programs that reduce alcohol use, particularly heavy drinking and alcohol abuse and/or dependence, exceed those related just to crime, drunk driving, and other behaviors that are negatively affected by drinking. Any health policy tool that limits human capital-impairing alcohol consumption will not only reduce alcohol-related social problems but will also improve labor market outcomes. Such policy tools include information campaigns directed towards teenagers and students, a common period during which drinking is initiated; further minimum legal drinking age increases, although these are unlikely, given that the current age is 21; stricter penalties on underaged drinking and for any person who provides alcohol to an underaged drinker; and increased excise taxes on alcohol at the federal or state level. The 2SLS approaches in this study imply that any policy that prevents alcohol problems among parents and siblings, and to a lesser extent increases the risk awareness and reduces drinking during high school, will reduce alcohol problems, and thus increase employment, among working-age adults.

There are several suggestions for future research. First, one might perform cross-validation by applying the same methodology and model specification to the second wave of NESARC, which should be available in the near future. Second, the cross-sectional nature of the data in this study allows for investigation only of short-run effects and does not allow for changes in drinking patterns to be observed, but the medical literature suggests that alcohol is likely to have long term health effects. Therefore, one might try to obtain panel data to investigate the long term effects of alcohol use on labor market



outcomes using a similar approach to that of this study. Third, one might try to apply a different methodology or model specification to the same data used here to ensure the robustness of the results. More specifically, one could try a non-linear specification to investigate a possible non-linear relationship between alcohol consumption and labor market outcomes. Finally, one might try to obtain other instrumental variables to address the endogeneity problem that is inherent in the nature of the relationship between alcohol consumption and labor market outcomes.

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Appendix A: Complete Second Stage Regression Results Using NESARC

Appendix A-1: Current Employment (Full Time/Part Time) versus Alcohol Abuse and/or Dependence prior to the Last 12 Months: the Male Sample

Variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2					
	2SLS	OLS	2SLS	OLS				
Alcohol abuse and/or dependence prior to the last 12 months	-0.1022 ** (0.0496)	-0.0169 ** (0.0069)	-0.0864 * (0.0509)	-0.0141 ** (0.0069)	-0.0413 (0.0506)	-0.0144 ** (0.0068)	-0.0122 (0.0483)	-0.0050 (0.0064)
Age	0.0101 ** (0.0044)	0.0089 ** (0.0043)	0.0057 (0.0043)	0.0048 (0.0043)	0.0047 (0.0043)	0.0043 (0.0042)	0.0035 (0.0040)	0.0034 (0.0039)
Age squared	-0.0002 *** (0.0001)	-0.0001 *** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 (0.0000)	-0.0001 (0.0000)
White	0.0365 *** (0.0122)	0.0216 ** (0.0087)	0.0393 *** (0.0125)	0.0265 *** (0.0088)	0.0026 (0.0125)	-0.0021 (0.0090)	0.0001 (0.0117)	-0.0012 (0.0084)
Black	-0.0505 *** (0.0112)	-0.0517 *** (0.0111)	-0.0334 *** (0.0111)	-0.0343 *** (0.0111)	-0.0526 *** (0.0111)	-0.0527 *** (0.0111)	-0.0350 *** (0.0104)	-0.0350 *** (0.0104)
American Indian/Alaska Native	0.0125 (0.0287)	-0.0011 (0.0273)	0.0174 (0.0284)	0.0059 (0.0271)	-0.0078 (0.0280)	-0.0119 (0.0269)	0.0149 (0.0260)	0.0139 (0.0251)
Asian/Pacific Islander	0.0050 (0.0197)	0.0141 (0.0188)	0.0009 (0.0194)	0.0078 (0.0187)	-0.0330 * (0.0194)	-0.0306 (0.0188)	-0.0215 (0.0181)	-0.0209 (0.0175)
Living in MSA - in central city	0.0027 (0.0102)	0.0047 (0.0100)	0.0160 (0.0102)	0.0176 * (0.0100)	0.0048 (0.0101)	0.0053 (0.0100)	-0.0058 (0.0094)	-0.0057 (0.0094)
Living in MSA - outside central city	0.0378 *** (0.0094)	0.0392 *** (0.0093)	0.0375 *** (0.0093)	0.0384 *** (0.0092)	0.0238 ** (0.0093)	0.0241 *** (0.0092)	0.0075 (0.0086)	0.0076 (0.0086)
State unemployment rates	-0.0084 ** (0.0036)	-0.0077 ** (0.0036)	-0.0078 ** (0.0036)	-0.0071 ** (0.0035)	-0.0066 * (0.0035)	-0.0063 * (0.0035)	-0.0047 (0.0033)	-0.0046 (0.0033)
Father/mother ever depressed	0.0033 (0.0106)	-0.0052 (0.0093)	0.0044 (0.0106)	-0.0030 (0.0092)	-0.0060 (0.0105)	-0.0087 (0.0091)	-0.0035 (0.0097)	-0.0042 (0.0085)
Brother/sister ever depressed	0.0079 (0.0108)	0.0034 (0.0103)	0.0095 (0.0106)	0.0058 (0.0103)	0.0034 (0.0105)	0.0020 (0.0102)	0.0147 (0.0098)	0.0143 (0.0095)
Father/mother had behavior problems	-0.0111 (0.0155)	-0.0242 * (0.0135)	-0.0119 (0.0154)	-0.0226 * (0.0133)	-0.0139 (0.0152)	-0.0178 (0.0132)	-0.0062 (0.0141)	-0.0072 (0.0123)
Brother/sister had behavior problems	-0.0213 (0.0130)	-0.0313 *** (0.0116)	-0.0254 ** (0.0129)	-0.0335 *** (0.0115)	-0.0267 ** (0.0127)	-0.0297 *** (0.0114)	-0.0288 ** (0.0118)	-0.0295 *** (0.0106)
Number of children								
Married								
Cohabiting								
Widowed								
Divorced								
Separated								

Appendix A-1: (Continued)

<b>Completed graduate degree</b>	0.1541 *** (0.0144)	0.1545 *** (0.0144)	0.0706 *** (0.0138)	0.0704 *** (0.0137)
<b>Had some graduate studies</b>	0.1558 *** (0.0198)	0.1552 *** (0.0197)	0.0847 *** (0.0187)	0.0843 *** (0.0185)
<b>Completed college</b>	0.1297 *** (0.0128)	0.1292 *** (0.0127)	0.0593 *** (0.0123)	0.0589 *** (0.0121)
<b>Had some college education</b>	0.1004 *** (0.0115)	0.0989 *** (0.0111)	0.0473 *** (0.0110)	0.0468 *** (0.0105)
<b>Completed high school</b>	0.0875 *** (0.0117)	0.0868 *** (0.0116)	0.0460 *** (0.0110)	0.0458 *** (0.0109)
<b>Excellent health</b>			0.6725 *** (0.0208)	0.6731 *** (0.0204)
<b>Very good health</b>			0.6553 *** (0.0203)	0.6554 *** (0.0203)
<b>Good health</b>			0.6191 *** (0.0205)	0.6190 *** (0.0205)
<b>Fair health</b>			0.4393 *** (0.0225)	0.4388 *** (0.0222)
<b>Constant</b>	0.8086 *** (0.0871)	0.8035 *** (0.0863)	0.8165 *** (0.0858)	0.7596 *** (0.0852)
		0.8221 *** (0.0864)	0.1676 ** (0.0817)	0.1669 ** (0.0816)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-2: Current Employment (Full Time/Part Time) versus Alcohol

Abuse and/or Dependence in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.2666 ** (0.1328)	-0.0229 ** (0.0100)	-0.2368 * (0.1439)	-0.0095 (0.0100)	-0.1186 (0.1422)	-0.0088 (0.0099)	-0.0470 (0.1357)	-0.0052 (0.0092)
Age	0.0058 (0.0046)	0.0084 ** (0.0043)	0.0024 (0.0046)	0.0045 (0.0045)	0.0030 (0.0045)	0.0041 (0.0045)	0.0029 (0.0042)	0.0033 (0.0039)
Age squared	-0.0001 ** (0.0001)	-0.0001 *** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 (0.0000)	-0.0001 (0.0000)
White	0.0272 *** (0.0099)	0.0194 ** (0.0086)	0.0310 *** (0.0099)	0.0243 *** (0.0087)	-0.0012 (0.0099)	-0.0043 (0.0089)	-0.0007 (0.0092)	-0.0019 (0.0083)
Black	-0.0512 *** (0.0114)	-0.0519 *** (0.0111)	-0.0367 *** (0.0115)	-0.0345 *** (0.0111)	-0.0543 *** (0.0114)	-0.0528 *** (0.0111)	-0.0357 *** (0.0106)	-0.0351 *** (0.0104)
American Indian/Alaska Native	0.0029 (0.0284)	-0.0032 (0.0273)	0.0086 (0.0280)	0.0039 (0.0271)	-0.0119 (0.0272)	-0.0139 (0.0269)	0.0139 (0.0252)	0.0133 (0.0251)
Asian/Pacific Islander	0.0022 (0.0206)	0.0148 (0.0188)	-0.0006 (0.0201)	0.0088 (0.0187)	-0.0336 * (0.0196)	-0.0297 (0.0188)	-0.0221 (0.0182)	-0.0206 (0.0175)
Living in MSA - in central city	0.0035 (0.0104)	0.0050 (0.0100)	0.0149 (0.0105)	0.0178 * (0.0100)	0.0044 (0.0102)	0.0056 (0.0100)	-0.0060 (0.0094)	-0.0056 (0.0094)
Living in MSA - outside central city	0.0342 *** (0.0099)	0.0390 *** (0.0093)	0.0348 *** (0.0098)	0.0384 *** (0.0095)	0.0226 ** (0.0092)	0.0242 *** (0.0092)	0.0070 (0.0088)	0.0075 (0.0086)
State unemployment rates	-0.0098 ** (0.0038)	-0.0077 ** (0.0036)	-0.0091 ** (0.0039)	-0.0070 ** (0.0035)	-0.0073 * (0.0038)	-0.0062 * (0.0035)	-0.0050 (0.0035)	-0.0046 (0.0033)
Father/mother ever depressed	-0.0007 (0.0100)	-0.0064 (0.0093)	0.0010 (0.0100)	-0.0042 (0.0092)	-0.0073 (0.0098)	-0.0100 (0.0091)	-0.0036 (0.0090)	-0.0046 (0.0085)
Brother/sister ever depressed	0.0060 (0.0108)	0.0028 (0.0103)	0.0076 (0.0107)	0.0052 (0.0103)	0.0026 (0.0104)	0.0013 (0.0102)	0.0146 (0.0096)	0.0141 (0.0095)
Father/mother had behavior problems	-0.0126 (0.0156)	-0.0256 * (0.0134)	-0.0132 (0.0154)	-0.0242 * (0.0133)	-0.0143 (0.0150)	-0.0196 (0.0132)	-0.0057 (0.0139)	-0.0077 (0.0123)
Brother/sister had behavior problems	-0.0212 (0.0134)	-0.0322 *** (0.0116)	-0.0248 * (0.0133)	-0.0347 *** (0.0115)	-0.0263 ** (0.0129)	-0.0310 *** (0.0114)	-0.0282 ** (0.0119)	-0.0299 *** (0.0106)
Number of children			-0.0041 (0.0026)	-0.0053 ** (0.0024)	0.0001 (0.0025)	-0.0004 (0.0024)	0.0013 (0.0023)	0.0011 (0.0022)
Married			0.0928 *** (0.0133)	0.1069 *** (0.0096)	0.0942 *** (0.0130)	0.1009 *** (0.0095)	0.0759 *** (0.0120)	0.0784 *** (0.0089)
Cohabiting			0.0572 *** (0.0193)	0.0531 *** (0.0186)	0.0618 *** (0.0187)	0.0599 *** (0.0184)	0.0518 *** (0.0173)	0.0511 *** (0.0172)
Widowed			-0.0227 (0.0442)	-0.0299 (0.0427)	-0.0229 (0.0428)	-0.0264 (0.0423)	0.0056 (0.0397)	0.0043 (0.0394)
Divorced			0.0458 *** (0.0140)	0.0367 *** (0.0124)	0.0415 *** (0.0136)	0.0373 *** (0.0123)	0.0365 *** (0.0126)	0.0349 *** (0.0115)
Separated			0.0253 (0.0236)	0.0094 (0.0208)	0.0211 (0.0229)	0.0136 (0.0206)	0.0083 (0.0214)	0.0054 (0.0192)

Appendix A-2: (Continued)

<b>Completed graduate degree</b>	0.1522 *** (0.0148)	0.1545 *** (0.0144)	0.0700 *** (0.0138)	0.0703 *** (0.0137)
<b>Had some graduate studies</b>	0.1556 *** (0.0199)	0.1549 *** (0.0197)	0.0848 *** (0.0187)	0.0842 *** (0.0185)
<b>Completed college</b>	0.1298 *** (0.0129)	0.1289 *** (0.0127)	0.0595 *** (0.0123)	0.0588 *** (0.0121)
<b>Had some college education</b>	0.1005 *** (0.0116)	0.0983 *** (0.0111)	0.0475 *** (0.0110)	0.0465 *** (0.0105)
<b>Completed high school</b>	0.0885 *** (0.0120)	0.0866 *** (0.0117)	0.0465 *** (0.0112)	0.0457 *** (0.0109)
<b>Excellent health</b>			0.6732 *** (0.0204)	0.6735 *** (0.0204)
<b>Very good health</b>			0.6564 *** (0.0205)	0.6555 *** (0.0203)
<b>Good health</b>			0.6207 *** (0.0211)	0.6192 *** (0.0205)
<b>Fair health</b>			0.4406 *** (0.0231)	0.4386 *** (0.0222)
<b>Constant</b>	0.9166 *** (0.1057)	0.8123 *** (0.0864)	0.8095 *** (0.1051)	0.1687 ** (0.0817)
	0.9182 *** (0.1082)	0.8195 *** (0.0859)	0.7626 *** (0.0854)	0.1860 * (0.0993)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-3: Currently Working Full Time (35+ Hours a Week) versus  
Alcohol Abuse and/or Dependence prior to the Last 12 Months: the Male Sample

Variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence prior to the last 12 months	-0.1226 ** (0.0564)	-0.0138 * (0.0079)	-0.1080 * (0.0576)	-0.0107 (0.0078)	-0.0521 (0.0571)	-0.0113 (0.0077)	-0.0210 (0.0554)	-0.0012 (0.0073)
Age	0.0180 *** (0.0049)	0.0165 *** (0.0048)	0.0114 ** (0.0049)	0.0101 ** (0.0048)	0.0100 ** (0.0048)	0.0095 *** (0.0048)	0.0087 * (0.0046)	0.0085 * (0.0045)
Age squared	-0.0003 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)
White	0.0532 *** (0.0139)	0.0342 *** (0.0099)	0.0585 *** (0.0142)	0.0413 *** (0.0099)	0.0120 (0.0141)	0.0050 (0.0102)	0.0086 (0.0135)	0.0052 (0.0096)
Black	-0.0431 *** (0.0127)	-0.0447 *** (0.0126)	-0.0208 * (0.0126)	-0.0219 * (0.0125)	-0.0458 *** (0.0126)	-0.0460 *** (0.0126)	-0.0285 ** (0.0119)	-0.0285 ** (0.0119)
American Indian/Alaska Native	0.0022 (0.0326)	-0.0151 (0.0310)	0.0101 (0.0322)	-0.0053 (0.0306)	-0.0223 (0.0316)	-0.0285 (0.0304)	-0.0001 (0.0299)	-0.0001 (0.0288)
Asian/Pacific Islander	-0.0041 (0.0223)	0.0076 (0.0213)	-0.0087 (0.0220)	0.0006 (0.0211)	-0.0510 ** (0.0219)	-0.0474 ** (0.0213)	-0.0394 * (0.0208)	-0.0376 * (0.0201)
Living in MSA - in central city	-0.0025 (0.0116)	0.0000 (0.0114)	0.0166 (0.0115)	0.0188 * (0.0114)	0.0031 (0.0114)	0.0039 (0.0113)	-0.0077 (0.0108)	-0.0073 (0.0107)
Living in MSA - outside central city	0.0470 *** (0.0107)	0.0488 *** (0.0105)	0.0481 *** (0.0105)	0.0493 *** (0.0104)	0.0313 *** (0.0104)	0.0318 *** (0.0104)	0.0148 (0.0099)	0.0150 (0.0099)
State unemployment rates	-0.0097 ** (0.0041)	-0.0088 ** (0.0040)	-0.0089 ** (0.0041)	-0.0080 ** (0.0040)	-0.0074 * (0.0040)	-0.0070 * (0.0039)	-0.0056 (0.0038)	-0.0054 (0.0037)
Father/mother ever depressed	0.0079 (0.0120)	-0.0030 (0.0105)	0.0102 (0.0120)	0.0003 (0.0104)	-0.0024 (0.0118)	-0.0066 (0.0103)	0.0002 (0.0112)	-0.0018 (0.0098)
Brother/sister ever depressed	-0.0029 (0.0122)	-0.0087 (0.0117)	-0.0004 (0.0121)	-0.0054 (0.0116)	-0.0079 (0.0119)	-0.0101 (0.0115)	0.0032 (0.0112)	0.0022 (0.0109)
Father/mother had behavior problems	0.0177 (0.0177)	-0.0246 (0.0153)	-0.0088 (0.0174)	-0.0232 (0.0151)	-0.0112 (0.0171)	-0.0172 (0.0149)	-0.0037 (0.0162)	-0.0066 (0.0141)
Brother/sister had behavior problems	-0.0188 (0.0148)	-0.0315 ** (0.0131)	-0.0239 (0.0146)	-0.0349 *** (0.0130)	-0.0257 * (0.0143)	-0.0302 ** (0.0128)	-0.0276 ** (0.0135)	-0.0298 ** (0.0122)
Number of children			-0.0046 * (0.0027)	-0.0052 * (0.0027)	0.0012 (0.0027)	0.0009 (0.0027)	0.0027 (0.0026)	0.0026 (0.0026)
Married			0.1452 *** (0.0109)	0.1464 *** (0.0108)	0.1384 *** (0.0108)	0.1389 *** (0.0107)	0.1159 *** (0.0102)	0.1160 *** (0.0102)
Cohabiting			0.0639 *** (0.0217)	0.0562 *** (0.0210)	0.0678 *** (0.0213)	0.0646 *** (0.0208)	0.0570 *** (0.0202)	0.0554 *** (0.0197)
Widowed			-0.0108 (0.0487)	-0.0139 (0.0482)	-0.0085 (0.0478)	-0.0098 (0.0477)	0.0203 (0.0452)	0.0197 (0.0452)
Divorced			0.0767 *** (0.0147)	0.0698 *** (0.0140)	0.0731 *** (0.0144)	0.0703 *** (0.0139)	0.0686 *** (0.0137)	0.0672 *** (0.0132)
Separated			0.0469 ** (0.0239)	0.0411 * (0.0234)	0.0486 ** (0.0235)	0.0463 ** (0.0232)	0.0389 * (0.0222)	0.0377 * (0.0220)

Appendix A-3: (Continued)

<b>Completed graduate degree</b>	0.1932 *** (0.0163)	0.1937 *** (0.0163)	0.1080 *** (0.0158)	0.1075 *** (0.0158)
<b>Had some graduate studies</b>	0.1957 *** (0.0223)	0.1946 *** (0.0222)	0.1232 *** (0.0215)	0.1221 *** (0.0212)
<b>Completed college</b>	0.1663 *** (0.0144)	0.1654 *** (0.0144)	0.0947 *** (0.0141)	0.0937 *** (0.0138)
<b>Had some college education</b>	0.1299 *** (0.0130)	0.1276 *** (0.0126)	0.0762 *** (0.0126)	0.0749 *** (0.0120)
<b>Completed high school</b>	0.1181 *** (0.0132)	0.1171 *** (0.0131)	0.0766 *** (0.0126)	0.0760 *** (0.0125)
<b>Excellent health</b>			0.6551 *** (0.0238)	0.6568 *** (0.0234)
<b>Very good health</b>			0.6398 *** (0.0233)	0.6399 *** (0.0233)
<b>Good health</b>			0.5911 *** (0.0235)	0.5908 *** (0.0235)
<b>Fair health</b>			0.4146 *** (0.0258)	0.4131 *** (0.0255)
<b>Constant</b>	0.6252 *** (0.0990)	0.6187 *** (0.0978)	0.6497 *** (0.0969)	0.5769 *** (0.0961)
			0.6573 *** (0.0979)	0.6497 *** (0.0961)
			0.5792 *** (0.0963)	0.5769 *** (0.0961)
			0.0053 (0.0938)	0.0036 (0.0937)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-4: Currently Working Full Time (35+ Hours a Week) versus  
Alcohol Abuse and/or Dependence in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.3038 ** (0.1502)	-0.0351 *** (0.0113)	-0.2744 * (0.1625)	-0.0188 * (0.0113)	-0.1271 (0.1601)	-0.0182 (0.0112)	-0.0485 (0.1556)	-0.0140 (0.0106)
Age	0.0131 ** (0.0052)	0.0160 *** (0.0048)	0.0074 (0.0052)	0.0098 ** (0.0048)	0.0081 (0.0050)	0.0091 * (0.0048)	0.0080 * (0.0048)	0.0083 * (0.0045)
Age squared	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 ** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)
White	0.0415 *** (0.0112)	0.0329 *** (0.0098)	0.0475 *** (0.0112)	0.0400 *** (0.0098)	0.0066 (0.0111)	0.0035 (0.0101)	0.0064 (0.0105)	0.0054 (0.0096)
Black	-0.0441 *** (0.0130)	-0.0448 *** (0.0125)	-0.0246 * (0.0130)	-0.0222 * (0.0125)	-0.0477 *** (0.0128)	-0.0463 *** (0.0126)	-0.0292 ** (0.0121)	-0.0287 ** (0.0119)
American Indian/Alaska Native	-0.0097 (0.0322)	-0.0165 (0.0310)	-0.0014 (0.0317)	-0.0067 (0.0306)	-0.0279 (0.0307)	-0.0299 (0.0304)	-0.0024 (0.0289)	-0.0030 (0.0288)
Asian/Pacific Islander	-0.0066 (0.0233)	0.0072 (0.0213)	-0.0098 (0.0227)	0.0008 (0.0211)	-0.0509 ** (0.0221)	-0.0470 ** (0.0212)	-0.0392 * (0.0209)	-0.0380 * (0.0201)
Living in MSA - in central city	-0.0016 (0.0118)	0.0001 (0.0114)	0.0156 (0.0119)	0.0188 * (0.0114)	0.0029 (0.0115)	0.0040 (0.0113)	-0.0077 (0.0108)	-0.0074 (0.0107)
Living in MSA - outside central city	0.0430 *** (0.0113)	0.0484 *** (0.0105)	0.0451 *** (0.0110)	0.0491 *** (0.0104)	0.0301 *** (0.0107)	0.0316 *** (0.0104)	0.0144 (0.0101)	0.0148 (0.0099)
State unemployment rates	-0.0112 *** (0.0043)	-0.0089 ** (0.0040)	-0.0104 ** (0.0044)	-0.0081 ** (0.0040)	-0.0081 * (0.0042)	-0.0070 * (0.0039)	-0.0058 (0.0040)	-0.0055 (0.0037)
Father/mother ever depressed	0.0026 (0.0114)	-0.0036 (0.0105)	0.0055 (0.0113)	-0.0003 (0.0104)	-0.0047 (0.0110)	-0.0073 (0.0103)	-0.0008 (0.0103)	-0.0016 (0.0097)
Brother/sister ever depressed	-0.0054 (0.0123)	-0.0089 (0.0117)	-0.0030 (0.0120)	-0.0057 (0.0116)	-0.0092 (0.0117)	-0.0104 (0.0115)	0.0027 (0.0110)	0.0023 (0.0109)
Father/mother had behavior problems	-0.0106 (0.0176)	-0.0249 (0.0152)	-0.0115 (0.0174)	-0.0239 (0.0150)	-0.0127 (0.0168)	-0.0180 (0.0149)	-0.0045 (0.0159)	-0.0061 (0.0141)
Brother/sister had behavior problems	-0.0194 (0.0151)	-0.0315 ** (0.0131)	-0.0242 (0.0130)	-0.0353 *** (0.0130)	-0.0261 * (0.0146)	-0.0307 ** (0.0128)	-0.0279 ** (0.0137)	-0.0293 ** (0.0121)
Number of children			-0.0038 (0.0029)	-0.0052 * (0.0027)	0.0015 (0.0028)	0.0009 (0.0027)	0.0028 (0.0026)	0.0026 (0.0026)
Married			0.1295 *** (0.0150)	0.1453 *** (0.0108)	0.1313 *** (0.0146)	0.1379 *** (0.0107)	0.1131 *** (0.0137)	0.1152 *** (0.0102)
Cohabiting			0.0603 *** (0.0218)	0.0557 *** (0.0210)	0.0658 *** (0.0211)	0.0640 *** (0.0208)	0.0561 *** (0.0199)	0.0555 *** (0.0197)
Widowed			-0.0056 (0.0499)	-0.0136 (0.0482)	-0.0062 (0.0482)	-0.0096 (0.0477)	0.0212 (0.0455)	0.0201 (0.0452)
Divorced			0.0800 *** (0.0158)	0.0698 *** (0.0140)	0.0744 *** (0.0153)	0.0702 *** (0.0139)	0.0690 *** (0.0145)	0.0677 *** (0.0132)
Separated			0.0597 ** (0.0267)	0.0418 * (0.0234)	0.0543 ** (0.0258)	0.0469 ** (0.0232)	0.0410 * (0.0245)	0.0386 * (0.0220)

Appendix A-4: (Continued)

<b>Completed graduate degree</b>	0.1912 *** (0.0167)	0.1935 *** (0.0163)	0.1071 *** (0.0158)	0.1074 *** (0.0158)
<b>Had some graduate studies</b>	0.1952 *** (0.0224)	0.1945 *** (0.0222)	0.1229 *** (0.0214)	0.1223 *** (0.0212)
<b>Completed college</b>	0.1662 *** (0.0145)	0.1653 *** (0.0144)	0.0945 *** (0.0141)	0.0939 *** (0.0138)
<b>Had some college education</b>	0.1295 *** (0.0130)	0.1273 *** (0.0126)	0.0759 *** (0.0126)	0.0751 *** (0.0120)
<b>Completed high school</b>	0.1190 *** (0.0135)	0.1171 *** (0.0131)	0.0769 *** (0.0129)	0.0762 *** (0.0125)
<b>Excellent health</b>			0.6565 *** (0.0234)	0.6568 *** (0.0234)
<b>Very good health</b>			0.6409 *** (0.0235)	0.6402 *** (0.0233)
<b>Good health</b>			0.5925 *** (0.0242)	0.5913 *** (0.0235)
<b>Fair health</b>			0.4153 *** (0.0265)	0.4137 *** (0.0255)
<b>Constant</b>	0.7479 *** (0.1197)	0.6329 *** (0.0979)	0.6571 *** (0.0971)	0.5840 *** (0.0962)
		0.7681 *** (0.1222)	0.0237 (0.1139)	0.0093 (0.0938)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-5: Current Employment (Full Time/Part Time) versus Alcohol Abuse and/or Dependence prior to the Last 12 Months: the Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence prior to the last 12 months	-0.2342 *** (0.0777)	-0.0084 (0.0089)	-0.1454 * (0.0746)	-0.0061 (0.0088)	-0.0948 (0.0734)	-0.0103 (0.0088)	0.0006 (0.0685)	-0.0074 (0.0082)
Age	0.0111 ** (0.0048)	0.0072 (0.0044)	0.0098 ** (0.0047)	0.0070 (0.0044)	0.0083 * (0.0046)	0.0067 (0.0044)	0.0076 * (0.0043)	0.0078 * (0.0041)
Age squared	-0.0002 *** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)
White	0.0953 *** (0.0165)	0.0573 *** (0.0099)	0.0649 *** (0.0158)	0.0420 *** (0.0099)	0.0274 * (0.0152)	0.0141 (0.0100)	0.0120 (0.0142)	0.0132 (0.0093)
Black	-0.0115 (0.0113)	-0.0112 (0.0109)	0.0022 (0.0112)	0.0040 (0.0110)	-0.0188 * (0.0112)	-0.0172 (0.0111)	-0.0079 (0.0104)	-0.0081 (0.0103)
American Indian/Alaska Native	0.0245 (0.0336)	-0.0191 (0.0291)	0.0077 (0.0325)	-0.0191 (0.0289)	-0.0221 (0.0318)	-0.0377 (0.0286)	-0.0153 (0.0294)	-0.0138 (0.0266)
Asian/Pacific Islander	0.0722 *** (0.0226)	0.0774 *** (0.0218)	0.0538 ** (0.0220)	0.0570 *** (0.0217)	0.0222 (0.0218)	0.0246 (0.0216)	0.0240 (0.0202)	0.0238 (0.0201)
Living in MSA - in central city	0.0110 (0.0112)	0.0089 (0.0109)	0.0075 (0.0110)	0.0076 (0.0108)	0.0004 (0.0108)	0.0008 (0.0108)	-0.0086 (0.0100)	-0.0086 (0.0100)
Living in MSA - outside central city	0.0396 *** (0.0106)	0.0397 *** (0.0102)	0.0279 *** (0.0103)	0.0284 *** (0.0102)	0.0170 * (0.0102)	0.0177 * (0.0102)	0.0007 (0.0095)	0.0007 (0.0095)
State unemployment rates	-0.0087 ** (0.0044)	-0.0057 (0.0042)	-0.0078 * (0.0043)	-0.0058 (0.0041)	-0.0068 (0.0042)	-0.0055 (0.0041)	-0.0025 (0.0039)	-0.0026 (0.0038)
Father/mother ever depressed	0.0059 (0.0121)	-0.0165 * (0.0091)	-0.0031 (0.0116)	-0.0166 * (0.0090)	-0.0148 (0.0112)	-0.0227 ** (0.0089)	-0.0130 (0.0104)	-0.0123 (0.0083)
Brother/sister ever depressed	0.0035 (0.0103)	-0.0020 (0.0098)	0.0025 (0.0100)	-0.0008 (0.0097)	-0.0004 (0.0098)	0.0024 (0.0096)	0.0046 (0.0091)	0.0048 (0.0089)
Father/mother had behavior problems	-0.0343 ** (0.0144)	-0.0510 *** (0.0128)	-0.0324 ** (0.0140)	-0.0425 *** (0.0127)	-0.0319 ** (0.0137)	-0.0380 *** (0.0126)	-0.0128 (0.0127)	-0.0122 (0.0118)
Brother/sister had behavior problems	-0.0088 (0.0146)	-0.0343 *** (0.0114)	-0.0155 (0.0142)	-0.0313 *** (0.0113)	-0.0200 (0.0139)	-0.0294 *** (0.0112)	-0.0213 * (0.0128)	-0.0204 ** (0.0104)
Number of children								
Married								
Cohabiting								
Widowed								
Divorced								
Separated								

Appendix A-5: (Continued)

<b>Completed graduate degree</b>	0.1958 *** (0.0164)	0.1934 *** (0.0162)	0.1102 *** (0.0156)	0.1105 *** (0.0154)
<b>Had some graduate studies</b>	0.1987 *** (0.0211)	0.1922 *** (0.0202)	0.1109 *** (0.0198)	0.1115 *** (0.0190)
<b>Completed college</b>	0.1810 *** (0.0152)	0.1772 *** (0.0148)	0.1023 *** (0.0144)	0.1027 *** (0.0140)
<b>Had some college education</b>	0.1410 *** (0.0135)	0.1359 *** (0.0126)	0.0802 *** (0.0127)	0.0807 *** (0.0119)
<b>Completed high school</b>	0.1153 *** (0.0134)	0.1144 *** (0.0133)	0.0670 *** (0.0125)	0.0671 *** (0.0125)
<b>Excellent health</b>			0.6235 *** (0.0193)	0.6232 *** (0.0191)
<b>Very good health</b>			0.6176 *** (0.0190)	0.6176 *** (0.0190)
<b>Good health</b>			0.5831 *** (0.0191)	0.5831 *** (0.0191)
<b>Fair health</b>			0.3530 *** (0.0209)	0.3529 *** (0.0209)
<b>Constant</b>	0.7382 *** (0.0951)	0.7727 *** (0.0913)	0.7481 *** (0.0925)	0.6643 *** (0.0901)
			0.7713 *** (0.0905)	0.0776 (0.0866)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-6: Current Employment (Full Time/Part Time) versus Alcohol Abuse and/or Dependence in the Last 12 Months: the Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.7488 *** (0.2794)	-0.0243 (0.0155)	-0.4936 * (0.2692)	-0.0149 (0.0154)	-0.3504 (0.2678)	-0.0122 (0.0153)	0.0020 (0.2426)	-0.0150 (0.0142)
Age	0.0061 (0.0050)	0.0071 (0.0044)	0.0070 (0.0047)	0.0069 (0.0044)	0.0065 (0.0045)	0.0065 (0.0044)	0.0076 * (0.0041)	0.0076 * (0.0041)
Age squared	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)
White	0.0878 *** (0.0161)	0.0569 *** (0.0098)	0.0613 *** (0.0151)	0.0417 *** (0.0098)	0.0274 * (0.0152)	0.0130 (0.0099)	0.0120 (0.0138)	0.0127 (0.0092)
Black	-0.0058 (0.0123)	-0.0110 (0.0109)	0.0027 (0.0116)	0.0040 (0.0110)	-0.0178 (0.0114)	-0.0170 (0.0111)	-0.0079 (0.0103)	-0.0080 (0.0103)
American Indian/Alaska Native	0.0252 (0.0366)	-0.0192 (0.0291)	0.0102 (0.0345)	-0.0194 (0.0288)	-0.0180 (0.0336)	-0.0389 (0.0286)	-0.0153 (0.0305)	-0.0143 (0.0266)
Asian/Pacific Islander	0.0836 *** (0.0243)	0.0777 *** (0.0218)	0.0623 *** (0.0229)	0.0573 *** (0.0217)	0.0297 (0.0225)	0.0251 (0.0216)	0.0240 (0.0204)	0.0242 (0.0201)
Living in MSA - in central city	0.0189 (0.0126)	0.0091 (0.0109)	0.0111 (0.0115)	0.0078 (0.0108)	0.0036 (0.0113)	0.0009 (0.0108)	-0.0086 (0.0102)	-0.0084 (0.0100)
Living in MSA - outside central city	0.0401 *** (0.0114)	0.0397 *** (0.0102)	0.0282 *** (0.0107)	0.0284 *** (0.0102)	0.0179 * (0.0104)	0.0178 * (0.0102)	0.0007 (0.0095)	0.0007 (0.0095)
State unemployment rates	-0.0110 ** (0.0050)	-0.0058 (0.0042)	-0.0095 ** (0.0048)	-0.0059 (0.0041)	-0.0080 * (0.0047)	-0.0055 (0.0041)	-0.0025 (0.0042)	-0.0026 (0.0038)
Father/mother ever depressed	-0.0071 (0.0107)	-0.0170 * (0.0090)	-0.0110 * (0.0100)	-0.0170 * (0.0089)	-0.0192 ** (0.0097)	-0.0235 *** (0.0089)	-0.0130 (0.0088)	-0.0128 (0.0083)
Brother/sister ever depressed	0.0180 (0.0132)	-0.0016 (0.0098)	0.0121 (0.0124)	-0.0005 (0.0097)	0.0068 (0.0122)	0.0023 (0.0096)	0.0045 (0.0110)	0.0050 (0.0089)
Father/mother had behavior problems	-0.0361 ** (0.0154)	-0.0511 *** (0.0128)	-0.0337 ** (0.0143)	-0.0427 *** (0.0127)	-0.0324 ** (0.0138)	-0.0385 *** (0.0126)	-0.0128 (0.0125)	-0.0125 (0.0117)
Brother/sister had behavior problems	-0.0159 (0.0145)	-0.0346 *** (0.0113)	-0.0194 (0.0136)	-0.0316 *** (0.0112)	-0.0219 * (0.0132)	-0.0303 *** (0.0111)	-0.0212 * (0.0120)	-0.0208 ** (0.0104)
Number of children			-0.0247 *** (0.0026)	-0.0234 *** (0.0024)	-0.0150 *** (0.0027)	-0.0138 *** (0.0025)	-0.0094 *** (0.0025)	-0.0095 *** (0.0023)
Married			0.0602 *** (0.0149)	0.0790 *** (0.0100)	0.0575 *** (0.0146)	0.0707 *** (0.0100)	0.0438 *** (0.0133)	0.0432 *** (0.0093)
Cohabiting			0.0131 (0.0216)	0.0110 (0.0205)	0.0197 (0.0209)	0.0186 (0.0203)	-0.0053 (0.0190)	-0.0052 (0.0189)
Widowed			-0.0513 ** (0.0256)	-0.0548 ** (0.0244)	-0.0458 * (0.0248)	-0.0480 ** (0.0241)	-0.0234 (0.0225)	-0.0233 (0.0225)
Divorced			0.0162 (0.0125)	0.0153 (0.0119)	0.0129 (0.0121)	0.0125 (0.0118)	0.0103 (0.0110)	0.0103 (0.0110)
Separated			0.0060 (0.0181)	0.0044 (0.0172)	0.0132 (0.0175)	0.0124 (0.0170)	0.0178 (0.0159)	0.0178 (0.0158)

Appendix A-6: (Continued)

<b>Completed graduate degree</b>	0.1848 *** (0.0178)	0.1928 *** (0.0162)	0.1103 *** (0.0164)	0.1099 *** (0.0154)
<b>Had some graduate studies</b>	0.1909 *** (0.0207)	0.1914 *** (0.0202)	0.1109 *** (0.0190)	0.1109 *** (0.0190)
<b>Completed college</b>	0.1749 *** (0.0152)	0.1766 *** (0.0147)	0.1023 *** (0.0140)	0.1023 *** (0.0140)
<b>Had some college education</b>	0.1358 *** (0.0130)	0.1352 *** (0.0126)	0.0802 *** (0.0119)	0.0802 *** (0.0119)
<b>Completed high school</b>	0.1133 *** (0.0137)	0.1143 *** (0.0133)	0.0670 *** (0.0125)	0.0669 *** (0.0125)
<b>Excellent health</b>			0.6235 *** (0.0191)	0.6235 *** (0.0191)
<b>Very good health</b>			0.6175 *** (0.0191)	0.6177 *** (0.0190)
<b>Good health</b>			0.5831 *** (0.0191)	0.5832 *** (0.0191)
<b>Fair health</b>			0.3530 *** (0.0209)	0.3529 *** (0.0209)
<b>Constant</b>	0.8674 *** (0.1072)	0.7770 *** (0.0913)	0.7741 *** (0.0905)	0.6677 *** (0.0901)
		0.8333 *** (0.1007)		0.0786 (0.0913)
				0.0807 (0.0859)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-7: Currently Working Full Time (35+ Hours a Week) versus

Alcohol Abuse and/or Dependence prior to the Last 12 Months: the Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2					
	2SLS	OLS	2SLS	OLS				
Alcohol abuse and/or dependence prior to the last 12 months	-0.3544 *** (0.1040)	0.0190 (0.0117)	-0.2490 ** (0.0990)	0.0110 (0.0116)	-0.1727 * (0.0967)	0.0057 (0.0114)	-0.0821 (0.0932)	0.0090 (0.0111)
Age	0.0029 (0.0064)	-0.0035 (0.0058)	0.0058 (0.0063)	0.0005 (0.0058)	0.0038 (0.0061)	0.0004 (0.0057)	0.0031 (0.0058)	0.0014 (0.0055)
Age squared	-0.0001 (0.0001)	0.0000 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
White	0.1062 *** (0.0221)	0.0434 *** (0.0129)	0.0583 *** (0.0209)	0.0156 (0.0129)	0.0068 (0.0200)	-0.0211 (0.0131)	-0.0082 * (0.0194)	-0.0226 * (0.0126)
Black	0.0359 ** (0.0151)	0.0365 ** (0.0144)	0.0261 * (0.0149)	0.0294 ** (0.0145)	-0.0002 (0.0148)	0.0031 (0.0145)	0.0103 (0.0142)	0.0122 (0.0140)
American Indian/Alaska Native	0.0370 (0.0450)	-0.0351 (0.0382)	0.0189 (0.0431)	-0.0312 (0.0378)	-0.0210 (0.0418)	-0.0540 (0.0374)	-0.0147 (0.0400)	-0.0314 (0.0361)
Asian/Pacific Islander	0.0593 * (0.0303)	0.0679 ** (0.0286)	0.0386 (0.0292)	0.0446 (0.0284)	-0.0056 (0.0288)	-0.0004 (0.0283)	-0.0038 (0.0275)	-0.0012 (0.0273)
Living in MSA - in central city	0.0424 *** (0.0150)	0.0389 *** (0.0143)	0.0169 (0.0146)	0.0172 (0.0142)	0.0059 (0.0141)	0.0067 (0.0141)	-0.0025 (0.0137)	-0.0021 (0.0136)
Living in MSA - outside central city	0.0423 *** (0.0142)	0.0424 *** (0.0135)	0.0206 (0.0137)	0.0216 (0.0134)	0.0051 (0.0135)	0.0065 (0.0133)	-0.0103 (0.0129)	-0.0097 (0.0128)
State unemployment rates	-0.0019 (0.0059)	0.0032 (0.0055)	-0.0018 (0.0057)	0.0018 (0.0054)	-0.0005 (0.0056)	0.0021 (0.0053)	0.0035 (0.0054)	0.0049 (0.0052)
Father/mother ever depressed	0.0166 (0.0162)	-0.0206 * (0.0119)	0.0026 (0.0154)	-0.0227 * (0.0117)	-0.0146 (0.0148)	-0.0313 *** (0.0116)	-0.0129 (0.0141)	-0.0213 * (0.0112)
Brother/sister ever depressed	0.0125 (0.0138)	0.0034 (0.0128)	0.0100 (0.0132)	0.0039 (0.0127)	0.0051 (0.0129)	0.0009 (0.0125)	0.0100 (0.0123)	0.0080 (0.0121)
Father/mother had behavior problems	-0.0280 (0.0193)	-0.0556 *** (0.0168)	-0.0294 (0.0185)	-0.0482 *** (0.0167)	-0.0291 (0.0180)	-0.0419 ** (0.0165)	-0.0112 (0.0173)	-0.0175 (0.0159)
Brother/sister had behavior problems	-0.0035 (0.0196)	-0.0455 *** (0.0149)	-0.0117 (0.0188)	-0.0411 *** (0.0147)	-0.0181 (0.0183)	-0.0380 *** (0.0146)	-0.0195 (0.0175)	-0.0296 ** (0.0141)
Number of children			-0.0479 *** (0.0033)	-0.0456 *** (0.0031)	-0.0336 *** (0.0033)	-0.0324 *** (0.0032)	-0.0289 *** (0.0032)	-0.0282 *** (0.0031)
Married			-0.0063 (0.0143)	0.0065 (0.0131)	-0.0139 (0.0141)	-0.0046 (0.0130)	-0.0354 *** (0.0126)	-0.0309 ** (0.0126)
Cohabiting			0.0273 (0.0286)	0.0077 (0.0269)	0.0318 (0.0279)	0.0185 (0.0266)	0.0026 (0.0267)	-0.0042 (0.0257)
Widowed			-0.0695 ** (0.0327)	-0.0713 ** (0.0319)	-0.0604 * (0.0319)	-0.0620 ** (0.0315)	-0.0375 (0.0306)	-0.0382 (0.0305)
Divorced			0.0505 *** (0.0161)	0.0537 *** (0.0156)	0.0484 *** (0.0157)	0.0511 *** (0.0155)	0.0475 *** (0.0150)	0.0488 *** (0.0149)
Separated			0.0332 (0.0231)	0.0317 (0.0225)	0.0445 ** (0.0226)	0.0433 * (0.0223)	0.0487 ** (0.0216)	0.0481 ** (0.0215)

Appendix A-7: (Continued)

<b>Completed graduate degree</b>	0.2862 *** (0.0217)	0.2812 *** (0.0212)	0.2044 *** (0.0212)	0.2011 *** (0.0209)
<b>Had some graduate studies</b>	0.2696 *** (0.0278)	0.2558 *** (0.0264)	0.1861 *** (0.0270)	0.1784 *** (0.0257)
<b>Completed college</b>	0.2286 *** (0.0200)	0.2205 *** (0.0193)	0.1535 *** (0.0196)	0.1487 *** (0.0189)
<b>Had some college education</b>	0.1803 *** (0.0177)	0.1694 *** (0.0165)	0.1226 *** (0.0173)	0.1167 *** (0.0161)
<b>Completed high school</b>	0.1419 *** (0.0177)	0.1402 *** (0.0174)	0.0963 *** (0.0170)	0.0953 *** (0.0169)
<b>Excellent health</b>			0.5695 *** (0.0263)	0.5734 *** (0.0259)
<b>Very good health</b>			0.5590 *** (0.0258)	0.5591 *** (0.0258)
<b>Good health</b>			0.5254 *** (0.0259)	0.5255 *** (0.0258)
<b>Fair health</b>			0.3014 *** (0.0284)	0.3021 *** (0.0283)
<b>Constant</b>	0.6921 *** (0.1272)	0.7492 *** (0.1198)	0.7088 *** (0.1227)	0.7520 *** (0.1185)
			0.5812 *** (0.1206)	0.6130 *** (0.1178)
			0.0662 (0.1179)	0.0810 (0.1165)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-8: Currently Working Full Time (35+ Hours a Week) versus  
Alcohol Abuse and/or Dependence in the Last 12 Months: the Female Sample

Female (n=9,355)								
Variables	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-1.2083 *** (0.3889)	0.0138 (0.0204)	-0.9339 ** (0.3721)	0.0014 (0.0202)	-0.7258 ** (0.3651)	0.0063 (0.0200)	-0.3881 (0.3362)	0.0039 (0.0193)
Age	-0.0048 (0.0069)	-0.0032 (0.0058)	0.0010 (0.0064)	0.0007 (0.0058)	0.0005 (0.0061)	0.0005 (0.0057)	0.0016 (0.0057)	0.0016 (0.0055)
Age squared	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
White	0.0981 *** (0.0224)	0.0460 *** (0.0128)	0.0557 *** (0.0208)	0.0174 (0.0128)	0.0105 (0.0208)	-0.0205 (0.0130)	-0.0047 (0.0192)	-0.0213 * (0.0125)
Black	0.0451 *** (0.0171)	0.0363 ** (0.0144)	0.0268 * (0.0161)	0.0293 ** (0.0145)	0.0013 (0.0155)	0.0030 (0.0145)	0.0111 (0.0143)	0.0120 (0.0140)
American Indian/Alaska Native	0.0427 (0.0509)	-0.0323 (0.0382)	0.0286 (0.0477)	-0.0291 (0.0377)	-0.0081 (0.0459)	-0.0533 (0.0374)	-0.0058 (0.0423)	-0.0300 (0.0361)
Asian/Pacific Islander	0.0772 ** (0.0339)	0.0673 ** (0.0286)	0.0540 * (0.0317)	0.0443 (0.0377)	0.0092 (0.0306)	-0.0007 (0.0283)	0.0038 (0.0282)	-0.0015 (0.0273)
Living in MSA - in central city	0.0553 *** (0.0176)	0.0389 *** (0.0143)	0.0237 (0.0160)	0.0172 (0.0142)	0.0124 (0.0153)	0.0066 (0.0141)	0.0009 (0.0142)	-0.0022 (0.0136)
Living in MSA - outside central city	0.0431 *** (0.0158)	0.0424 *** (0.0135)	0.0211 (0.0148)	0.0216 (0.0142)	0.0067 (0.0142)	0.0064 (0.0133)	-0.0096 (0.0131)	-0.0098 (0.0128)
State unemployment rates	-0.0058 (0.0070)	0.0030 (0.0055)	-0.0053 (0.0066)	0.0017 (0.0054)	-0.0035 (0.0063)	0.0021 (0.0053)	0.0018 (0.0059)	0.0048 (0.0052)
Father/mother ever depressed	-0.0021 (0.0149)	-0.0189 (0.0118)	-0.0099 (0.0138)	-0.0217 * (0.0117)	-0.0215 (0.0132)	-0.0309 *** (0.0116)	-0.0156 (0.0122)	-0.0205 * (0.0112)
Brother/sister ever depressed	0.0365 ** (0.0184)	0.0035 (0.0128)	0.0288 * (0.0171)	0.0041 (0.0127)	0.0205 (0.0166)	0.0009 (0.0126)	0.0185 (0.0153)	0.0081 (0.0121)
Father/mother had behavior problems	-0.0292 (0.0214)	-0.0545 *** (0.0168)	-0.0299 (0.0197)	-0.0475 *** (0.0166)	-0.0283 (0.0188)	-0.0416 ** (0.0165)	-0.0099 (0.0174)	-0.0170 (0.0159)
Brother/sister had behavior problems	-0.0122 (0.0202)	-0.0437 *** (0.0149)	-0.0161 (0.0189)	-0.0399 *** (0.0147)	-0.0194 (0.0180)	-0.0375 *** (0.0145)	-0.0190 (0.0166)	-0.0287 ** (0.0141)
Number of children			-0.0484 *** (0.0036)	-0.0457 *** (0.0031)	-0.0351 *** (0.0037)	-0.0324 *** (0.0032)	-0.0297 *** (0.0034)	-0.0283 *** (0.0031)
Married			-0.0307 (0.0206)	0.0060 (0.0131)	-0.0333 * (0.0199)	-0.0047 (0.0130)	-0.0465 ** (0.0184)	-0.0312 ** (0.0126)
Cohabiting			0.0126 (0.0298)	0.0085 (0.0269)	0.0214 (0.0285)	0.0189 (0.0266)	-0.0023 (0.0263)	-0.0036 (0.0257)
Widowed			-0.0646 * (0.0354)	-0.0713 ** (0.0319)	-0.0570 * (0.0338)	-0.0619 ** (0.0315)	-0.0353 (0.0312)	-0.0381 (0.0305)
Divorced			0.0554 *** (0.0173)	0.0536 *** (0.0156)	0.0518 *** (0.0165)	0.0510 *** (0.0155)	0.0492 *** (0.0153)	0.0487 *** (0.0149)
Separated			0.0349 (0.0250)	0.0450 * (0.0225)	0.0433 * (0.0238)	0.0433 * (0.0223)	0.0491 ** (0.0220)	0.0482 ** (0.0215)

Appendix A-8: (Continued)

<b>Completed graduate degree</b>	0.2641 *** (0.0243)	0.2815 *** (0.0212)	0.1921 *** (0.0228)	0.2015 *** (0.0209)
<b>Had some graduate studies</b>	0.2553 *** (0.0282)	0.2563 *** (0.0264)	0.1785 *** (0.0263)	0.1792 *** (0.0257)
<b>Completed college</b>	0.2171 *** (0.0207)	0.2208 *** (0.0193)	0.1471 *** (0.0194)	0.1491 *** (0.0189)
<b>Had some college education</b>	0.1710 *** (0.0177)	0.1697 *** (0.0165)	0.1177 *** (0.0165)	0.1172 *** (0.0161)
<b>Completed high school</b>	0.1381 *** (0.0187)	0.1402 *** (0.0174)	0.0940 *** (0.0174)	0.0954 *** (0.0169)
<b>Excellent health</b>			0.5722 *** (0.0265)	0.5730 *** (0.0259)
<b>Very good health</b>			0.5621 *** (0.0264)	0.5591 *** (0.0258)
<b>Good health</b>			0.5271 *** (0.0264)	0.5255 *** (0.0258)
<b>Fair health</b>			0.3010 *** (0.0289)	0.3021 *** (0.0283)
<b>Constant</b>	0.8970 *** (0.1492)	0.7445 *** (0.1199)	0.8656 *** (0.1392)	0.7500 *** (0.1185)
			0.7065 *** (0.1347)	0.6111 *** (0.1179)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-9: Current Employment (Full Time/Part Time) versus the  
Number of Drinks Consumed in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of drinks consumed in the last 12 months	-0.00018 * (0.00001)	-0.00003 *** (0.00000)	-0.00016 (0.00001)	-0.00003 *** (0.00000)	-0.00009 (0.00001)	-0.00002 *** (0.00000)	-0.00005 (0.00001)	-0.00002 *** (0.00000)
Age	0.0087 ** (0.0044)	0.0087 ** (0.0043)	0.0048 (0.0044)	0.0046 (0.0043)	0.0042 (0.0043)	0.0042 (0.0042)	0.0034 (0.0039)	0.0033 (0.0039)
Age squared	-0.0001 *** (0.00001)	-0.0001 *** (0.00001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0000)	-0.0001 (0.0000)
White	0.0290 *** (0.0104)	0.0205 ** (0.0086)	0.0330 *** (0.0107)	0.0254 *** (0.0087)	0.0020 (0.0122)	-0.0030 (0.0089)	0.0015 (0.0115)	-0.0007 (0.0083)
Black	-0.0482 *** (0.0116)	-0.0512 *** (0.0111)	-0.0337 *** (0.0114)	-0.0343 *** (0.0110)	-0.0518 *** (0.0113)	-0.0525 *** (0.0111)	-0.0346 *** (0.0104)	-0.0348 *** (0.0104)
American Indian/Alaska Native	0.0056 (0.0286)	-0.0021 (0.0273)	0.0110 (0.0282)	0.0048 (0.0271)	-0.0095 (0.0277)	-0.0130 (0.0269)	0.0154 (0.0256)	0.0140 (0.0250)
Asian/Pacific Islander	-0.0013 (0.0214)	0.0129 (0.0187)	-0.0029 (0.0208)	0.0073 (0.0187)	-0.0328 * (0.0195)	-0.0302 (0.0188)	-0.0224 (0.0181)	-0.0212 (0.0175)
Living in MSA - in central city	0.0039 (0.0104)	0.0049 (0.0100)	0.0157 (0.0104)	0.0176 * (0.0100)	0.0056 (0.0101)	0.0056 (0.0100)	-0.0055 (0.0094)	-0.0056 (0.0093)
Living in MSA - outside central city	0.0345 *** (0.0099)	0.0386 *** (0.0093)	0.0353 *** (0.0097)	0.0380 *** (0.0092)	0.0237 ** (0.0093)	0.0241 *** (0.0092)	0.0074 (0.0086)	0.0075 (0.0086)
State unemployment rates	-0.0088 ** (0.0037)	-0.0077 ** (0.0035)	-0.0083 ** (0.0037)	-0.0071 ** (0.0035)	-0.0069 * (0.0037)	-0.0063 * (0.0035)	-0.0050 (0.0034)	-0.0048 (0.0033)
Father/mother ever depressed	-0.0097 (0.0097)	-0.0074 (0.0092)	-0.0068 (0.0096)	-0.0048 (0.0092)	-0.0110 (0.0092)	-0.0104 (0.0091)	-0.0052 (0.0086)	-0.0049 (0.0085)
Brother/sister ever depressed	0.0042 (0.0107)	0.0028 (0.0103)	0.0059 (0.0106)	0.0052 (0.0102)	0.0020 (0.0103)	0.0014 (0.0102)	0.0144 (0.0095)	0.0142 (0.0095)
Father/mother had behavior problems	-0.0175 (0.0147)	-0.0251 * (0.0134)	-0.0179 (0.0144)	-0.0236 * (0.0133)	-0.0166 (0.0140)	-0.0192 (0.0132)	0.0142 (0.0129)	0.0142 (0.0123)
Brother/sister had behavior problems	-0.0316 *** (0.0120)	-0.0329 *** (0.0115)	-0.0345 *** (0.0118)	-0.0350 *** (0.0114)	-0.0314 *** (0.0114)	-0.0313 *** (0.0114)	-0.0302 *** (0.0106)	-0.0301 *** (0.0106)
Number of children								
Married								
Cohabiting								
Widowed								
Divorced								
Separated								

Appendix A-9: (Continued)

<b>Completed graduate degree</b>	0.1435 *** (0.0203)	0.1520 *** (0.0144)	0.0655 *** (0.0176)	0.0684 *** (0.0137)
<b>Had some graduate studies</b>	0.1447 *** (0.0236)	0.1524 *** (0.0197)	0.0795 *** (0.0212)	0.0823 *** (0.0185)
<b>Completed college</b>	0.1220 *** (0.0155)	0.1272 *** (0.0127)	0.0558 *** (0.0138)	0.0576 *** (0.0121)
<b>Had some college education</b>	0.0957 *** (0.0116)	0.0975 *** (0.0111)	0.0455 *** (0.0107)	0.0461 *** (0.0105)
<b>Completed high school</b>	0.0850 *** (0.0119)	0.0861 *** (0.0116)	0.0451 *** (0.0110)	0.0454 *** (0.0109)
<b>Excellent health</b>			0.6734 *** (0.0204)	0.6735 *** (0.0204)
<b>Very good health</b>			0.6576 *** (0.0209)	0.6562 *** (0.0203)
<b>Good health</b>			0.6219 *** (0.0215)	0.6201 *** (0.0205)
<b>Fair health</b>			0.4440 *** (0.0256)	0.4406 *** (0.0222)
<b>Constant</b>	0.8514 *** (0.0927)	0.8112 *** (0.0862)	0.7869 *** (0.0928)	0.1799 ** (0.0872)
		0.8623 *** (0.0934)	0.8227 *** (0.0857)	0.7655 *** (0.0852)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-10: Current Employment (Full Time/Part Time) versus the  
Number of Days Drank 5+ Drinks in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		2SLS		2SLS	
Number of days drank 5+ drinks in the last 12 months	-0.00133 ** (0.0007)	-0.00030 *** (0.0001)	-0.00122 (0.0007)	-0.00024 *** (0.0001)	-0.00067 (0.0008)	-0.00019 *** (0.0001)	-0.00030 (0.0008)	-0.00016 *** (0.0000)		
Age	0.0086 ** (0.0044)	0.0087 ** (0.0043)	0.0046 (0.0043)	0.0046 (0.0043)	0.0041 (0.0041)	0.0041 (0.0042)	0.0033 (0.0039)	0.0033 (0.0039)		
Age squared	-0.0001 *** (0.0001)	-0.0001 *** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0000)	-0.0001 (0.0000)		
White	0.0239 *** (0.0092)	0.0199 ** (0.0086)	0.0291 *** (0.0094)	0.0250 *** (0.0087)	0.0003 (0.0107)	-0.0032 (0.0089)	0.0001 (0.0100)	-0.0009 (0.0083)		
Black	-0.0536 *** (0.0113)	-0.0523 *** (0.0110)	-0.0387 *** (0.0116)	-0.0353 *** (0.0110)	-0.0544 *** (0.0114)	-0.0532 *** (0.0111)	-0.0358 *** (0.0106)	-0.0354 *** (0.0104)		
American Indian/Alaska Native	-0.0008 (0.0279)	-0.0031 (0.0273)	0.0055 (0.0276)	0.0041 (0.0270)	-0.0122 (0.0271)	-0.0136 (0.0269)	0.0138 (0.0251)	0.0135 (0.0250)		
Asian/Pacific Islander	0.0005 (0.0206)	0.0124 (0.0187)	-0.0013 (0.0201)	0.0072 (0.0187)	-0.0311 (0.0190)	-0.0298 (0.0188)	-0.0213 (0.0177)	-0.0209 (0.0175)		
Living in MSA - in central city	0.0032 (0.0103)	0.0047 (0.0100)	0.0152 (0.0104)	0.0174 * (0.0100)	0.0057 (0.0101)	0.0057 (0.0100)	-0.0055 (0.0094)	-0.0055 (0.0093)		
Living in MSA - outside central city	0.0345 *** (0.0098)	0.0384 *** (0.0093)	0.0354 *** (0.0096)	0.0379 *** (0.0092)	0.0241 *** (0.0093)	0.0242 *** (0.0092)	0.0076 (0.0086)	0.0076 (0.0086)		
State unemployment rates	-0.0085 ** (0.0037)	-0.0077 ** (0.0035)	-0.0081 ** (0.0037)	-0.0072 ** (0.0035)	-0.0069 * (0.0036)	-0.0064 * (0.0035)	-0.0048 (0.0034)	-0.0048 (0.0033)		
Father/mother ever depressed	-0.0095 (0.0095)	-0.0075 (0.0092)	-0.0067 (0.0095)	-0.0048 (0.0092)	-0.0108 (0.0092)	-0.0103 (0.0091)	-0.0050 (0.0085)	-0.0049 (0.0085)		
Brother/sister ever depressed	0.0033 (0.0106)	0.0027 (0.0103)	0.0051 (0.0105)	0.0051 (0.0102)	0.0017 (0.0102)	0.0014 (0.0102)	0.0142 (0.0095)	0.0142 (0.0095)		
Father/mother had behavior problems	-0.0227 (0.0138)	-0.0258 * (0.0134)	-0.0224 (0.0136)	-0.0242 * (0.0133)	-0.0192 (0.0133)	-0.0198 (0.0132)	-0.0077 (0.0123)	-0.0078 (0.0123)		
Brother/sister had behavior problems	-0.0302 ** (0.0119)	-0.0325 *** (0.0115)	-0.0331 *** (0.0117)	-0.0347 *** (0.0114)	-0.0307 *** (0.0114)	-0.0312 *** (0.0114)	-0.0299 *** (0.0106)	-0.0300 *** (0.0106)		
Number of children										
Married										
Cohabiting										
Widowed										
Divorced										
Separated										

Appendix A-10: (Continued)

<b>Completed graduate degree</b>	0.1409 *** (0.0220)	0.1508 *** (0.0144)	0.0652 *** (0.0192)	0.0676 *** (0.0137)
<b>Had some graduate studies</b>	0.1440 *** (0.0237)	0.1518 *** (0.0197)	0.0800 *** (0.0213)	0.0819 *** (0.0185)
<b>Completed college</b>	0.1191 *** (0.0174)	0.1261 *** (0.0128)	0.0550 *** (0.0155)	0.0567 *** (0.0121)
<b>Had some college education</b>	0.0946 *** (0.0120)	0.0971 *** (0.0111)	0.0452 *** (0.0110)	0.0458 *** (0.0105)
<b>Completed high school</b>	0.0848 *** (0.0119)	0.0860 *** (0.0116)	0.0451 *** (0.0110)	0.0453 *** (0.0109)
<b>Excellent health</b>			0.6727 *** (0.0205)	0.6731 *** (0.0204)
<b>Very good health</b>			0.6567 *** (0.0206)	0.6561 *** (0.0203)
<b>Good health</b>			0.6209 *** (0.0210)	0.6200 *** (0.0205)
<b>Fair health</b>			0.4419 *** (0.0240)	0.4403 *** (0.0222)
<b>Constant</b>	0.8468 *** (0.0908)	0.8126 *** (0.0861)	0.8612 *** (0.0919)	0.7668 *** (0.0852)
			0.8243 *** (0.0857)	0.1729 ** (0.0816)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-11: Current Employment (Full Time/Part Time) versus  
the Number of Days Drunk in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drunk in the last 12 months	-0.00393 *	-0.00040 ***	-0.00341 ***	-0.00034 ***	-0.00170	-0.00032 ***	-0.00060	-0.00025 ***
	(0.0020)	(0.0001)	(0.0021)	(0.0001)	(0.0021)	(0.0001)	(0.0019)	(0.0001)
Age	0.0070	0.0085 **	0.0036	0.0045	0.0037	0.0041	0.0032	0.0033
	(0.0047)	(0.0043)	(0.0046)	(0.0043)	(0.0043)	(0.0042)	(0.0040)	(0.0039)
Age squared	-0.0001 **	-0.0001 ***	-0.0001 *	-0.0001 *	-0.0001 *	-0.0001 *	-0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)
White	0.0251 **	0.0193 **	0.0282 ***	0.0244 ***	0.0099	-0.0040	-0.0009	-0.0015
	(0.0099)	(0.0086)	(0.0096)	(0.0087)	(0.0099)	(0.0089)	(0.0091)	(0.0083)
Black	-0.0499 ***	-0.0517 ***	-0.0354 ***	-0.0345 ***	-0.0523 ***	-0.0526 ***	-0.0349 ***	-0.0350 ***
	(0.0121)	(0.0111)	(0.0118)	(0.0110)	(0.0113)	(0.0111)	(0.0104)	(0.0104)
American Indian/Alaska Native	0.0130	-0.0021	0.0167	0.0050	-0.0067	-0.0127	0.0155	0.0142
	(0.0310)	(0.0273)	(0.0300)	(0.0271)	(0.0287)	(0.0269)	(0.0262)	(0.0250)
Asian/Pacific Islander	-0.0075	0.0135	-0.0100	0.0073	-0.0378 *	-0.0309	-0.0234	-0.0217
	(0.0238)	(0.0188)	(0.0233)	(0.0187)	(0.0217)	(0.0188)	(0.0200)	(0.0175)
Living in MSA - in central city	0.0076	0.0054	0.0181 *	0.0179 *	0.0063	0.0058	-0.0053	-0.0055
	(0.0110)	(0.0100)	(0.0107)	(0.0100)	(0.0102)	(0.0100)	(0.0094)	(0.0093)
Living in MSA - outside central city	0.0345 ***	0.0390 ***	0.0346 ***	0.0382 ***	0.0230 **	0.0240 ***	0.0072	0.0074
	(0.0104)	(0.0093)	(0.0101)	(0.0092)	(0.0095)	(0.0092)	(0.0087)	(0.0086)
State unemployment rates	-0.0086 **	-0.0076 **	-0.0080 **	-0.0070 **	-0.0067 *	-0.0063 *	-0.0048	-0.0047
	(0.0039)	(0.0035)	(0.0038)	(0.0035)	(0.0036)	(0.0035)	(0.0033)	(0.0033)
Father/mother ever depressed	-0.0050	-0.0068	-0.0030	-0.0043	-0.0094	-0.0100	-0.0044	-0.0046
	(0.0101)	(0.0092)	(0.0098)	(0.0092)	(0.0093)	(0.0091)	(0.0085)	(0.0085)
Brother/sister ever depressed	-0.0046	0.0018	-0.0016	0.0045	-0.0021	0.0006	0.0128	0.0136
	(0.0119)	(0.0103)	(0.0117)	(0.0102)	(0.0111)	(0.0102)	(0.0103)	(0.0095)
Father/mother had behavior problems	-0.0107	-0.0251 *	-0.0113	-0.0233 *	-0.0136	-0.0188	-0.0058	-0.0070
	(0.0168)	(0.0134)	(0.0165)	(0.0133)	(0.0155)	(0.0132)	(0.0142)	(0.0123)
Brother/sister had behavior problems	-0.0358 ***	-0.0335 ***	-0.0374 ***	-0.0353 ***	-0.0326 ***	-0.0316 ***	-0.0305 ***	-0.0303 ***
	(0.0126)	(0.0115)	(0.0123)	(0.0114)	(0.0116)	(0.0114)	(0.0107)	(0.0106)
Number of children			-0.0051 **	-0.0053 **	-0.0006	-0.0005	0.0011	0.0011
			(0.0025)	(0.0024)	(0.0024)	(0.0024)	(0.0022)	(0.0022)
Married			0.0929 ***	0.1060 ***	0.0943 ***	0.1001 ***	0.0764 ***	0.0778 ***
			(0.0137)	(0.0096)	(0.0130)	(0.0095)	(0.0117)	(0.0089)
Cohabiting			0.0543 ***	0.0531 ***	0.0601 ***	0.0598 ***	0.0512 ***	0.0511 ***
			(0.0199)	(0.0186)	(0.0187)	(0.0184)	(0.0172)	(0.0172)
Widowed			-0.0548	-0.0326	-0.0392	-0.0290	-0.0004	0.0022
			(0.0481)	(0.0426)	(0.0455)	(0.0423)	(0.0420)	(0.0394)
Divorced			0.0430 ***	0.0370 ***	0.0403 ***	0.0376 ***	0.0358 ***	0.0351 ***
			(0.0139)	(0.0124)	(0.0131)	(0.0123)	(0.0121)	(0.0115)
Separated			0.0159	0.0095	0.0164	0.0136	0.0063	0.0056
			(0.0226)	(0.0207)	(0.0213)	(0.0206)	(0.0196)	(0.0191)

Appendix A-11: (Continued)

<b>Completed graduate degree</b>	0.1519 *** (0.0150)	0.1542 *** (0.0144)	0.0700 *** (0.0138)	0.0702 *** (0.0137)
<b>Had some graduate studies</b>	0.1520 *** (0.0203)	0.1543 *** (0.0197)	0.0836 *** (0.0186)	0.0839 *** (0.0185)
<b>Completed college</b>	0.1209 *** (0.0161)	0.1274 *** (0.0127)	0.0564 *** (0.0142)	0.0577 *** (0.0121)
<b>Had some college education</b>	0.0937 *** (0.0125)	0.0973 *** (0.0111)	0.0452 *** (0.0112)	0.0459 *** (0.0105)
<b>Completed high school</b>	0.0832 *** (0.0125)	0.0859 *** (0.0116)	0.0447 *** (0.0113)	0.0453 *** (0.0109)
<b>Excellent health</b>			0.6720 *** (0.0210)	0.6729 *** (0.0204)
<b>Very good health</b>			0.6546 *** (0.0204)	0.6551 *** (0.0203)
<b>Good health</b>			0.6182 *** (0.0206)	0.6186 *** (0.0205)
<b>Fair health</b>			0.4404 *** (0.0231)	0.4392 *** (0.0222)
<b>Constant</b>	0.8850 *** (0.1032)	0.8109 *** (0.0862)	0.8865 *** (0.1018)	0.8224 *** (0.0857)
			0.7974 *** (0.0983)	0.7660 *** (0.0852)
			0.1806 * (0.0936)	0.1724 ** (0.0816)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-12: Current Employment (Full Time/Part Time) versus the Average Daily Volume of Ethanol Consumed in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)							
			OLS		2SLS		2SLS		2SLS							
Average daily volume of ethanol consumed in the last 12 months	-0.07724 *	(0.0417)	-0.00934 ***	(0.0015)	-0.06974	(0.0458)	-0.00776 ***	(0.0015)	-0.03815	(0.0469)	-0.00693 ***	(0.0015)	-0.01771	(0.0448)	-0.00450 ***	(0.0014)
Age	0.0079 *	(0.0047)	0.0086 **	(0.0043)	0.0047	(0.0046)	0.0046	(0.0043)	0.0042	(0.0042)	0.0042	(0.0042)	0.0033	(0.0040)	0.0033	(0.0039)
Age squared	-0.0001 **	(0.0001)	-0.0001 ***	(0.0001)	-0.0001 *	(0.0001)	-0.0001 *	(0.0001)	-0.0001 *	(0.0001)	-0.0001 *	(0.0001)	-0.0001	(0.0000)	-0.0001	(0.0000)
White	0.0246 **	(0.0100)	0.0194 **	(0.0086)	0.0279 ***	(0.0098)	0.0244 ***	(0.0087)	0.0000	(0.0107)	-0.0037	(0.0089)	0.0000	(0.0098)	-0.0015	(0.0083)
Black	-0.0458 ***	(0.0127)	-0.0512 ***	(0.0110)	-0.0334 ***	(0.0121)	-0.0343 ***	(0.0110)	-0.0509 ***	(0.0116)	-0.0524 ***	(0.0111)	-0.0345 ***	(0.0105)	-0.0349 ***	(0.0104)
American Indian/Alaska Native	0.0061	(0.0306)	-0.0026	(0.0273)	0.0105	(0.0298)	0.0045	(0.0270)	-0.0090	(0.0282)	-0.0132	(0.0269)	0.0150	(0.0256)	0.0136	(0.0250)
Asian/Pacific Islander	-0.0047	(0.0235)	0.0134	(0.0187)	-0.0066	(0.0228)	0.0074	(0.0187)	-0.0342 *	(0.0202)	-0.0302	(0.0188)	-0.0228	(0.0186)	-0.0210	(0.0175)
Living in MSA - in central city	0.0082	(0.0112)	0.0055	(0.0100)	0.0177	(0.0109)	0.0179 *	(0.0100)	0.0069	(0.0104)	0.0059	(0.0096)	-0.0048	(0.0093)	-0.0054	(0.0093)
Living in MSA - outside central city	0.0330 ***	(0.0108)	0.0387 ***	(0.0093)	0.0336 ***	(0.0106)	0.0380 ***	(0.0092)	0.0230 **	(0.0096)	0.0240 ***	(0.0087)	0.0073	(0.0086)	0.0075	(0.0086)
State unemployment rates	-0.0076 *	(0.0039)	-0.0075 **	(0.0035)	-0.0073 *	(0.0038)	-0.0070 **	(0.0035)	-0.0064 *	(0.0036)	-0.0062 *	(0.0033)	-0.0048	(0.0033)	-0.0046	(0.0033)
Father/mother ever depressed	0.0017	(0.0102)	-0.0071	(0.0092)	-0.0056	(0.0100)	-0.0045	(0.0092)	-0.0102	(0.0093)	-0.0102	(0.0091)	-0.0049	(0.0085)	-0.0047	(0.0085)
Brother/sister ever depressed	0.0114	(0.0114)	0.0024	(0.0103)	0.0035	(0.0112)	0.0049	(0.0102)	0.0007	(0.0104)	0.0011	(0.0102)	0.0136	(0.0096)	0.0140	(0.0095)
Father/mother had behavior problems	-0.0113	(0.0170)	-0.0249 *	(0.0134)	-0.0120	(0.0167)	-0.0232 *	(0.0133)	-0.0135	(0.0157)	-0.0188	(0.0132)	-0.0051	(0.0142)	-0.0072	(0.0123)
Brother/sister had behavior problems	-0.0339 ***	(0.0128)	-0.0333 ***	(0.0115)	-0.0360 ***	(0.0125)	-0.0352 ***	(0.0114)	-0.0322 ***	(0.0117)	-0.0315 ***	(0.0114)	-0.0306 ***	(0.0107)	-0.0302 ***	(0.0106)
Number of children					-0.0040	(0.0027)	-0.0052 **	(0.0024)	-0.0002	(0.0025)	-0.0004	(0.0024)	0.0012	(0.0022)	0.0011	(0.0022)
Married					0.0825 ***	(0.0194)	0.1047 ***	(0.0096)	0.0884 ***	(0.0188)	0.0991 ***	(0.0095)	0.0731 ***	(0.0168)	0.0773 ***	(0.0089)
Cohabiting					0.0569 ***	(0.0204)	0.0534 ***	(0.0186)	0.0612 ***	(0.0190)	0.0600 ***	(0.0184)	0.0518 ***	(0.0174)	0.0512 ***	(0.0172)
Widowed					-0.0402	(0.0469)	-0.0313	(0.0426)	-0.0326	(0.0439)	-0.0277	(0.0423)	0.0010	(0.0403)	0.0033	(0.0394)
Divorced					0.0439 ***	(0.0144)	0.0372 ***	(0.0124)	0.0409 ***	(0.0135)	0.0377 ***	(0.0123)	0.0365 ***	(0.0124)	0.0351 ***	(0.0115)
Separated					0.0214	(0.0241)	0.0102	(0.0207)	0.0194	(0.0225)	0.0141	(0.0206)	0.0082	(0.0208)	0.0059	(0.0191)

Appendix A-12: (Continued)

<b>Completed graduate degree</b>	0.1399 *** (0.0234)	0.1520 *** (0.0144)	0.0653 *** (0.0187)	0.0690 *** (0.0137)
<b>Had some graduate studies</b>	0.1411 *** (0.0263)	0.1523 *** (0.0197)	0.0792 *** (0.0223)	0.0828 *** (0.0185)
<b>Completed college</b>	0.1181 *** (0.0185)	0.1269 *** (0.0127)	0.0552 *** (0.0151)	0.0578 *** (0.0121)
<b>Had some college education</b>	0.0911 *** (0.0143)	0.0968 *** (0.0111)	0.0441 *** (0.0121)	0.0458 *** (0.0105)
<b>Completed high school</b>	0.0811 *** (0.0136)	0.0855 *** (0.0116)	0.0438 *** (0.0119)	0.0452 *** (0.0109)
<b>Excellent health</b>			0.6637 *** (0.0322)	0.6710 *** (0.0204)
<b>Very good health</b>			0.6478 *** (0.0281)	0.6535 *** (0.0203)
<b>Good health</b>			0.6118 *** (0.0274)	0.6172 *** (0.0205)
<b>Fair health</b>			0.4353 *** (0.0237)	0.4376 *** (0.0222)
<b>Constant</b>	0.8597 *** (0.1001)	0.8094 *** (0.0861)	0.8663 *** (0.0992)	0.7647 *** (0.0852)
			0.8210 *** (0.0857)	0.1723 ** (0.0816)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-13: Currently Working Full Time (35+ Hours a Week) versus  
the Number of Drinks Consumed in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)					
			OLS		2SLS		OLS		2SLS					
Number of drinks consumed in the last 12 months	-0.00019 *	(0.00001)	-0.00004 ***	(0.00000)	-0.00016	(0.00001)	-0.00004 ***	(0.00000)	-0.00007	(0.00001)	-0.00002	(0.00001)	-0.00003 ***	(0.00000)
Age	0.0164 ***	(0.0050)	0.0164 ***	(0.0048)	0.0102 **	(0.0049)	0.0101 **	(0.0048)	0.0094 **	(0.0048)	0.0085 *	(0.0045)	0.0085 *	(0.0045)
Age squared	-0.0002 ***	(0.00001)	-0.0002 ***	(0.00001)	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0001 **	(0.0001)	-0.0001 **	(0.0001)
White	0.0428 ***	(0.0117)	0.0344 ***	(0.0097)	0.0488 ***	(0.0120)	0.0415 ***	(0.0098)	0.0083	(0.0137)	0.0067	(0.0132)	0.0071	(0.0095)
Black	-0.0409 ***	(0.0130)	-0.0439 ***	(0.0125)	-0.0212 *	(0.0127)	-0.0218 *	(0.0125)	-0.0453 ***	(0.0126)	-0.0283 **	(0.0119)	-0.0283 **	(0.0119)
American Indian/Alaska Native	-0.0073	(0.0322)	-0.0150	(0.0309)	0.0005	(0.0317)	-0.0054	(0.0306)	-0.0265	(0.0311)	-0.0286	(0.0293)	-0.0021	(0.0287)
Asian/Pacific Islander	-0.0094	(0.0241)	0.0047	(0.0212)	-0.0110	(0.0233)	-0.0012	(0.0211)	-0.0492 **	(0.0218)	-0.0476 **	(0.0207)	-0.0384 *	(0.0201)
Living in MSA - in central city	-0.0010	(0.0117)	0.0000	(0.0114)	0.0167	(0.0117)	0.0185	(0.0113)	0.0041	(0.0113)	0.0041	(0.0107)	-0.0073	(0.0107)
Living in MSA - outside central city	0.0437 ***	(0.0112)	0.0478 ***	(0.0105)	0.0461 ***	(0.0109)	0.0487 ***	(0.0104)	0.0314 ***	(0.0105)	0.0317 ***	(0.0099)	0.0149	(0.0099)
State unemployment rates	-0.0100 **	(0.0042)	-0.0090 **	(0.0040)	-0.0093 **	(0.0042)	-0.0082 **	(0.0040)	-0.0075 *	(0.0041)	-0.0071 *	(0.0039)	-0.0056	(0.0037)
Father/mother ever depressed	-0.0074	(0.0109)	-0.0051	(0.0105)	-0.0033	(0.0107)	-0.0013	(0.0103)	-0.0083	(0.0103)	-0.0080	(0.0098)	-0.0022	(0.0097)
Brother/sister ever depressed	-0.0077	(0.0121)	-0.0090	(0.0117)	-0.0051	(0.0118)	-0.0057	(0.0116)	-0.0100	(0.0115)	-0.0104	(0.0109)	0.0024	(0.0109)
Father/mother had behavior problems	-0.0168	(0.0165)	-0.0244	(0.0152)	-0.0178	(0.0161)	-0.0232	(0.0150)	-0.0161	(0.0156)	-0.0176	(0.0148)	-0.0057	(0.0141)
Brother/sister had behavior problems	-0.0314 **	(0.0134)	-0.0327 **	(0.0132)	-0.0354 ***	(0.0132)	-0.0359 ***	(0.0129)	-0.0315 **	(0.0128)	-0.0315 **	(0.0121)	-0.0300 **	(0.0121)
Number of children					-0.0032	(0.0031)	-0.0048 *	(0.0027)	0.0015	(0.0029)	0.0011	(0.0027)	0.0028	(0.0026)
Married					0.1316 ***	(0.0152)	0.1432 ***	(0.0108)	0.1331 ***	(0.0150)	0.1364 ***	(0.0107)	0.1142 ***	(0.0102)
Cohabiting					0.0688 ***	(0.0234)	0.0583 ***	(0.0210)	0.0689 ***	(0.0228)	0.0660 ***	(0.0217)	0.0574 ***	(0.0197)
Widowed					-0.0151	(0.0491)	-0.0144	(0.0481)	-0.0109	(0.0478)	-0.0105	(0.0451)	0.0194	(0.0451)
Divorced					0.0847 ***	(0.0181)	0.0725 ***	(0.0140)	0.0759 ***	(0.0179)	0.0724 ***	(0.0139)	0.0692 ***	(0.0131)
Separated					0.0542 **	(0.0258)	0.0435 *	(0.0234)	0.0511 **	(0.0251)	0.0481 **	(0.0240)	0.0399 *	(0.0219)

Appendix A-13: (Continued)

<b>Completed graduate degree</b>	0.1848 *** (0.0227)	0.1898 *** (0.0163)	0.1051 *** (0.0202)	0.1045 *** (0.0158)
<b>Had some graduate studies</b>	0.1862 *** (0.0265)	0.1907 *** (0.0222)	0.1198 *** (0.0243)	0.1193 *** (0.0212)
<b>Completed college</b>	0.1596 *** (0.0174)	0.1627 *** (0.0144)	0.0922 *** (0.0158)	0.0919 *** (0.0138)
<b>Had some college education</b>	0.1250 *** (0.0130)	0.1261 *** (0.0125)	0.0743 *** (0.0122)	0.0742 *** (0.0120)
<b>Completed high school</b>	0.1156 *** (0.0133)	0.1163 *** (0.0131)	0.0757 *** (0.0126)	0.0756 *** (0.0125)
<b>Excellent health</b>			0.6568 *** (0.0234)	0.6568 *** (0.0234)
<b>Very good health</b>			0.6410 *** (0.0240)	0.6413 *** (0.0232)
<b>Good health</b>			0.5922 *** (0.0246)	0.5926 *** (0.0235)
<b>Fair health</b>			0.4158 *** (0.0293)	0.4165 *** (0.0255)
<b>Constant</b>	0.6702 *** (0.1043)	0.6301 *** (0.0976)	0.6977 *** (0.1047)	0.5865 *** (0.0960)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-14: Currently Working Full Time (35+ Hours a Week) versus the  
 Number of Days Drank 5+ Drinks in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		2SLS		2SLS	
Number of days drank 5+ drinks in the last 12 months	-0.00149 ** (0.0007)	-0.00038 *** (0.0001)	-0.00138 (0.0008)	-0.00030 *** (0.0001)	-0.00066 (0.0009)	-0.00024 *** (0.0001)	-0.00025 (0.0009)	-0.00020 *** (0.0001)		
Age	0.0163 *** (0.0049)	0.0163 *** (0.0048)	0.0100 ** (0.0049)	0.0100 ** (0.0048)	0.0093 * (0.0048)	0.0093 * (0.0048)	0.0085 * (0.0045)	0.0085 * (0.0045)		
Age squared	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)		
White	0.0377 *** (0.0104)	0.0333 *** (0.0097)	0.0452 *** (0.0106)	0.0407 *** (0.0098)	0.0078 (0.0121)	0.0047 (0.0101)	0.0068 (0.0115)	0.0064 (0.0096)		
Black	-0.0468 *** (0.0128)	-0.0454 *** (0.0125)	-0.0268 ** (0.0131)	-0.0230 * (0.0125)	-0.0477 *** (0.0128)	-0.0466 *** (0.0125)	-0.0292 ** (0.0122)	-0.0291 ** (0.0119)		
American Indian/Alaska Native	-0.0140 (0.0316)	-0.0165 (0.0309)	-0.0050 (0.0312)	-0.0066 (0.0306)	-0.0284 (0.0305)	-0.0296 (0.0303)	-0.0027 (0.0288)	-0.0028 (0.0287)		
Asian/Pacific Islander	-0.0083 (0.0233)	0.0047 (0.0212)	-0.0102 (0.0227)	-0.0009 (0.0211)	-0.0481 ** (0.0214)	-0.0470 ** (0.0212)	-0.0382 * (0.0203)	-0.0380 * (0.0201)		
Living in MSA - in central city	-0.0018 (0.0117)	-0.0002 (0.0114)	0.0159 (0.0117)	0.0183 (0.0113)	0.0042 (0.0114)	0.0042 (0.0113)	-0.0072 (0.0107)	-0.0072 (0.0107)		
Living in MSA - outside central city	0.0435 *** (0.0111)	0.0477 *** (0.0105)	0.0458 *** (0.0108)	0.0486 *** (0.0104)	0.0317 *** (0.0104)	0.0318 *** (0.0104)	0.0150 (0.0099)	0.0150 (0.0099)		
State unemployment rates	-0.0098 ** (0.0041)	-0.0089 ** (0.0040)	-0.0092 ** (0.0041)	-0.0082 ** (0.0040)	-0.0076 * (0.0041)	-0.0071 * (0.0039)	-0.0056 (0.0039)	-0.0056 (0.0037)		
Father/mother ever depressed	-0.0072 (0.0108)	-0.0051 (0.0105)	-0.0033 (0.0107)	-0.0013 (0.0103)	-0.0083 (0.0103)	-0.0079 (0.0103)	-0.0022 (0.0098)	-0.0021 (0.0097)		
Brother/sister ever depressed	-0.0085 (0.0120)	-0.0092 (0.0117)	-0.0059 (0.0118)	-0.0059 (0.0116)	-0.0102 (0.0115)	-0.0105 (0.0115)	0.0023 (0.0109)	0.0022 (0.0109)		
Father/mother had behavior problems	-0.0222 (0.0157)	-0.0256 * (0.0152)	-0.0222 (0.0154)	-0.0242 (0.0150)	-0.0181 (0.0150)	-0.0186 (0.0149)	-0.0065 (0.0141)	-0.0066 (0.0141)		
Brother/sister had behavior problems	-0.0297 ** (0.0134)	-0.0322 ** (0.0131)	-0.0338 ** (0.0133)	-0.0356 *** (0.0129)	-0.0309 ** (0.0129)	-0.0313 ** (0.0128)	-0.0298 ** (0.0121)	-0.0298 ** (0.0121)		
Number of children										
Married										
Married										
Cohabiting										
Cohabiting										
Widowed										
Widowed										
Divorced										
Divorced										
Separated										
Separated										

Appendix A-14: (Continued)

<b>Completed graduate degree</b>	0.1802 *** (0.0248)	0.1890 *** (0.0163)	0.1032 *** (0.0221)	0.1040 *** (0.0158)
<b>Had some graduate studies</b>	0.1837 *** (0.0266)	0.1905 *** (0.0222)	0.1187 *** (0.0244)	0.1193 *** (0.0212)
<b>Completed college</b>	0.1555 *** (0.0196)	0.1617 *** (0.0144)	0.0906 *** (0.0177)	0.0911 *** (0.0139)
<b>Had some college education</b>	0.1235 *** (0.0135)	0.1257 *** (0.0125)	0.0737 *** (0.0126)	0.0739 *** (0.0120)
<b>Completed high school</b>	0.1151 *** (0.0134)	0.1162 *** (0.0131)	0.0755 *** (0.0126)	0.0755 *** (0.0125)
<b>Excellent health</b>			0.6562 *** (0.0235)	0.6563 *** (0.0234)
<b>Very good health</b>			0.6410 *** (0.0236)	0.6408 *** (0.0233)
<b>Good health</b>			0.5923 *** (0.0241)	0.5921 *** (0.0235)
<b>Fair health</b>			0.4159 *** (0.0275)	0.4154 *** (0.0255)
<b>Constant</b>	0.6677 *** (0.1027)	0.6304 *** (0.0976)	0.7008 *** (0.1037)	0.6600 *** (0.0968)
		0.6045 *** (0.1038)	0.5864 *** (0.0961)	0.0135 (0.1004)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-15: Currently Working Full Time (35+ Hours a Week) versus  
the Number of Days Drunk in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		OLS		2SLS	
Number of days drunk in the last 12 months	-0.00457 ** (0.00223)	-0.00053 *** (0.0001)	-0.00409 * (0.0024)	-0.00045 *** (0.0001)	-0.00196 (0.0023)	-0.00043 *** (0.0001)	-0.00076 (0.0022)	-0.00036 *** (0.0001)		
Age	0.0144 *** (0.0054)	0.0161 *** (0.0048)	0.0089 * (0.0052)	0.0099 ** (0.0048)	0.0088 * (0.0049)	0.0092 * (0.0048)	0.0083 * (0.0046)	0.0084 * (0.0045)		
Age squared	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0002 *** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)		
White	0.0393 *** (0.0113)	0.0327 *** (0.0097)	0.0444 *** (0.0109)	0.0400 *** (0.0098)	0.0068 (0.0111)	0.0038 (0.0101)	0.0065 (0.0105)	0.0057 (0.0095)		
Black	-0.0425 *** (0.0137)	-0.0446 *** (0.0125)	-0.0232 * (0.0134)	-0.0221 * (0.0125)	-0.0456 *** (0.0127)	-0.0459 *** (0.0125)	-0.0285 ** (0.0119)	-0.0285 ** (0.0119)		
American Indian/Alaska Native	0.0023 (0.0352)	-0.0151 (0.0309)	0.0085 (0.0341)	-0.0053 (0.0306)	-0.0217 (0.0324)	-0.0284 (0.0303)	-0.0002 (0.0301)	-0.0018 (0.0287)		
Asian/Pacific Islander	-0.0183 (0.0270)	0.0059 (0.0213)	-0.0214 (0.0264)	-0.0009 (0.0211)	-0.0561 ** (0.0244)	-0.0485 ** (0.0212)	-0.0413 * (0.0230)	-0.0392 * (0.0201)		
Living in MSA - in central city	0.0032 (0.0125)	0.0007 (0.0114)	0.0192 (0.0122)	0.0190 * (0.0113)	0.0049 (0.0115)	0.0043 (0.0113)	-0.0069 (0.0108)	-0.0071 (0.0107)		
Living in MSA - outside central city	0.0433 *** (0.0118)	0.0484 *** (0.0105)	0.0447 *** (0.0115)	0.0489 *** (0.0104)	0.0304 *** (0.0107)	0.0316 *** (0.0104)	0.0145 (0.0100)	0.0148 (0.0099)		
State unemployment rates	-0.0099 ** (0.0044)	-0.0088 ** (0.0040)	-0.0092 ** (0.0043)	-0.0080 ** (0.0040)	-0.0076 * (0.0041)	-0.0070 * (0.0039)	-0.0056 (0.0038)	-0.0055 (0.0037)		
Father/mother ever depressed	-0.0022 (0.0115)	-0.0042 (0.0105)	0.0009 (0.0112)	-0.0006 (0.0103)	-0.0068 (0.0105)	-0.0075 (0.0103)	-0.0016 (0.0098)	-0.0017 (0.0097)		
Brother/sister ever depressed	-0.0178 (0.0135)	-0.0104 (0.0117)	-0.0139 (0.0133)	-0.0068 (0.0116)	-0.0145 (0.0125)	-0.0115 (0.0115)	0.0006 (0.0118)	0.0014 (0.0109)		
Father/mother had behavior problems	-0.0080 (0.0191)	-0.0246 (0.0152)	-0.0088 (0.0187)	-0.0230 (0.0150)	-0.0115 (0.0175)	-0.0173 (0.0149)	-0.0040 (0.0163)	-0.0054 (0.0141)		
Brother/sister had behavior problems	-0.0360 ** (0.0143)	-0.0334 ** (0.0131)	-0.0388 *** (0.0140)	-0.0364 *** (0.0129)	-0.0329 ** (0.0131)	-0.0318 ** (0.0128)	-0.0305 ** (0.0123)	-0.0302 ** (0.0121)		
Number of children			-0.0050 * (0.0029)	-0.0052 * (0.0027)	0.0008 (0.0027)	0.0008 (0.0027)	0.0025 (0.0026)	0.0025 (0.0026)		
Married			0.1290 *** (0.0156)	0.1446 *** (0.0108)	0.1308 *** (0.0146)	0.1373 *** (0.0107)	0.1130 *** (0.0134)	0.1146 *** (0.0102)		
Cohabiting			0.0570 ** (0.0226)	0.0555 *** (0.0210)	0.0640 *** (0.0211)	0.0637 *** (0.0208)	0.0555 *** (0.0197)	0.0554 *** (0.0197)		
Widowed			-0.0437 (0.0546)	-0.0175 (0.0482)	-0.0247 (0.0513)	-0.0133 (0.0477)	0.0139 (0.0482)	0.0170 (0.0452)		
Divorced			0.0770 *** (0.0158)	0.0699 *** (0.0140)	0.0734 *** (0.0148)	0.0704 *** (0.0139)	0.0686 *** (0.0139)	0.0678 *** (0.0131)		
Separated			0.0491 * (0.0257)	0.0415 * (0.0234)	0.0496 ** (0.0240)	0.0465 ** (0.0232)	0.0392 * (0.0225)	0.0384 * (0.0219)		

Appendix A-15: (Continued)

<b>Completed graduate degree</b>	0.1906 *** (0.0169)	0.1932 *** (0.0162)	0.1071 *** (0.0158)	0.1073 *** (0.0157)
<b>Had some graduate studies</b>	0.1911 *** (0.0229)	0.1936 *** (0.0222)	0.1215 *** (0.0213)	0.1218 *** (0.0212)
<b>Completed college</b>	0.1560 *** (0.0182)	0.1632 *** (0.0144)	0.0907 *** (0.0163)	0.0923 *** (0.0138)
<b>Had some college education</b>	0.1219 *** (0.0141)	0.1259 *** (0.0125)	0.0732 *** (0.0129)	0.0741 *** (0.0120)
<b>Completed high school</b>	0.1131 *** (0.0140)	0.1160 *** (0.0131)	0.0748 *** (0.0130)	0.0754 *** (0.0125)
<b>Excellent health</b>			0.6549 *** (0.0241)	0.6560 *** (0.0234)
<b>Very good health</b>			0.6389 *** (0.0235)	0.6394 *** (0.0233)
<b>Good health</b>			0.5898 *** (0.0237)	0.5903 *** (0.0235)
<b>Fair health</b>			0.4156 *** (0.0265)	0.4142 *** (0.0255)
<b>Constant</b>	0.7140 *** (0.1172)	0.6291 *** (0.0977)	0.7342 *** (0.1157)	0.5859 *** (0.0961)
		0.6583 *** (0.0969)		0.0216 (0.1074)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-16: Currently Working Full Time (35+ Hours a Week) versus the

Average Daily Volume of Ethanol Consumed in the Last 12 Months: the Male Sample

Variables	Male (n=8,673)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)					
			OLS		2SLS		OLS		2SLS					
Average daily volume of ethanol consumed in the last 12 months	-0.08596 *	(0.0469)	-0.11195 ***	(0.0017)	-0.07788	(0.0515)	-0.00997 ***	(0.0017)	-0.03663	(0.0524)	-0.01323	(0.0512)	-0.00651 ***	(0.0016)
Age	0.0155 ***	(0.0053)	0.0162 ***	(0.0048)	0.0101 *	(0.0052)	0.0100 **	(0.0048)	0.0094 *	(0.0048)	0.0093 *	(0.0048)	0.0085 *	(0.0045)
Age squared	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0002 ***	(0.0001)	-0.0001 **	(0.0001)
White	0.0384 ***	(0.0113)	0.0327 ***	(0.0097)	0.0438 ***	(0.0110)	0.0400 ***	(0.0098)	0.0074	(0.0120)	0.0041	(0.0112)	0.0065	(0.0095)
Black	-0.0380 ***	(0.0143)	-0.0439 ***	(0.0125)	-0.0208 *	(0.0136)	-0.0218 *	(0.0125)	-0.0443 ***	(0.0130)	-0.0456 ***	(0.0125)	-0.0281 **	(0.0119)
American Indian/Alaska Native	-0.0064	(0.0345)	-0.0158	(0.0309)	0.0006	(0.0335)	-0.0061	(0.0305)	-0.0254	(0.0315)	-0.0291	(0.0292)	-0.0018	(0.0287)
Asian/Pacific Islander	-0.0140	(0.0265)	0.0058	(0.0212)	-0.0161	(0.0257)	-0.0007	(0.0211)	-0.0510 **	(0.0225)	-0.0475 **	(0.0212)	-0.0393 *	(0.0201)
Living in MSA - in central city	0.0037	(0.0126)	0.0008	(0.0114)	0.188	(0.0123)	0.0190 *	(0.0113)	0.0053	(0.0116)	0.0044	(0.0110)	-0.0067	(0.0107)
Living in MSA - outside central city	0.0418 ***	(0.0122)	0.0481 ***	(0.0105)	0.0438 ***	(0.0119)	0.0487 ***	(0.0104)	0.0307 ***	(0.0104)	0.0316 ***	(0.0099)	0.0148	(0.0099)
State unemployment rates	-0.0088 **	(0.0044)	-0.0087 **	(0.0040)	-0.0083 *	(0.0043)	-0.0079 **	(0.0040)	-0.0071 *	(0.0040)	-0.0069 *	(0.0038)	-0.0055	(0.0037)
Father/mother ever depressed	-0.0055	(0.0115)	-0.0046	(0.0105)	-0.0021	(0.0113)	-0.0009	(0.0103)	-0.0077	(0.0104)	-0.0077	(0.0103)	-0.0020	(0.0097)
Brother/sister ever depressed	-0.0129	(0.0129)	-0.0095	(0.0117)	-0.0077	(0.0126)	-0.0061	(0.0116)	-0.0111	(0.0116)	-0.0108	(0.0115)	0.0018	(0.0109)
Father/mother had behavior problems	-0.0095	(0.0191)	-0.0244	(0.0152)	-0.0106	(0.0188)	-0.0230	(0.0150)	-0.0126	(0.0175)	-0.0173	(0.0163)	-0.0047	(0.0141)
Brother/sister had behavior problems	-0.0338 **	(0.0144)	-0.0332 **	(0.0131)	-0.0370 ***	(0.0140)	-0.0362 ***	(0.0129)	-0.0323 **	(0.0130)	-0.0317 **	(0.0128)	-0.0303 **	(0.0121)
Number of children					-0.0038	(0.0031)	-0.0051 *	(0.0027)	0.0011	(0.0028)	0.0009	(0.0026)	0.0026	(0.0026)
Married			0.1186 ***	(0.0218)	0.1186 ***	(0.0218)	0.1429 ***	(0.0108)	0.1265 ***	(0.0210)	0.1360 ***	(0.0107)	0.1118 ***	(0.0102)
Cohabiting			0.0598 ***	(0.0229)	0.0598 ***	(0.0229)	0.0559 ***	(0.0210)	0.0651 ***	(0.0212)	0.0640 ***	(0.0198)	0.0559 ***	(0.0197)
Widowed			-0.0254	(0.0527)	-0.0254	(0.0527)	-0.0157	(0.0481)	-0.0158	(0.0490)	-0.0116	(0.0476)	0.0173	(0.0451)
Divorced			0.0774 ***	(0.0162)	0.0774 ***	(0.0162)	0.0701 ***	(0.0140)	0.0733 ***	(0.0151)	0.0704 ***	(0.0142)	0.0685 ***	(0.0131)
Separated			0.0546 **	(0.0270)	0.0546 **	(0.0270)	0.0423 *	(0.0234)	0.0518 **	(0.0251)	0.0471 **	(0.0238)	0.0388 *	(0.0219)

Appendix A-16: (Continued)

<b>Completed graduate degree</b>	0.1796 *** (0.0262)	0.1904 *** (0.0163)	0.1037 *** (0.0214)	0.1056 *** (0.0158)
<b>Had some graduate studies</b>	0.1812 *** (0.0294)	0.1911 *** (0.0222)	0.1184 *** (0.0255)	0.1203 *** (0.0212)
<b>Completed college</b>	0.1549 *** (0.0207)	0.1627 *** (0.0144)	0.0910 *** (0.0172)	0.0923 *** (0.0138)
<b>Had some college education</b>	0.1203 *** (0.0159)	0.1253 *** (0.0125)	0.0730 *** (0.0138)	0.0739 *** (0.0120)
<b>Completed high school</b>	0.1117 *** (0.0152)	0.1156 *** (0.0131)	0.0746 *** (0.0136)	0.0753 *** (0.0125)
<b>Excellent health</b>			0.6496 *** (0.0367)	0.6533 *** (0.0234)
<b>Very good health</b>			0.6342 *** (0.0321)	0.6371 *** (0.0233)
<b>Good health</b>			0.5854 *** (0.0313)	0.5882 *** (0.0235)
<b>Fair health</b>			0.4107 *** (0.0271)	0.4119 *** (0.0255)
<b>Constant</b>	0.6816 *** (0.1127)	0.6267 *** (0.0976)	0.7058 *** (0.1115)	0.5838 *** (0.0960)
		0.6562 *** (0.0968)	0.6073 *** (0.1070)	0.0204 (0.1143)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-17: Current Employment (Full Time/Part Time) versus the  
Number of Drinks Consumed in the Last 12 Months: the Female Sample

Female (n=9,355)								
Variables	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of drinks consumed in the last 12 months	-0.00060 *** (0.00002)	-0.00002 (0.00000)	-0.00036 * (0.00002)	-0.00001 (0.00000)	-0.00023 (0.00002)	-0.00001 (0.00000)	0.00000 (0.00002)	-0.00002 (0.00000)
Age	0.0087 * (0.0050)	0.0071 (0.0044)	0.0083 * (0.0047)	0.0069 (0.0044)	0.0074 (0.0045)	0.0065 (0.0044)	0.0076 * (0.0041)	0.0077 * (0.0041)
Age squared	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)
White	0.0923 *** (0.0168)	0.0568 *** (0.0098)	0.0626 *** (0.0154)	0.0418 *** (0.0098)	0.0270 * (0.0158)	0.0130 (0.0099)	0.0120 (0.0142)	0.0131 (0.0093)
Black	0.0073 (0.0138)	-0.0107 (0.0109)	0.0132 (0.0125)	0.0043 (0.0110)	-0.0107 (0.0124)	-0.0168 (0.0111)	-0.0080 (0.0114)	-0.0075 (0.0103)
American Indian/Alaska Native	0.0074 (0.0337)	-0.0200 (0.0291)	-0.0032 (0.0314)	-0.0197 (0.0288)	-0.0283 (0.0306)	-0.0392 (0.0286)	-0.0153 (0.0281)	-0.0144 (0.0266)
Asian/Pacific Islander	0.0764 *** (0.0241)	0.0775 *** (0.0109)	0.0567 ** (0.0226)	0.0572 *** (0.0217)	0.0258 (0.0220)	0.0249 (0.0216)	0.0240 (0.0201)	0.0241 (0.0201)
Living in MSA - in central city	0.0299 ** (0.0142)	0.0093 (0.0109)	0.0182 (0.0126)	0.0080 (0.0109)	0.0078 (0.0124)	0.0011 (0.0108)	-0.0086 (0.0113)	-0.0081 (0.0100)
Living in MSA - outside central city	0.0521 *** (0.0122)	0.0400 *** (0.0103)	0.0351 *** (0.0112)	0.0287 *** (0.0102)	0.0224 ** (0.0110)	0.0179 * (0.0102)	0.0007 (0.0100)	0.0010 (0.0095)
State unemployment rates	-0.0069 (0.0046)	-0.0056 (0.0042)	-0.0067 (0.0043)	-0.0058 (0.0041)	-0.0060 (0.0042)	-0.0054 (0.0041)	-0.0025 (0.0038)	-0.0025 (0.0038)
Father/mother ever depressed	-0.0133 (0.0101)	-0.0173 * (0.0090)	-0.0152 (0.0094)	-0.0172 * (0.0089)	-0.0223 ** (0.0091)	-0.0236 *** (0.0089)	-0.0130 (0.0084)	-0.0128 (0.0083)
Brother/sister ever depressed	-0.0008 (0.0108)	-0.0022 (0.0098)	-0.0001 (0.0101)	-0.0009 (0.0097)	-0.0021 (0.0098)	-0.0026 (0.0096)	0.0046 (0.0089)	0.0046 (0.0089)
Father/mother had behavior problems	-0.0353 ** (0.0153)	-0.0512 *** (0.0128)	-0.0334 ** (0.0142)	-0.0426 *** (0.0127)	-0.0329 ** (0.0137)	-0.0385 *** (0.0126)	-0.0128 (0.0126)	-0.0123 (0.0117)
Brother/sister had behavior problems	-0.0233 * (0.0132)	-0.0349 *** (0.0113)	-0.0246 ** (0.0123)	-0.0317 *** (0.0112)	-0.0260 ** (0.0119)	-0.0304 *** (0.0111)	-0.0212 * (0.0110)	-0.0209 ** (0.0104)
Number of children			-0.0252 *** (0.0027)	-0.0234 *** (0.0024)	-0.0152 *** (0.0028)	-0.0138 *** (0.0025)	-0.0094 *** (0.0025)	-0.0095 *** (0.0023)
Married			0.0705 *** (0.0115)	0.0793 *** (0.0100)	0.0656 *** (0.0111)	0.0710 *** (0.0099)	0.0438 *** (0.0103)	0.0433 *** (0.0093)
Cohabiting			0.0262 (0.0229)	0.0114 (0.0205)	0.0279 (0.0221)	0.0189 (0.0203)	-0.0053 (0.0202)	-0.0046 (0.0189)
Widowed			-0.0577 ** (0.0254)	-0.0550 ** (0.0244)	-0.0501 ** (0.0246)	-0.0482 ** (0.0241)	-0.0234 (0.0225)	-0.0235 (0.0225)
Divorced			0.0123 (0.0125)	0.0152 (0.0119)	0.0105 (0.0121)	0.0124 (0.0118)	0.0103 (0.0111)	0.0101 (0.0110)
Separated			0.0154 (0.0188)	0.0047 (0.0172)	0.0191 (0.0182)	0.0127 (0.0170)	0.0178 (0.0167)	0.0183 (0.0158)

Appendix A-17: (Continued)

<b>Completed graduate degree</b>	0.1868 *** (0.0173)	0.1929 *** (0.0162)	0.1103 *** (0.0165)	0.1097 *** (0.0154)
<b>Had some graduate studies</b>	0.1897 *** (0.0206)	0.1914 *** (0.0202)	0.1109 *** (0.0191)	0.1107 *** (0.0190)
<b>Completed college</b>	0.1709 *** (0.0158)	0.1765 *** (0.0147)	0.1024 *** (0.0150)	0.1018 *** (0.0140)
<b>Had some college education</b>	0.1324 *** (0.0131)	0.1351 *** (0.0126)	0.0802 *** (0.0122)	0.0800 *** (0.0119)
<b>Completed high school</b>	0.1115 *** (0.0138)	0.1142 *** (0.0133)	0.0670 *** (0.0128)	0.0667 *** (0.0125)
<b>Excellent health</b>			0.6235 *** (0.0199)	0.6240 *** (0.0191)
<b>Very good health</b>			0.6175 *** (0.0197)	0.6181 *** (0.0190)
<b>Good health</b>			0.5831 *** (0.0191)	0.5832 *** (0.0191)
<b>Fair health</b>			0.3529 *** (0.0212)	0.3533 *** (0.0209)
<b>Constant</b>	0.7699 *** (0.1010)	0.7739 *** (0.0912)	0.7682 *** (0.0942)	0.6661 *** (0.0901)
			0.7722 *** (0.0905)	0.6667 *** (0.0916)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-18: Current Employment (Full Time/Part Time) versus the  
Number of Days Drank 5+ Drinks in the Last 12 Months: the Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drank 5+ drinks in the last 12 months	-0.00556 *** (0.0020)	-0.00030 ** (0.0001)	-0.00353 * (0.0019)	-0.00025 ** (0.0001)	-0.00230 (0.0019)	-0.00017 (0.0001)	0.00002 (0.0018)	-0.00017 (0.0001)
Age	0.0070 (0.0049)	0.0071 (0.0044)	0.0070 (0.0046)	0.0069 (0.0044)	0.0065 (0.0044)	0.0065 (0.0044)	0.0076 * (0.0041)	0.0076 * (0.0041)
Age squared	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)
White	0.0711 *** (0.0120)	0.0567 *** (0.0097)	0.0513 *** (0.0115)	0.0418 *** (0.0098)	0.0208 * (0.0123)	0.0131 (0.0099)	0.0120 (0.0112)	0.0127 (0.0092)
Black	-0.0031 (0.0123)	-0.0108 (0.0109)	0.0072 (0.0116)	0.0043 (0.0110)	-0.0141 (0.0115)	-0.0168 (0.0111)	-0.0080 (0.0105)	-0.0078 (0.0103)
American Indian/Alaska Native	0.0129 (0.0340)	-0.0189 (0.0291)	0.0010 (0.0321)	-0.0188 (0.0288)	-0.0248 (0.0316)	-0.0385 (0.0286)	-0.0153 (0.0290)	-0.0141 (0.0266)
Asian/Pacific Islander	0.0733 *** (0.0240)	0.0773 *** (0.0218)	0.0562 ** (0.0225)	0.0571 *** (0.0217)	0.0268 (0.0220)	0.0250 (0.0216)	0.0240 (0.0202)	0.0242 (0.0201)
Living in MSA - in central city	0.0173 (0.0123)	0.0093 (0.0109)	0.0116 (0.0115)	0.0079 (0.0108)	0.0043 (0.0113)	0.0011 (0.0108)	-0.0086 (0.0104)	-0.0083 (0.0100)
Living in MSA - outside central city	0.0403 *** (0.0112)	0.0397 *** (0.0102)	0.0289 *** (0.0106)	0.0285 *** (0.0102)	0.0191 * (0.0104)	0.0179 * (0.0102)	0.0007 (0.0095)	0.0008 (0.0095)
State unemployment rates	-0.0061 (0.0046)	-0.0056 (0.0042)	-0.0062 (0.0043)	-0.0058 (0.0041)	-0.0056 (0.0042)	-0.0054 (0.0041)	-0.0025 (0.0038)	-0.0025 (0.0038)
Father/mother ever depressed	-0.0157 (0.0099)	-0.0173 * (0.0090)	-0.0165 * (0.0093)	-0.0172 * (0.0089)	-0.0228 ** (0.0090)	-0.0236 *** (0.0089)	-0.0130 (0.0083)	-0.0129 (0.0083)
Brother/sister ever depressed	-0.0008 (0.0107)	-0.0022 (0.0098)	-0.0001 (0.0101)	-0.0009 (0.0097)	-0.0019 (0.0098)	-0.0026 (0.0096)	0.0046 (0.0089)	0.0046 (0.0089)
Father/mother had behavior problems	-0.0365 ** (0.0150)	-0.0508 *** (0.0128)	-0.0342 ** (0.0140)	-0.0423 *** (0.0127)	-0.0333 ** (0.0136)	-0.0383 *** (0.0126)	-0.0128 (0.0124)	-0.0124 (0.0117)
Brother/sister had behavior problems	-0.0204 (0.0135)	-0.0344 *** (0.0113)	-0.0226 * (0.0127)	-0.0313 *** (0.0112)	-0.0247 ** (0.0123)	-0.0301 *** (0.0111)	-0.0212 * (0.0113)	-0.0208 ** (0.0104)
Number of children			-0.0234 *** (0.0025)	-0.0233 *** (0.0024)	-0.0144 *** (0.0026)	-0.0138 *** (0.0025)	-0.0094 *** (0.0024)	-0.0095 *** (0.0023)
Married			0.0700 *** (0.0116)	0.0789 *** (0.0100)	0.0653 *** (0.0112)	0.0707 *** (0.0099)	0.0438 *** (0.0103)	0.0433 *** (0.0093)
Cohabiting			0.0250 (0.0226)	0.0119 (0.0205)	0.0274 (0.0220)	0.0192 (0.0203)	-0.0053 (0.0202)	-0.0046 (0.0189)
Widowed			-0.0600 ** (0.0255)	-0.0552 ** (0.0243)	-0.0518 ** (0.0247)	-0.0484 ** (0.0241)	-0.0234 (0.0227)	-0.0237 (0.0225)
Divorced			0.0146 (0.0124)	0.0153 (0.0119)	0.0118 (0.0120)	0.0124 (0.0118)	0.0103 (0.0110)	0.0102 (0.0110)
Separated			0.0173 (0.0192)	0.0053 (0.0172)	0.0203 (0.0185)	0.0130 (0.0170)	0.0178 (0.0170)	0.0184 (0.0158)

Appendix A-18: (Continued)

<b>Completed graduate degree</b>	0.1814 *** (0.0192)	0.1922 *** (0.0162)	0.1103 *** (0.0177)	0.1094 *** (0.0154)
<b>Had some graduate studies</b>	0.1829 *** (0.0217)	0.1908 *** (0.0202)	0.1110 *** (0.0200)	0.1103 *** (0.0190)
<b>Completed college</b>	0.1655 *** (0.0177)	0.1759 *** (0.0148)	0.1024 *** (0.0163)	0.1016 *** (0.0140)
<b>Had some college education</b>	0.1299 *** (0.0136)	0.1348 *** (0.0126)	0.0803 *** (0.0125)	0.0798 *** (0.0119)
<b>Completed high school</b>	0.1127 *** (0.0136)	0.1142 *** (0.0133)	0.0670 *** (0.0126)	0.0669 *** (0.0125)
<b>Excellent health</b>			0.6235 *** (0.0191)	0.6235 *** (0.0191)
<b>Very good health</b>			0.6175 *** (0.0191)	0.6178 *** (0.0190)
<b>Good health</b>			0.5831 *** (0.0191)	0.5832 *** (0.0191)
<b>Fair health</b>			0.3529 *** (0.0211)	0.3532 *** (0.0209)
<b>Constant</b>	0.8068 *** (0.1007)	0.7758 *** (0.0912)	0.7738 *** (0.0905)	0.6675 *** (0.0901)
		0.7936 *** (0.0948)	0.0787 (0.0868)	0.0800 (0.0859)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-19: Current Employment (Full Time/Part Time) versus  
the Number of Days Drunk in the Last 12 Months: the Female Sample

Female (n=9,355)								
Variables	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drunk in the last 12 months	-0.01603 ** (0.0081)	-0.00019 (0.0001)	-0.01046 (0.0068)	-0.00017 (0.0001)	-0.00666 (0.00359)	-0.00015 (0.0001)	0.00004 (0.0049)	-0.00015 (0.0001)
Age	0.0072 (0.0070)	0.0071 (0.0044)	0.0064 (0.0057)	0.0069 (0.0044)	0.0063 (0.0049)	0.0065 (0.0044)	0.0076 * (0.0041)	0.0076 * (0.0041)
Age squared	-0.0001 (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)
White	0.0848 *** (0.0212)	0.0562 *** (0.0097)	0.0608 *** (0.0180)	0.0414 *** (0.0098)	0.0262 (0.0165)	0.0128 (0.0099)	0.0120 (0.0136)	0.0124 (0.0092)
Black	0.0058 (0.0193)	-0.0110 (0.0109)	0.0154 (0.0160)	0.0042 (0.0110)	-0.0091 (0.0143)	-0.0168 (0.0111)	-0.0080 (0.0119)	-0.0078 (0.0103)
American Indian/Alaska Native	-0.0362 (0.0467)	-0.0209 (0.0291)	-0.0303 (0.0375)	-0.0205 (0.0288)	-0.0450 (0.0325)	-0.0398 (0.0286)	-0.0151 (0.0269)	-0.0153 (0.0266)
Asian/Pacific Islander	0.0808 ** (0.0345)	0.0776 *** (0.0109)	0.0618 ** (0.0280)	0.0573 *** (0.0217)	0.0289 (0.0245)	0.0250 (0.0216)	0.0240 (0.0203)	0.0241 (0.0201)
Living in MSA - in central city	0.0384 * (0.0228)	0.0092 (0.0109)	0.0265 (0.0186)	0.0080 (0.0108)	0.0134 (0.0165)	0.0011 (0.0108)	-0.0086 (0.0136)	-0.0083 (0.0100)
Living in MSA - outside central city	0.0538 *** (0.0177)	0.0398 *** (0.0102)	0.0378 *** (0.0144)	0.0286 *** (0.0102)	0.0243 * (0.0128)	0.0179 * (0.0102)	0.0007 (0.0106)	0.0009 (0.0095)
State unemployment rates	-0.0044 (0.0066)	-0.0056 (0.0042)	-0.0050 (0.0053)	-0.0057 (0.0041)	-0.0048 (0.0046)	-0.0054 (0.0041)	-0.0025 (0.0038)	-0.0025 (0.0038)
Father/mother ever depressed	-0.0282 * (0.0153)	-0.0175 * (0.0090)	-0.0245 ** (0.0124)	-0.0173 * (0.0089)	-0.0278 *** (0.0106)	-0.0238 *** (0.0089)	-0.0129 (0.0088)	-0.0130 (0.0083)
Brother/sister ever depressed	0.0078 (0.0163)	-0.0021 (0.0098)	0.0059 (0.0132)	-0.0008 (0.0097)	0.0018 (0.0115)	0.0025 (0.0096)	0.0046 (0.0095)	0.0047 (0.0089)
Father/mother had behavior problems	-0.0289 (0.0233)	-0.0513 *** (0.0128)	-0.0292 (0.0186)	-0.0427 *** (0.0127)	-0.0298 * (0.0162)	-0.0385 *** (0.0126)	-0.0128 (0.0135)	-0.0125 (0.0117)
Brother/sister had behavior problems	-0.0343 * (0.0179)	-0.0352 *** (0.0113)	-0.0317 ** (0.0144)	-0.0320 *** (0.0112)	-0.0303 ** (0.0125)	-0.0306 *** (0.0111)	-0.0212 ** (0.0104)	-0.0212 ** (0.0104)
Number of children			-0.0233 *** (0.0031)	-0.0233 *** (0.0024)	-0.0141 *** (0.0025)	-0.0137 *** (0.0025)	-0.0094 *** (0.0023)	-0.0095 *** (0.0023)
Married			0.0804 *** (0.0129)	0.0796 *** (0.0100)	0.0721 *** (0.0112)	0.0712 *** (0.0099)	0.0437 *** (0.0093)	0.0438 *** (0.0093)
Cohabiting			0.0298 (0.0291)	0.0112 (0.0205)	0.0306 (0.0253)	0.0188 (0.0203)	-0.0053 (0.0210)	-0.0050 (0.0189)
Widowed			-0.0724 ** (0.0333)	-0.0552 ** (0.0243)	-0.0596 ** (0.0290)	-0.0484 ** (0.0241)	-0.0233 (0.0240)	-0.0237 (0.0225)
Divorced			0.0273 (0.0172)	0.0155 (0.0119)	0.0204 (0.0151)	0.0126 (0.0118)	0.0102 (0.0125)	0.0105 (0.0110)
Separated			0.0333 (0.0290)	0.0048 (0.0172)	0.0306 (0.0251)	0.0128 (0.0170)	0.0177 (0.0207)	0.0182 (0.0158)

Appendix A-19: (Continued)

<b>Completed graduate degree</b>	0.1835 *** (0.0202)	0.1929 *** (0.0162)	0.1103 *** (0.0171)	0.1100 *** (0.0154)
<b>Had some graduate studies</b>	0.1855 *** (0.0233)	0.1913 *** (0.0202)	0.1109 *** (0.0195)	0.1108 *** (0.0190)
<b>Completed college</b>	0.1721 *** (0.0171)	0.1766 *** (0.0147)	0.1024 *** (0.0144)	0.1022 *** (0.0140)
<b>Had some college education</b>	0.1264 *** (0.0162)	0.1350 *** (0.0126)	0.0803 *** (0.0136)	0.0800 *** (0.0119)
<b>Completed high school</b>	0.1138 *** (0.0150)	0.1143 *** (0.0133)	0.0670 *** (0.0125)	0.0670 *** (0.0125)
<b>Excellent health</b>			0.6235 *** (0.0191)	0.6235 *** (0.0191)
<b>Very good health</b>			0.6176 *** (0.0190)	0.6176 *** (0.0190)
<b>Good health</b>			0.5831 *** (0.0191)	0.5831 *** (0.0191)
<b>Fair health</b>			0.3530 *** (0.0209)	0.3530 *** (0.0209)
<b>Constant</b>	0.8110 *** (0.1456)	0.7744 *** (0.0912)	0.7728 *** (0.0905)	0.6666 *** (0.0901)
		0.8024 *** (0.1178)		0.0787 (0.0873)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-20: Current Employment (Full Time/Part Time) versus the Average Daily Volume of Ethanol Consumed in the Last 12 Months: The Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Average daily volume of ethanol consumed in the last 12 months	-0.20641 *** (0.0790)	-0.00793 ** (0.0034)	-0.12394 * (0.0704)	-0.00741 ** (0.0034)	-0.07531 (0.0685)	-0.00625 * (0.0034)	0.00055 (0.0617)	-0.00703 ** (0.0031)
Age	0.0096 * (0.0053)	0.0072 (0.0044)	0.0088 * (0.0048)	0.0070 (0.0044)	0.0077 * (0.0046)	0.0066 (0.0044)	0.0076 * (0.0042)	0.0077 * (0.0041)
Age squared	-0.0002 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 ** (0.0001)	-0.0001 * (0.0001)	-0.0001 * (0.0001)
White	0.0833 *** (0.0155)	0.0569 *** (0.0097)	0.0572 *** (0.0138)	0.0420 *** (0.0098)	0.0236 * (0.0143)	0.0134 (0.0099)	0.0120 (0.0128)	0.0131 (0.0092)
Black	0.0095 (0.0150)	-0.0104 (0.0109)	0.0143 (0.0131)	0.0047 (0.0110)	-0.0098 (0.0131)	-0.0164 (0.0111)	-0.0080 (0.0119)	-0.0073 (0.0103)
American Indian/Alaska Native	0.0035 (0.0351)	-0.0198 (0.0291)	-0.0059 (0.0316)	-0.0194 (0.0288)	-0.0299 (0.0305)	-0.0388 (0.0286)	-0.0153 (0.0279)	-0.0142 (0.0266)
Asian/Pacific Islander	0.0807 *** (0.0255)	0.0777 *** (0.0218)	0.0592 ** (0.0230)	0.0573 *** (0.0217)	0.0274 (0.0222)	0.0251 (0.0216)	0.0240 (0.0202)	0.0243 (0.0201)
Living in MSA - in central city	0.0318 ** (0.0154)	0.0097 (0.0109)	0.0195 (0.0133)	0.0084 (0.0108)	0.0082 (0.0129)	0.0014 (0.0108)	-0.0086 (0.0117)	-0.0079 (0.0100)
Living in MSA - outside central city	0.0526 *** (0.0129)	0.0402 *** (0.0102)	0.0356 *** (0.0116)	0.0289 *** (0.0102)	0.0225 ** (0.0112)	0.0182 * (0.0102)	0.0007 (0.0102)	0.0011 (0.0095)
State unemployment rates	-0.0060 (0.0049)	-0.0056 (0.0042)	-0.0061 (0.0044)	-0.0058 (0.0041)	-0.0056 (0.0042)	-0.0054 (0.0041)	-0.0025 (0.0038)	-0.0025 (0.0038)
Father/mother ever depressed	-0.0138 (0.0106)	-0.0172 * (0.0090)	-0.0154 (0.0095)	-0.0171 * (0.0089)	-0.0224 ** (0.0091)	-0.0236 *** (0.0089)	-0.0130 (0.0083)	-0.0128 (0.0083)
Brother/sister ever depressed	0.0114 (0.0157)	0.0098 (0.0128)	0.0103 (0.0141)	0.0097 (0.0127)	0.0098 (0.0134)	0.0096 (0.0126)	0.0046 (0.0123)	0.0046 (0.0117)
Father/mother had behavior problems	-0.0392 ** (0.0157)	-0.0511 *** (0.0128)	-0.0357 ** (0.0141)	-0.0425 *** (0.0127)	-0.0345 ** (0.0134)	-0.0384 *** (0.0126)	-0.0128 (0.0123)	-0.0123 (0.0117)
Brother/sister had behavior problems	-0.0231 * (0.0140)	-0.0347 *** (0.0113)	-0.0245 ** (0.0126)	-0.0315 *** (0.0112)	-0.0261 ** (0.0121)	-0.0302 *** (0.0111)	-0.0212 * (0.0110)	-0.0208 ** (0.0104)
Number of children			-0.0245 *** (0.0026)	-0.0234 *** (0.0024)	-0.0148 *** (0.0027)	-0.0138 *** (0.0025)	-0.0094 *** (0.0025)	-0.0095 *** (0.0023)
Married			0.0692 *** (0.0122)	0.0790 *** (0.0100)	0.0652 *** (0.0115)	0.0707 *** (0.0099)	0.0438 *** (0.0106)	0.0432 *** (0.0093)
Cohabiting			0.0220 (0.0227)	0.0116 (0.0205)	0.0250 (0.0216)	0.0191 (0.0203)	-0.0053 (0.0197)	-0.0046 (0.0189)
Widowed			-0.0621 ** (0.0262)	-0.0553 ** (0.0243)	-0.0527 ** (0.0250)	-0.0485 ** (0.0241)	-0.0234 (0.0228)	-0.0238 (0.0225)
Divorced			0.0082 (0.0133)	0.0149 (0.0119)	0.0083 (0.0127)	0.0121 (0.0118)	0.0103 (0.0115)	0.0099 (0.0110)
Separated			0.0086 (0.0184)	0.0046 (0.0172)	0.0147 (0.0175)	0.0126 (0.0170)	0.0178 (0.0160)	0.0180 (0.0158)

Appendix A-20: (Continued)

<b>Completed graduate degree</b>	0.1847 *** (0.0183)	0.1924 *** (0.0162)	0.1103 *** (0.0171)	0.1094 *** (0.0154)
<b>Had some graduate studies</b>	0.1884 *** (0.0208)	0.1912 *** (0.0202)	0.1109 *** (0.0192)	0.1106 *** (0.0190)
<b>Completed college</b>	0.1681 *** (0.0170)	0.1760 *** (0.0147)	0.1024 *** (0.0159)	0.1015 *** (0.0140)
<b>Had some college education</b>	0.1285 *** (0.0143)	0.1347 *** (0.0126)	0.0803 *** (0.0132)	0.0796 *** (0.0119)
<b>Completed high school</b>	0.1087 *** (0.0146)	0.1139 *** (0.0133)	0.0670 *** (0.0134)	0.0664 *** (0.0125)
<b>Excellent health</b>			0.6234 *** (0.0201)	0.6242 *** (0.0191)
<b>Very good health</b>			0.6175 *** (0.0198)	0.6182 *** (0.0190)
<b>Good health</b>			0.5831 *** (0.0192)	0.5834 *** (0.0191)
<b>Fair health</b>			0.3529 *** (0.0224)	0.3539 *** (0.0209)
<b>Constant</b>	0.7362 *** (0.1074)	0.7725 *** (0.0912)	0.7479 *** (0.0970)	0.7708 *** (0.0905)
			0.6653 *** (0.0901)	0.6653 *** (0.0869)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-21: (Continued)

<b>Completed graduate degree</b>	0.2714 *** (0.0228)	0.2813 *** (0.0212)	0.1966 *** (0.0225)	0.2011 *** (0.0209)
<b>Had some graduate studies</b>	0.2536 *** (0.0272)	0.2563 *** (0.0264)	0.1773 *** (0.0260)	0.1790 *** (0.0257)
<b>Completed college</b>	0.2116 *** (0.0208)	0.2207 *** (0.0193)	0.1447 *** (0.0204)	0.1488 *** (0.0189)
<b>Had some college education</b>	0.1652 *** (0.0172)	0.1697 *** (0.0165)	0.1150 *** (0.0166)	0.1171 *** (0.0161)
<b>Completed high school</b>	0.1357 *** (0.0182)	0.1402 *** (0.0174)	0.0932 *** (0.0174)	0.0952 *** (0.0169)
<b>Excellent health</b>			0.5775 *** (0.0271)	0.5733 *** (0.0259)
<b>Very good health</b>			0.5634 *** (0.0269)	0.5594 *** (0.0258)
<b>Good health</b>			0.5266 *** (0.0260)	0.5256 *** (0.0258)
<b>Fair health</b>			0.3051 *** (0.0288)	0.3022 *** (0.0283)
<b>Constant</b>	0.7405 *** (0.1356)	0.7463 *** (0.1199)	0.7438 *** (0.1254)	0.7501 *** (0.1185)
			0.6130 *** (0.1209)	0.6120 *** (0.1178)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-22: Currently Working Full Time (35+ Hours a Week) versus the  
Number of Days Drank 5+ Drinks in the Last 12 Months: the Female Sample

		Female (n=9,355)						
Variables	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drank 5+ drinks in the last 12 months	-0.00794 *** (0.00226)	-0.00008 (0.00002)	-0.00549 ** (0.00225)	-0.00011 (0.00002)	-0.00369 (0.00226)	0.00000 (0.00002)	-0.00145 (0.00224)	0.00001 (0.00002)
Age	-0.0034 (0.0066)	-0.0032 (0.0058)	0.0009 (0.0062)	0.0008 (0.0058)	0.0006 (0.0059)	0.0005 (0.0057)	0.0016 (0.0056)	0.0016 (0.0055)
Age squared	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
White	0.0683 *** (0.0161)	0.0468 *** (0.0128)	0.0333 ** (0.0154)	0.0178 (0.0128)	-0.0069 (0.0162)	-0.0202 (0.0130)	-0.0159 (0.0153)	-0.0212 * (0.0125)
Black	0.0479 *** (0.0166)	0.0365 ** (0.0144)	0.0342 ** (0.0155)	0.0294 ** (0.0145)	0.0076 (0.0152)	0.0030 (0.0145)	0.0137 (0.0144)	0.0120 (0.0140)
American Indian/Alaska Native	0.0164 (0.0458)	-0.0310 (0.0382)	0.0041 (0.0428)	-0.0284 (0.0377)	-0.0291 (0.0419)	-0.0529 (0.0374)	-0.0204 (0.0395)	-0.0299 (0.0361)
Asian/Pacific Islander	0.0614 * (0.0323)	0.0674 ** (0.0286)	0.0427 (0.0301)	0.0443 (0.0292)	0.0024 (0.0284)	-0.0006 (0.0283)	-0.0003 (0.0275)	-0.0015 (0.0273)
Living in MSA - in central city	0.0512 *** (0.0165)	0.0392 *** (0.0143)	0.0233 (0.0153)	0.0173 (0.0142)	0.0121 (0.0150)	0.0066 (0.0141)	0.0000 (0.0141)	-0.0022 (0.0136)
Living in MSA - outside central city	0.0433 *** (0.0151)	0.0424 *** (0.0135)	0.0222 (0.0142)	0.0216 (0.0134)	0.0085 (0.0137)	0.0064 (0.0133)	-0.0089 (0.0130)	-0.0098 (0.0128)
State unemployment rates	0.0022 (0.0061)	0.0029 (0.0055)	0.0011 (0.0057)	0.0017 (0.0054)	0.0016 (0.0055)	0.0020 (0.0053)	0.0046 (0.0052)	0.0047 (0.0052)
Father/mother ever depressed	-0.0164 (0.0133)	-0.0186 (0.0118)	-0.0206 * (0.0124)	-0.0217 * (0.0117)	-0.0294 ** (0.0120)	-0.0308 *** (0.0116)	-0.0200 * (0.0113)	-0.0205 * (0.0112)
Brother/sister ever depressed	0.0059 (0.0144)	0.0039 (0.0128)	0.0055 (0.0135)	0.0042 (0.0127)	0.0022 (0.0129)	0.0011 (0.0125)	0.0086 (0.0122)	0.0082 (0.0121)
Father/mother had behavior problems	-0.0327 (0.0202)	-0.0540 *** (0.0168)	-0.0338 * (0.0187)	-0.0472 *** (0.0166)	-0.0328 * (0.0180)	-0.0414 ** (0.0165)	-0.0136 (0.0169)	-0.0169 (0.0159)
Brother/sister had behavior problems	-0.0222 (0.0181)	-0.0432 *** (0.0149)	-0.0254 (0.0170)	-0.0396 *** (0.0147)	-0.0279 * (0.0163)	-0.0374 ** (0.0145)	-0.0249 (0.0154)	-0.0286 ** (0.0140)
Number of children			-0.0458 *** (0.0033)	-0.0457 *** (0.0031)	-0.0335 *** (0.0034)	-0.0324 *** (0.0032)	-0.0287 *** (0.0032)	-0.0283 *** (0.0031)
Married			-0.0089 (0.0155)	0.0057 (0.0131)	-0.0143 (0.0149)	-0.0049 (0.0130)	-0.0349 ** (0.0140)	-0.0313 ** (0.0126)
Cohabiting			0.0304 (0.0303)	0.0089 (0.0269)	0.0331 (0.0291)	0.0189 (0.0266)	0.0021 (0.0275)	-0.0036 (0.0257)
Widowed			-0.0792 ** (0.0340)	-0.0714 ** (0.0319)	-0.0678 ** (0.0327)	-0.0619 ** (0.0315)	-0.0405 (0.0309)	-0.0381 (0.0305)
Divorced			0.0524 *** (0.0166)	0.0536 *** (0.0156)	0.0500 *** (0.0159)	0.0510 *** (0.0155)	0.0484 *** (0.0150)	0.0487 *** (0.0149)
Separated			0.0519 ** (0.0256)	0.0322 (0.0225)	0.0560 ** (0.0245)	0.0434 * (0.0223)	0.0532 ** (0.0232)	0.0482 ** (0.0215)

Appendix A-22: (Continued)

<b>Completed graduate degree</b>	0.2626 *** (0.0254)	0.2813 *** (0.0212)	0.1942 *** (0.0241)	0.2014 *** (0.0209)
<b>Had some graduate studies</b>	0.2426 *** (0.0288)	0.2563 *** (0.0264)	0.1740 *** (0.0273)	0.1792 *** (0.0257)
<b>Completed college</b>	0.2029 *** (0.0234)	0.2208 *** (0.0193)	0.1423 *** (0.0222)	0.1492 *** (0.0189)
<b>Had some college education</b>	0.1612 *** (0.0180)	0.1697 *** (0.0165)	0.1140 *** (0.0171)	0.1173 *** (0.0161)
<b>Completed high school</b>	0.1376 *** (0.0181)	0.1402 *** (0.0174)	0.0944 *** (0.0171)	0.0954 *** (0.0169)
<b>Excellent health</b>			0.5729 *** (0.0261)	0.5730 *** (0.0259)
<b>Very good health</b>			0.5609 *** (0.0261)	0.5591 *** (0.0258)
<b>Good health</b>			0.5261 *** (0.0260)	0.5255 *** (0.0258)
<b>Fair health</b>			0.3045 *** (0.0287)	0.3020 *** (0.0283)
<b>Constant</b>	0.7932 *** (0.1356)	0.7467 *** (0.1199)	0.7832 *** (0.1266)	0.7508 *** (0.1185)
			0.6120 *** (0.1178)	0.0794 (0.1165)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix A-23: Currently Working Full Time (35+ Hours a Week) versus  
the Number of Days Drunk in the Last 12 Months: the Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drunk in the last 12 months	-0.02357 ** (0.0115)	-0.00006 (0.0002)	-0.01714 * (0.0100)	-0.00007 (0.0002)	-0.01140 (0.0084)	-0.00004 (0.0002)	-0.00494 (0.0069)	-0.00004 (0.0002)
Age	-0.0030 (0.0100)	-0.0032 (0.0058)	0.0000 (0.0083)	0.0007 (0.0058)	0.0001 (0.0070)	0.0005 (0.0057)	0.0014 (0.0058)	0.0016 (0.0055)
Age squared	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
White	0.0891 *** (0.0301)	0.0467 *** (0.0128)	0.0498 * (0.0262)	0.0176 (0.0128)	0.0031 (0.0233)	-0.0201 (0.0129)	-0.0211 * (0.0192)	-0.0211 * (0.0125)
Black	0.0614 ** (0.0274)	0.0365 ** (0.0144)	0.0480 ** (0.0233)	0.0294 ** (0.0145)	0.0166 (0.0202)	0.0031 (0.0145)	0.0179 (0.0168)	0.0121 (0.0140)
American Indian/Alaska Native	-0.0542 (0.0662)	-0.0315 (0.0382)	-0.0454 (0.0546)	-0.0291 (0.0377)	-0.0621 (0.0458)	-0.0529 (0.0373)	-0.0337 (0.0381)	-0.0298 (0.0361)
Asian/Pacific Islander	0.0722 (0.0490)	0.0675 ** (0.0286)	0.0518 (0.0407)	0.0443 (0.0284)	0.0062 (0.0346)	-0.0006 (0.0283)	0.0015 (0.0288)	-0.0014 (0.0273)
Living in MSA - in central city	0.0826 ** (0.0323)	0.0391 *** (0.0143)	0.0482 * (0.0271)	0.0173 (0.0142)	0.0282 (0.0233)	0.0067 (0.0141)	0.0071 (0.0193)	-0.0021 (0.0136)
Living in MSA - outside central city	0.0632 ** (0.0251)	0.0424 *** (0.0135)	0.0368 * (0.0210)	0.0216 (0.0134)	0.0177 (0.0181)	0.0065 (0.0133)	-0.0050 (0.0150)	-0.0097 (0.0128)
State unemployment rates	0.0046 (0.0094)	0.0029 (0.0055)	0.0029 (0.0077)	0.0017 (0.0054)	0.0030 (0.0065)	0.0020 (0.0053)	0.0052 (0.0054)	0.0047 (0.0052)
Father/mother ever depressed	-0.0346 (0.0217)	-0.0187 (0.0118)	-0.0336 * (0.0181)	-0.0217 * (0.0117)	-0.0377 ** (0.0149)	-0.0308 *** (0.0116)	-0.0234 * (0.0124)	-0.0205 * (0.0112)
Brother/sister ever depressed	0.0186 (0.0231)	0.0039 (0.0128)	0.0153 (0.0192)	0.0042 (0.0127)	0.0087 (0.0162)	0.0011 (0.0125)	0.0115 (0.0135)	0.0082 (0.0121)
Father/mother had behavior problems	-0.0208 (0.0330)	-0.0541 *** (0.0168)	-0.0249 (0.0271)	-0.0473 *** (0.0166)	-0.0261 (0.0229)	-0.0414 ** (0.0165)	-0.0103 (0.0191)	-0.0169 (0.0159)
Brother/sister had behavior problems	-0.0420 * (0.0254)	-0.0434 *** (0.0149)	-0.0396 * (0.0210)	-0.0399 *** (0.0147)	-0.0369 ** (0.0176)	-0.0374 ** (0.0145)	-0.0283 * (0.0147)	-0.0286 ** (0.0140)
Number of children			-0.0457 *** (0.0045)	-0.0457 *** (0.0031)	-0.0331 *** (0.0039)	-0.0324 *** (0.0032)	-0.0286 *** (0.0033)	-0.0283 *** (0.0031)
Married			0.0073 (0.0187)	0.0060 (0.0131)	-0.0034 (0.0158)	-0.0049 (0.0130)	-0.0307 ** (0.0132)	-0.0313 ** (0.0126)
Cohabiting			0.0395 (0.0424)	0.0086 (0.0269)	0.0397 (0.0357)	0.0190 (0.0266)	0.0055 (0.0297)	-0.0035 (0.0257)
Widowed			-0.1000 ** (0.0485)	-0.0714 ** (0.0319)	-0.0815 ** (0.0408)	-0.0620 ** (0.0315)	-0.0466 (0.0340)	-0.0382 (0.0305)
Divorced			0.0733 *** (0.0250)	0.0537 *** (0.0156)	0.0646 *** (0.0212)	0.0510 *** (0.0155)	0.0546 *** (0.0177)	0.0488 *** (0.0149)
Separated			0.0791 * (0.0423)	0.0320 (0.0225)	0.0745 ** (0.0354)	0.0435 * (0.0223)	0.0617 ** (0.0294)	0.0483 ** (0.0215)

Appendix A-23: (Continued)

<b>Completed graduate degree</b>	0.2649 *** (0.0284)	0.2813 *** (0.0212)	0.1940 *** (0.0242)	0.2013 *** (0.0209)
<b>Had some graduate studies</b>	0.2461 *** (0.0329)	0.2563 *** (0.0264)	0.1745 *** (0.0277)	0.1791 *** (0.0257)
<b>Completed college</b>	0.2129 *** (0.0241)	0.2208 *** (0.0193)	0.1455 *** (0.0204)	0.1491 *** (0.0189)
<b>Had some college education</b>	0.1545 *** (0.0229)	0.1697 *** (0.0165)	0.1106 *** (0.0193)	0.1172 *** (0.0161)
<b>Completed high school</b>	0.1393 *** (0.0212)	0.1402 *** (0.0174)	0.0949 *** (0.0177)	0.0954 *** (0.0169)
<b>Excellent health</b>			0.5738 *** (0.0271)	0.5730 *** (0.0259)
<b>Very good health</b>			0.5598 *** (0.0270)	0.5591 *** (0.0258)
<b>Good health</b>			0.5243 *** (0.0271)	0.5255 *** (0.0258)
<b>Fair health</b>			0.3032 *** (0.0296)	0.3021 *** (0.0283)
<b>Constant</b>	0.8007 *** (0.2065)	0.7995 *** (0.1715)	0.6487 *** (0.1454)	0.6121 *** (0.1178)
			0.7504 *** (0.1185)	0.0796 (0.1237)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix A-24: Currently Working Full Time (35+ Hours a Week) versus the

Average Daily Volume of Ethanol Consumed in the Last 12 Months: the Female Sample

Variables	Female (n=9,355)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Average daily volume of ethanol consumed in the last 12 months	-0.28261 *** (0.11057)	-0.00423 (0.0045)	-0.17897 * (0.0937)	-0.00563 (0.0044)	-0.110693 (0.0901)	-0.00410 (0.0044)	-0.03308 (0.0838)	-0.00479 (0.0042)
Age	0.0003 (0.0071)	-0.0031 (0.0058)	0.0036 (0.0064)	0.0008 (0.0058)	0.0022 (0.0061)	0.0006 (0.0057)	0.0021 (0.0057)	0.0016 (0.0055)
Age squared	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
White	0.0841 *** (0.0207)	0.0471 *** (0.0128)	0.0408 ** (0.0184)	0.0182 (0.0128)	-0.0045 (0.0188)	-0.0196 (0.0130)	-0.0164 (0.0174)	-0.0205 (0.0125)
Black	0.0647 *** (0.0201)	0.0369 ** (0.0144)	0.0441 ** (0.0174)	0.0298 ** (0.0145)	0.0132 (0.0172)	0.0034 (0.0145)	0.0152 (0.0162)	0.0125 (0.0140)
American Indian/Alaska Native	0.0016 (0.0470)	-0.0310 (0.0382)	-0.0082 (0.0421)	-0.0284 (0.0377)	-0.0390 (0.0402)	-0.0524 (0.0374)	-0.0254 (0.0379)	-0.0291 (0.0361)
Asian/Pacific Islander	0.0718 ** (0.0341)	0.0675 ** (0.0286)	0.0473 (0.0306)	0.0444 (0.0284)	0.0030 (0.0292)	-0.0005 (0.0283)	-0.0003 (0.0275)	-0.0013 (0.0273)
Living in MSA - in central city	0.0705 *** (0.0206)	0.0395 *** (0.0143)	0.0343 * (0.0177)	0.0177 (0.0142)	0.0171 (0.0170)	0.0070 (0.0141)	0.0010 (0.0159)	-0.0017 (0.0136)
Living in MSA - outside central city	0.0601 *** (0.0173)	0.0427 *** (0.0135)	0.0318 ** (0.0154)	0.0219 (0.0134)	0.0131 (0.0148)	0.0067 (0.0133)	-0.0078 (0.0138)	-0.0095 (0.0128)
State unemployment rates	0.0023 (0.0065)	0.0029 (0.0055)	0.0011 (0.0058)	0.0017 (0.0054)	0.0017 (0.0055)	0.0020 (0.0053)	0.0047 (0.0052)	0.0047 (0.0052)
Father/mother ever depressed	-0.0137 (0.0142)	-0.0186 (0.0118)	-0.0191 (0.0127)	-0.0216 * (0.0117)	-0.0289 ** (0.0120)	-0.0307 *** (0.0116)	-0.0198 * (0.0113)	-0.0204 * (0.0112)
Brother/sister ever depressed	0.0035 (0.0152)	0.0039 (0.0128)	0.0037 (0.0137)	0.0041 (0.0127)	0.0008 (0.0129)	0.0010 (0.0125)	0.0081 (0.0121)	0.0082 (0.0121)
Father/mother had behavior problems	-0.0372 * (0.0210)	-0.0540 *** (0.0168)	-0.0370 ** (0.0187)	-0.0471 *** (0.0166)	-0.0354 ** (0.0177)	-0.0412 ** (0.0165)	-0.0150 (0.0167)	-0.0166 (0.0159)
Brother/sister had behavior problems	-0.0268 (0.0187)	-0.0431 *** (0.0149)	-0.0291 * (0.0168)	-0.0396 *** (0.0147)	-0.0310 * (0.0159)	-0.0371 ** (0.0145)	-0.0265 * (0.0150)	-0.0283 ** (0.0140)
Number of children			-0.0474 *** (0.0035)	-0.0458 *** (0.0031)	-0.0340 *** (0.0036)	-0.0325 *** (0.0032)	-0.0288 *** (0.0033)	-0.0284 *** (0.0031)
Married			-0.0090 (0.0162)	0.0055 (0.0131)	-0.0134 (0.0151)	-0.0053 (0.0130)	-0.0340 ** (0.0143)	-0.0317 ** (0.0126)
Cohabiting			0.0246 (0.0302)	0.0090 (0.0269)	0.0280 (0.0284)	0.0193 (0.0266)	-0.0007 (0.0267)	-0.0031 (0.0257)
Widowed			-0.0816 ** (0.0348)	-0.0716 ** (0.0319)	-0.0684 ** (0.0329)	-0.0622 ** (0.0315)	-0.0401 (0.0310)	-0.0384 (0.0305)
Divorced			0.0433 ** (0.0177)	0.0533 *** (0.0156)	0.0451 *** (0.0167)	0.0508 *** (0.0155)	0.0469 *** (0.0157)	0.0484 *** (0.0149)
Separated			0.0379 (0.0245)	0.0466 ** (0.0225)	0.0435 * (0.0231)	0.0492 ** (0.0223)	0.0484 ** (0.0217)	0.0484 ** (0.0215)

Appendix A-24: (Continued)

<b>Completed graduate degree</b>	0.2694 *** (0.0240)	0.2809 *** (0.0212)	0.1974 *** (0.0232)	0.2008 *** (0.0209)
<b>Had some graduate studies</b>	0.2520 *** (0.0274)	0.2561 *** (0.0264)	0.1776 *** (0.0261)	0.1789 *** (0.0257)
<b>Completed college</b>	0.2086 *** (0.0223)	0.2203 *** (0.0193)	0.1451 *** (0.0216)	0.1485 *** (0.0189)
<b>Had some college education</b>	0.1601 *** (0.0188)	0.1693 *** (0.0165)	0.1142 *** (0.0179)	0.1168 *** (0.0161)
<b>Completed high school</b>	0.1323 *** (0.0192)	0.1399 *** (0.0174)	0.0928 *** (0.0182)	0.0950 *** (0.0169)
<b>Excellent health</b>			0.5763 *** (0.0273)	0.5735 *** (0.0259)
<b>Very good health</b>			0.5621 *** (0.0269)	0.5595 *** (0.0258)
<b>Good health</b>			0.5269 *** (0.0262)	0.5257 *** (0.0258)
<b>Fair health</b>			0.3064 *** (0.0304)	0.3027 *** (0.0283)
<b>Constant</b>	0.6946 *** (0.1436)	0.7455 *** (0.1198)	0.7150 *** (0.1291)	0.7490 *** (0.1185)
			0.6114 *** (0.1178)	0.0724 (0.1181)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix B: Complete Second Stage Regression Results Using NSDUH

Appendix B-1: Employment (Full Time/Part Time) Last Week versus  
Alcohol Abuse and/or Dependence in the Last 12 Months: the Male Sample

Variables	Male (n=12,046)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS		OLS		2SLS		OLS		2SLS	
Alcohol abuse and/or dependence in the last 12 months	-0.1929 *** (0.0677)	-0.0325 *** (0.0063)	-0.1377 * (0.0743)	-0.0236 *** (0.0063)	-0.0764 (0.0788)	-0.0207 *** (0.0063)	-0.0689 (0.0793)	-0.0188 *** (0.0063)		
Age between 30 and 34 years old	0.0115 (0.0073)	0.0174 *** (0.0067)	0.0053 (0.0070)	0.0080 (0.0067)	0.0061 (0.0069)	0.0073 (0.0067)	0.0070 (0.0069)	0.0082 (0.0067)		
Age between 35 and 49 years old	-0.0032 (0.0079)	0.0094 (0.0058)	-0.0126 * (0.0074)	-0.0060 (0.0060)	-0.0102 (0.0074)	-0.0071 (0.0060)	-0.0076 (0.0076)	-0.0046 (0.0060)		
White	0.0668 *** (0.0090)	0.0659 *** (0.0088)	0.0637 *** (0.0089)	0.0627 *** (0.0087)	0.0629 *** (0.0087)	0.0624 *** (0.0087)	0.0620 *** (0.0088)	0.0615 *** (0.0087)		
Black	0.0052 (0.0111)	0.0024 (0.0108)	0.0112 (0.0109)	0.0107 (0.0107)	0.0173 (0.0108)	0.0175 (0.0108)	0.0166 (0.0108)	0.0168 (0.0108)		
Hispanic	0.0615 *** (0.0106)	0.0581 *** (0.0103)	0.0575 *** (0.0105)	0.0545 *** (0.0102)	0.0703 *** (0.0104)	0.0698 *** (0.0104)	0.0699 *** (0.0104)	0.0694 *** (0.0104)		
Living in a MSA with >1 million persons	0.0006 (0.0057)	0.0025 (0.0055)	0.0046 (0.0058)	0.0065 (0.0055)	-0.0017 (0.0057)	-0.0013 (0.0056)	-0.0027 (0.0057)	-0.0024 (0.0056)		
Living in a MSA with <1 million persons	0.0047 (0.0056)	0.0049 (0.0055)	0.0068 (0.0055)	0.0072 (0.0055)	0.0019 (0.0055)	0.0018 (0.0055)	0.0012 (0.0055)	0.0010 (0.0055)		
Number of children aged <18 in household			0.0004 (0.0022)	0.0012 (0.0022)	0.0019 (0.0022)	0.0024 (0.0022)	0.0018 (0.0022)	0.0022 (0.0022)		
Married			0.0504 *** (0.0083)	0.0595 *** (0.0058)	0.0532 *** (0.0084)	0.0575 *** (0.0058)	0.0530 *** (0.0084)	0.0568 *** (0.0058)		
Widowed			0.0148 (0.0336)	0.0233 (0.0327)	0.0220 (0.0333)	0.0264 (0.0326)	0.0241 (0.0332)	0.0281 (0.0325)		
Divorced or separated			0.0256 *** (0.0076)	0.0250 *** (0.0074)	0.0278 *** (0.0075)	0.0277 *** (0.0074)	0.0286 *** (0.0074)	0.0286 *** (0.0074)		
Completed undergraduate/graduate study				0.0523 *** (0.0090)		0.0559 *** (0.0073)	0.0449 *** (0.0084)	0.0473 *** (0.0075)		
Had some college education				0.0354 *** (0.0073)		0.0366 *** (0.0073)	0.0301 *** (0.0075)	0.0307 *** (0.0074)		
Completed high school				0.0236 *** (0.0073)		0.0251 *** (0.0069)	0.0192 *** (0.0072)	0.0202 *** (0.0070)		
Excellent health							0.1185 *** (0.0300)	0.1228 *** (0.0291)		
Very good health							0.1138 *** (0.0295)	0.1171 *** (0.0290)		
Good health							0.1033 *** (0.0293)	0.1051 *** (0.0291)		
Fair health							0.0851 *** (0.0304)	0.0859 *** (0.0303)		
Constant	0.9093 *** (0.0163)	0.8798 *** (0.0103)	0.8735 *** (0.0199)	0.8476 *** (0.0107)	0.8312 *** (0.0234)	0.8169 *** (0.0119)	0.7242 *** (0.0392)	0.7089 *** (0.0308)		

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-2: Employment (Full Time/Part Time) Last Week versus

Alcohol Abuse and/or Dependence in the Last 12 Months: the Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.6529 *** (0.1733)	-0.0276 *** (0.0096)	-0.6759 *** (0.1922)	-0.0212 ** (0.0097)	-0.5304 *** (0.1903)	-0.0157 (0.0096)	-0.5102 *** (0.1906)	-0.0116 (0.0096)
Age between 30 and 34 years old	-0.0085 (0.0090)	0.0004 (0.0074)	-0.0085 (0.0089)	-0.0045 (0.0075)	-0.0065 (0.0084)	-0.0032 (0.0075)	-0.0052 (0.0084)	-0.0015 (0.0074)
Age between 35 and 49 years old	-0.0113 (0.0090)	0.0076 (0.0063)	-0.0128 (0.0089)	0.0026 (0.0066)	-0.0060 (0.0087)	0.0067 (0.0065)	-0.0025 (0.0088)	0.0109 * (0.0065)
White	0.0429 *** (0.0115)	0.0342 *** (0.0096)	0.0428 *** (0.0118)	0.0314 *** (0.0096)	0.0396 *** (0.0111)	0.0306 *** (0.0095)	0.0338 *** (0.0113)	0.0233 ** (0.0095)
Black	-0.0125 (0.0133)	-0.0052 (0.0113)	-0.0144 (0.0140)	-0.0006 (0.0113)	-0.0064 (0.0133)	0.0056 (0.0113)	-0.0068 (0.0132)	0.0042 (0.0112)
Hispanic	-0.0205 (0.0140)	-0.0071 (0.0116)	-0.0214 (0.0141)	-0.0090 (0.0116)	0.0013 (0.0140)	0.0152 (0.0116)	0.0020 (0.0138)	0.0149 (0.0116)
Living in a MSA with >1 million persons	-0.0017 (0.0077)	-0.0128 ** (0.0061)	-0.0015 (0.0077)	-0.0104 * (0.0061)	-0.0107 (0.0075)	-0.0192 *** (0.0061)	-0.0123 (0.0076)	-0.0210 *** (0.0061)
Living in a MSA with <1 million persons	0.0001 (0.0069)	-0.0024 (0.0059)	0.0001 (0.0070)	-0.0012 (0.0059)	-0.0055 (0.0066)	-0.0076 (0.0059)	-0.0057 (0.0066)	-0.0079 (0.0059)
Number of children aged <18 in household			-0.0019 (0.0030)	0.0025 (0.0023)	0.0017 (0.0030)	0.0058 ** (0.0023)	0.0015 (0.0023)	0.0052 ** (0.0023)
Married			-0.0036 (0.0126)	0.0308 *** (0.0065)	0.0002 (0.0121)	0.0264 *** (0.0064)	-0.0013 (0.0117)	0.0231 *** (0.0064)
Widowed			-0.0542 ** (0.0264)	-0.0434 * (0.0222)	-0.0452 * (0.0249)	-0.0353 (0.0221)	-0.0442 * (0.0247)	-0.0341 (0.0220)
Divorced or separated			0.0203 ** (0.0094)	0.0125 (0.0077)	0.0213 ** (0.0088)	0.0159 ** (0.0077)	0.0210 ** (0.0087)	0.0158 ** (0.0077)
Completed undergraduate/graduate study					0.0890 *** (0.0119)	0.1079 *** (0.0087)	0.0761 *** (0.0111)	0.0898 *** (0.0089)
Had some college education					0.0836 *** (0.0111)	0.0991 *** (0.0086)	0.0740 *** (0.0106)	0.0862 *** (0.0086)
Completed high school					0.0530 *** (0.0104)	0.0645 *** (0.0085)	0.0455 *** (0.0100)	0.0544 *** (0.0085)
Excellent health							0.0292 (0.0393)	0.0697 ** (0.0326)
Very good health							0.0307 (0.0379)	0.0614 * (0.0325)
Good health							0.0089 (0.0379)	0.0388 (0.0326)
Fair health							-0.0436 (0.0378)	-0.0275 (0.0336)
Constant	0.9556 *** (0.0178)	0.9122 *** (0.0113)	0.9595 *** (0.0240)	0.8931 *** (0.0120)	0.8759 *** (0.0289)	0.8095 *** (0.0138)	0.8664 *** (0.0521)	0.7744 *** (0.0347)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix B-3: Working Full Time Last Week versus Alcohol Abuse  
and/or Dependence in the Last 12 Months: the Male Sample

Variables	Male (n=12,046)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		OLS		2SLS	
Alcohol abuse and/or dependence in the last 12 months	-0.3232 *** (0.0925)	-0.0380 *** (0.0084)	-0.2157 ** (0.0999)	-0.0228 *** (0.0084)	-0.1672 (0.1062)	-0.0199 ** (0.0084)	-0.1464 (0.1063)	-0.0167 ** (0.0084)		
Age between 30 and 34 years old	0.0193 * (0.0100)	0.0297 *** (0.0089)	0.0067 (0.0094)	0.0112 (0.0089)	0.0072 (0.0093)	0.0104 (0.0089)	0.0093 (0.0093)	0.0123 (0.0089)		
Age between 35 and 49 years old	0.0106 (0.0109)	0.0329 *** (0.0078)	-0.0091 (0.0100)	0.0020 (0.0080)	-0.0074 (0.0100)	0.0008 (0.0080)	-0.0018 (0.0102)	0.0060 (0.0080)		
White	0.0925 *** (0.0123)	0.0910 *** (0.0117)	0.0863 *** (0.0119)	0.0847 *** (0.0116)	0.0854 *** (0.0118)	0.0841 *** (0.0116)	0.0842 *** (0.0117)	0.0828 *** (0.0116)		
Black	0.0115 (0.0152)	0.0065 (0.0144)	0.0217 (0.0146)	0.0208 (0.0143)	0.0264 * (0.0146)	0.0271 * (0.0144)	0.0252 * (0.0145)	0.0257 * (0.0143)		
Hispanic	0.0977 *** (0.0145)	0.0916 *** (0.0137)	0.0887 *** (0.0142)	0.0837 *** (0.0136)	0.1005 *** (0.0141)	0.0993 *** (0.0139)	0.0993 *** (0.0140)	0.0981 *** (0.0138)		
Living in a MSA with >1 million persons	-0.0021 (0.0079)	0.0012 (0.0074)	0.0062 (0.0077)	0.0096 (0.0074)	0.0013 (0.0077)	0.0025 (0.0075)	-0.0004 (0.0076)	0.0004 (0.0075)		
Living in a MSA with <1 million persons	0.0035 (0.0077)	0.0037 (0.0073)	0.0079 (0.0074)	0.0086 (0.0073)	0.0040 (0.0074)	0.0037 (0.0073)	0.0025 (0.0074)	0.0020 (0.0073)		
Number of children aged <18 in household			0.0028 (0.0030)	0.0042 (0.0029)	0.0042 (0.0030)	0.0053 * (0.0029)	0.0039 (0.0029)	0.0049 * (0.0029)		
Married			0.0939 *** (0.0112)	0.1094 *** (0.0077)	0.0960 *** (0.0113)	0.1074 *** (0.0077)	0.0960 *** (0.0112)	0.1059 *** (0.0077)		
Widowed			0.0385 (0.0451)	0.0528 (0.0436)	0.0444 (0.0449)	0.0561 (0.0435)	0.0498 (0.0446)	0.0603 (0.0433)		
Divorced or separated			0.0687 *** (0.0102)	0.0676 *** (0.0099)	0.0705 *** (0.0101)	0.0703 *** (0.0099)	0.0722 *** (0.0100)	0.0722 *** (0.0099)		
Completed undergraduate/graduate study					0.0482 *** (0.0121)	0.0578 *** (0.0098)	0.0358 *** (0.0113)	0.0420 *** (0.0100)		
Had some college education					0.0339 *** (0.0102)	0.0374 *** (0.0098)	0.0242 ** (0.0101)	0.0258 *** (0.0099)		
Completed high school					0.0277 *** (0.0098)	0.0317 *** (0.0093)	0.0191 ** (0.0096)	0.0216 ** (0.0093)		
Excellent health							0.3456 *** (0.0402)	0.3569 *** (0.0388)		
Very good health							0.3436 *** (0.0396)	0.3521 *** (0.0386)		
Good health							0.3323 *** (0.0393)	0.3369 *** (0.0387)		
Fair health							0.2851 *** (0.0408)	0.2872 *** (0.0403)		
Constant	0.8422 *** (0.0222)	0.7899 *** (0.0138)	0.7716 *** (0.0268)	0.7279 *** (0.0142)	0.7317 *** (0.0316)	0.6940 *** (0.0159)	0.3997 *** (0.0526)	0.3600 *** (0.0410)		

Standard errors are in parentheses.  
\*\*\*Statistically significant at 1%  
\*\*Statistically significant at 5%  
\*Statistically significant at 10%



Appendix B-4: Working Full Time Last Week versus Alcohol Abuse  
and/or Dependence in the Last 12 Months: the Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Alcohol abuse and/or dependence in the last 12 months	-0.2191 (0.2649)	0.0205 (0.0170)	-0.4763 (0.2942)	-0.0070 (0.0169)	-0.3147 (0.3042)	-0.0012 (0.0169)	-0.2759 (0.3059)	0.0030 (0.0169)
Age between 30 and 34 years old	-0.0063 (0.0138)	-0.0029 (0.0131)	0.0154 (0.0137)	0.0183 (0.0131)	0.0173 (0.0134)	0.0194 (0.0131)	0.0189 (0.0134)	0.0210 (0.0131)
Age between 35 and 49 years old	0.0088 (0.0138)	0.0161 (0.0112)	0.0093 (0.0137)	0.0203 * (0.0115)	0.0165 (0.0138)	0.0242 ** (0.0115)	0.0216 (0.0142)	0.0291 ** (0.0115)
White	-0.0079 (0.0175)	-0.0113 (0.0170)	0.0000 (0.0181)	-0.0081 (0.0168)	-0.0038 (0.0178)	-0.0093 (0.0168)	-0.0123 (0.0182)	-0.0182 (0.0168)
Black	0.0702 *** (0.0203)	0.0730 *** (0.0199)	0.0661 *** (0.0214)	0.0760 *** (0.0198)	0.0759 *** (0.0213)	0.0832 *** (0.0198)	0.0752 *** (0.0211)	0.0814 *** (0.0198)
Hispanic	-0.0154 (0.0214)	-0.0103 (0.0204)	0.0006 (0.0216)	0.0095 (0.0203)	0.0271 (0.0223)	0.0355 * (0.0205)	0.0288 (0.0221)	0.0361 * (0.0204)
Living in a MSA with >1 million persons	-0.0229 * (0.0118)	-0.0272 ** (0.0108)	-0.0324 *** (0.0117)	-0.0387 ** (0.0107)	-0.0431 *** (0.0120)	-0.0483 *** (0.0108)	-0.0453 *** (0.0121)	-0.0502 *** (0.0108)
Living in a MSA with <1 million persons	-0.0097 (0.0106)	-0.0107 (0.0105)	-0.0150 (0.0107)	-0.0159 (0.0104)	-0.0217 ** (0.0106)	-0.0230 ** (0.0104)	-0.0220 ** (0.0106)	-0.0232 ** (0.0104)
Number of children aged <18 in household			-0.0588 *** (0.0046)	-0.0557 *** (0.0040)	-0.0546 *** (0.0047)	-0.0521 *** (0.0040)	-0.0547 *** (0.0047)	-0.0526 *** (0.0040)
Married			-0.0649 *** (0.0193)	-0.0403 *** (0.0113)	-0.0606 *** (0.0193)	-0.0446 *** (0.0113)	-0.0619 *** (0.0188)	-0.0483 *** (0.0113)
Widowed			-0.0981 ** (0.0404)	-0.0903 ** (0.0388)	-0.0879 ** (0.0398)	-0.0818 ** (0.0388)	-0.0852 ** (0.0396)	-0.0796 ** (0.0387)
Divorced or separated			0.0499 *** (0.0144)	0.0444 *** (0.0135)	0.0521 *** (0.0141)	0.0488 *** (0.0135)	0.0518 *** (0.0140)	0.0488 *** (0.0135)
Completed undergraduate/graduate study					0.1076 *** (0.0191)	0.1191 *** (0.0152)	0.0899 *** (0.0179)	0.0975 *** (0.0156)
Had some college education					0.0875 *** (0.0178)	0.0970 *** (0.0150)	0.0732 *** (0.0171)	0.0800 *** (0.0152)
Completed high school					0.0714 *** (0.0166)	0.0784 *** (0.0149)	0.0597 *** (0.0161)	0.0647 *** (0.0150)
Excellent health							0.1075 * (0.0631)	0.1301 ** (0.0574)
Very good health							0.1289 ** (0.0608)	0.1461 ** (0.0572)
Good health							0.0923 (0.0608)	0.1090 * (0.0573)
Fair health							0.0025 (0.0606)	0.0115 (0.0591)
Constant	0.7502 *** (0.0272)	0.7336 *** (0.0199)	0.8584 *** (0.0368)	0.8108 *** (0.0209)	0.7606 *** (0.0462)	0.7202 *** (0.0242)	0.6699 *** (0.0836)	0.6183 *** (0.0610)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-5: Employment (Full Time/Part Time) Last Week versus the  
 Number of Days Drinking Alcohol in the Last 12 Months: the Male Sample

Variables	Male (n=12,046)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		OLS		2SLS	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last 12 months	-0.00033 *** (0.00001)	-0.00004 * (0.00000)	-0.00022 * (0.00001)	-0.00002 (0.00000)	-0.00011 (0.00001)	-0.00002 (0.00000)	-0.00010 (0.00001)	-0.00001 (0.00000)		
Age between 30 and 34 years old	0.0170 ** (0.0067)	0.0184 *** (0.0067)	0.0081 (0.0067)	0.0085 (0.0067)	0.0075 (0.0067)	0.0077 (0.0067)	0.0084 (0.0067)	0.0086 (0.0067)		
Age between 35 and 49 years old	0.0120 ** (0.0058)	0.0119 ** (0.0058)	-0.0038 (0.0060)	-0.0046 (0.0060)	-0.0055 (0.0060)	-0.0059 (0.0060)	-0.0031 (0.0060)	-0.0034 (0.0060)		
White	0.0731 *** (0.0092)	0.0666 *** (0.0088)	0.0674 *** (0.0091)	0.0629 *** (0.0087)	0.0648 *** (0.0091)	0.0626 *** (0.0087)	0.0636 *** (0.0091)	0.0616 *** (0.0087)		
Black	0.0068 (0.0110)	0.0024 (0.0108)	0.0134 (0.0109)	0.0108 (0.0107)	0.0190 * (0.0109)	0.0178 * (0.0108)	0.0181 * (0.0109)	0.0170 (0.0108)		
Hispanic	0.0568 *** (0.0103)	0.0574 *** (0.0103)	0.0538 *** (0.0103)	0.0539 *** (0.0102)	0.0695 *** (0.0104)	0.0696 *** (0.0104)	0.0691 *** (0.0104)	0.0692 *** (0.0104)		
Living in a MSA with >1 million persons	0.0056 (0.0057)	0.0032 (0.0056)	0.0084 (0.0056)	0.0070 (0.0055)	-0.0002 (0.0057)	-0.0010 (0.0056)	-0.0015 (0.0057)	-0.0022 (0.0056)		
Living in a MSA with <1 million persons	0.0067 (0.0056)	0.0051 (0.0055)	0.0083 (0.0055)	0.0074 (0.0055)	0.0024 (0.0055)	0.0018 (0.0055)	0.0014 (0.0055)	0.0010 (0.0055)		
Number of children aged <18 in household			0.0004 (0.0022)	0.0013 (0.0022)	0.0020 (0.0022)	0.0025 (0.0022)	0.0019 (0.0022)	0.0023 (0.0022)		
Married			0.0590 *** (0.0060)	0.0612 *** (0.0058)	0.0579 *** (0.0059)	0.0590 *** (0.0058)	0.0572 *** (0.0059)	0.0581 *** (0.0058)		
Widowed			0.0239 (0.0328)	0.0249 (0.0327)	0.0274 (0.0326)	0.0279 (0.0326)	0.0290 (0.0326)	0.0295 (0.0326)		
Divorced or separated			0.0265 *** (0.0075)	0.0250 *** (0.0074)	0.0285 *** (0.0075)	0.0278 *** (0.0074)	0.0294 *** (0.0075)	0.0287 *** (0.0074)		
Completed undergraduate/graduate study					0.0570 *** (0.0073)	0.0572 *** (0.0073)	0.0480 *** (0.0075)	0.0481 *** (0.0075)		
Had some college education					0.0370 *** (0.0073)	0.0371 *** (0.0073)	0.0309 *** (0.0074)	0.0310 *** (0.0074)		
Completed high school					0.0259 *** (0.0070)	0.0257 *** (0.0069)	0.0208 *** (0.0070)	0.0206 *** (0.0070)		
Excellent health							0.1232 *** (0.0292)	0.1243 *** (0.0291)		
Very good health							0.1174 *** (0.0290)	0.1182 *** (0.0290)		
Good health							0.1047 *** (0.0291)	0.1056 *** (0.0291)		
Fair health							0.0851 *** (0.0303)	0.0861 *** (0.0303)		
Constant	0.8942 *** (0.0125)	0.8763 *** (0.0103)	0.8575 *** (0.0134)	0.8435 *** (0.0107)	0.8194 *** (0.0143)	0.8126 *** (0.0119)	0.7112 *** (0.0322)	0.7043 *** (0.0308)		

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-6: Employment (Full Time/Part Time) Last Week versus the  
 Number of Days Drinking Alcohol in the Last Month: the Male Sample

Variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last month	-0.00382 *** (0.0013)	-0.00041 (0.0003)	-0.00246 * (0.0013)	-0.00016 (0.0003)	-0.00127 (0.0013)	-0.00018 (0.0003)	-0.00113 (0.0013)	-0.00017 (0.0003)
Age between 30 and 34 years old	0.0184 *** (0.0067)	0.0185 *** (0.0067)	0.0090 (0.0067)	0.0085 (0.0067)	0.0079 (0.0067)	0.0077 (0.0067)	0.0088 (0.0067)	0.0086 (0.0067)
Age between 35 and 49 years old	0.0134 ** (0.0058)	0.0121 ** (0.0058)	-0.0030 (0.0061)	-0.0046 (0.0060)	-0.005113 (0.0060)	-0.005838 (0.0060)	-0.0027 (0.0060)	-0.0033 (0.0060)
White	0.0734 *** (0.0092)	0.0666 *** (0.0088)	0.0675 *** (0.0092)	0.0628 *** (0.0087)	0.0648 *** (0.0091)	0.0626 *** (0.0087)	0.0636 *** (0.0091)	0.0617 *** (0.0087)
Black	0.0044 (0.0109)	0.0021 (0.0108)	0.0118 (0.0108)	0.0107 (0.0107)	0.0183 * (0.0108)	0.0177 * (0.0108)	0.0175 (0.0108)	0.0170 (0.0108)
Hispanic	0.0547 *** (0.0104)	0.0571 *** (0.0103)	0.0524 *** (0.0103)	0.0538 *** (0.0102)	0.0689 *** (0.0104)	0.0695 *** (0.0104)	0.0686 *** (0.0104)	0.0691 *** (0.0104)
Living in a MSA with >1 million persons	0.0052 (0.0056)	0.0031 (0.0056)	0.0082 (0.0056)	0.0070 (0.0055)	-0.0005 (0.0057)	-0.0010 (0.0056)	-0.0017 (0.0057)	-0.0022 (0.0056)
Living in a MSA with <1 million persons	0.0069 (0.0056)	0.0051 (0.0055)	0.0084 (0.0055)	0.0074 (0.0055)	0.0023 (0.0055)	0.0018 (0.0055)	0.0014 (0.0055)	0.0010 (0.0055)
Number of children aged <18 in household			0.0005 (0.0022)	0.0013 (0.0022)	0.0021 (0.0022)	0.0025 (0.0022)	0.0019 (0.0022)	0.0023 (0.0022)
Married			0.0593 *** (0.0059)	0.0613 *** (0.0058)	0.0580 *** (0.0059)	0.0590 *** (0.0058)	0.0573 *** (0.0059)	0.0581 *** (0.0058)
Widowed			0.0239 (0.0328)	0.0250 (0.0327)	0.0275 (0.0326)	0.0280 (0.0326)	0.0291 (0.0326)	0.0295 (0.0326)
Divorced or separated			0.0264 *** (0.0075)	0.0249 *** (0.0074)	0.0285 *** (0.0075)	0.0278 *** (0.0074)	0.0293 *** (0.0075)	0.0287 *** (0.0074)
Completed undergraduate/graduate study					0.0576 *** (0.0073)	0.0573 *** (0.0073)	0.0485 *** (0.0075)	0.0482 *** (0.0075)
Had some college education					0.0373 *** (0.0073)	0.0371 *** (0.0073)	0.0311 *** (0.0074)	0.0310 *** (0.0074)
Completed high school					0.0259 *** (0.0070)	0.0257 *** (0.0069)	0.0208 *** (0.0070)	0.0206 *** (0.0070)
Excellent health							0.1237 *** (0.0291)	0.1244 *** (0.0291)
Very good health							0.1178 *** (0.0290)	0.1182 *** (0.0290)
Good health							0.1050 *** (0.0291)	0.1056 *** (0.0291)
Fair health							0.0857 *** (0.0303)	0.0861 *** (0.0303)
Constant	0.8904 *** (0.0117)	0.8757 *** (0.0103)	0.8546 *** (0.0125)	0.8431 *** (0.0106)	0.8177 *** (0.0134)	0.8124 *** (0.0119)	0.7093 *** (0.0316)	0.7041 *** (0.0308)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-7: Employment (Full Time/Part Time) Last Week versus the

Number of Days Drank 5+ Alcoholic Drinks in the Last Month: the Male Sample

Variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drank 5+ alcoholic drinks in the last month	-0.00616 *** (0.0021)	-0.00224 *** (0.0004)	-0.00413 * (0.0022)	-0.00166 *** (0.0004)	-0.00227 (0.0023)	-0.00127 *** (0.0004)	-0.00204 (0.0023)	-0.00116 *** (0.0004)
Age between 30 and 34 years old	0.0171 ** (0.0067)	0.0180 *** (0.0067)	0.0082 (0.0067)	0.0084 (0.0067)	0.0076 (0.0067)	0.0077 (0.0067)	0.0085 (0.0067)	0.0085 (0.0067)
Age between 35 and 49 years old	0.0084 (0.0059)	0.0106 * (0.0058)	-0.0060 (0.0060)	-0.0052 (0.0060)	-0.0066 (0.0060)	-0.0063 (0.0060)	-0.0041 (0.0060)	-0.0038 (0.0060)
White	0.0682 *** (0.0088)	0.0666 *** (0.0088)	0.0643 *** (0.0088)	0.0632 *** (0.0087)	0.0632 *** (0.0088)	0.0628 *** (0.0087)	0.0622 *** (0.0087)	0.0618 *** (0.0087)
Black	0.0016 (0.0108)	0.0018 (0.0108)	0.0097 (0.0108)	0.0102 (0.0107)	0.0166 (0.0108)	0.0170 (0.0108)	0.0159 (0.0108)	0.0163 (0.0108)
Hispanic	0.0565 *** (0.0103)	0.0571 *** (0.0103)	0.0535 *** (0.0102)	0.0538 *** (0.0102)	0.0684 *** (0.0105)	0.0689 *** (0.0104)	0.0681 *** (0.0105)	0.0686 *** (0.0104)
Living in a MSA with >1 million persons	0.0009 (0.0056)	0.0021 (0.0055)	0.0054 (0.0056)	0.0063 (0.0055)	-0.0013 (0.0056)	-0.0012 (0.0056)	-0.0025 (0.0056)	-0.0024 (0.0056)
Living in a MSA with <1 million persons	0.0045 (0.0055)	0.0048 (0.0055)	0.0069 (0.0055)	0.0071 (0.0055)	0.0020 (0.0055)	0.0019 (0.0055)	0.0011 (0.0055)	0.0010 (0.0055)
Number of children aged <18 in household			0.0011 (0.0022)	0.0013 (0.0022)	0.0023 (0.0022)	0.0024 (0.0022)	0.0021 (0.0022)	0.0022 (0.0022)
Married			0.0573 *** (0.0062)	0.0598 *** (0.0058)	0.0570 *** (0.0062)	0.0579 *** (0.0058)	0.0564 *** (0.0062)	0.0572 *** (0.0058)
Widowed			0.0246 (0.0327)	0.0249 (0.0327)	0.0276 (0.0326)	0.0278 (0.0326)	0.0292 (0.0326)	0.0294 (0.0325)
Divorced or separated			0.0260 *** (0.0075)	0.0253 *** (0.0074)	0.0280 *** (0.0074)	0.0279 *** (0.0074)	0.0289 *** (0.0074)	0.0288 *** (0.0074)
Completed undergraduate/graduate study				0.0536 *** (0.0082)		0.0552 *** (0.0073)	0.0453 *** (0.0082)	0.0465 *** (0.0075)
Had some college education				0.0353 *** (0.0073)		0.0361 *** (0.0073)	0.0296 *** (0.0076)	0.0302 *** (0.0074)
Completed high school				0.0250 *** (0.0070)		0.0253 *** (0.0069)	0.0201 *** (0.0070)	0.0203 *** (0.0070)
Excellent health							0.1221 *** (0.0292)	0.1231 *** (0.0291)
Very good health							0.1166 *** (0.0291)	0.1173 *** (0.0290)
Good health							0.1046 *** (0.0291)	0.1051 *** (0.0291)
Fair health							0.0853 *** (0.0303)	0.0857 *** (0.0303)
Constant	0.8887 *** (0.0115)	0.8792 *** (0.0103)	0.8543 *** (0.0124)	0.8471 *** (0.0106)	0.8196 *** (0.0144)	0.8161 *** (0.0119)	0.7119 *** (0.0324)	0.7081 *** (0.0308)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%

Appendix B-8: Working Full Time Last Week versus the Number of Days Drinking Alcohol in the Last 12 Months: the Male Sample

Variables	Male (n=12,046)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		OLS		2SLS	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last 12 months	-0.00056 *** (0.00002)	-0.00002 (0.00000)	-0.00036 ** (0.00002)	0.00002 (0.00000)	-0.00026 * (0.00002)	0.00003 (0.00000)	-0.00023 (0.00002)	0.00003 (0.00000)	-0.00023 (0.00002)	0.00003 (0.00000)
Age between 30 and 34 years old	0.0285 *** (0.0091)	0.0310 *** (0.0090)	0.0110 (0.0090)	0.0117 (0.0089)	0.0104 (0.0090)	0.0109 (0.0089)	0.0122 (0.0089)	0.0127 (0.0089)	0.0122 (0.0089)	0.0127 (0.0089)
Age between 35 and 49 years old	0.0360 *** (0.0078)	0.0359 *** (0.0077)	0.0047 (0.0080)	0.0033 (0.0080)	0.0029 (0.0080)	0.0019 (0.0080)	0.0078 (0.0080)	0.0069 (0.0079)	0.0078 (0.0080)	0.0069 (0.0079)
White	0.1032 *** (0.0124)	0.0912 *** (0.0118)	0.0924 *** (0.0122)	0.0840 *** (0.0116)	0.0897 *** (0.0122)	0.0834 *** (0.0116)	0.0877 *** (0.0121)	0.0820 *** (0.0116)	0.0877 *** (0.0121)	0.0820 *** (0.0116)
Black	0.0142 (0.0148)	0.0060 (0.0145)	0.0253 * (0.0146)	0.0204 (0.0143)	0.0304 ** (0.0146)	0.0269 * (0.0144)	0.0285 ** (0.0145)	0.0254 * (0.0143)	0.0285 ** (0.0145)	0.0254 * (0.0143)
Hispanic	0.0897 *** (0.0140)	0.0908 *** (0.0138)	0.0829 *** (0.0137)	0.0831 *** (0.0136)	0.0988 *** (0.0139)	0.0991 *** (0.0139)	0.0977 *** (0.0139)	0.0980 *** (0.0138)	0.0977 *** (0.0139)	0.0980 *** (0.0138)
Living in a MSA with >1 million persons	0.0063 (0.0076)	0.0018 (0.0074)	0.0124 * (0.0075)	0.0098 (0.0074)	0.0046 (0.0076)	0.0024 (0.0075)	0.0023 (0.0076)	0.0002 (0.0075)	0.0023 (0.0076)	0.0002 (0.0075)
Living in a MSA with <1 million persons	0.0068 (0.0075)	0.0038 (0.0073)	0.0103 (0.0074)	0.0086 (0.0073)	0.0050 (0.0074)	0.0035 (0.0073)	0.0032 (0.0074)	0.0018 (0.0073)	0.0032 (0.0074)	0.0018 (0.0073)
Number of children aged <18 in household			0.0027 (0.0030)	0.0044 (0.0029)	0.0043 (0.0030)	0.0056 * (0.0029)	0.0040 (0.0030)	0.0051 * (0.0029)	0.0040 (0.0030)	0.0051 * (0.0029)
Married			0.1073 *** (0.0080)	0.1114 *** (0.0077)	0.1061 *** (0.0079)	0.1092 *** (0.0077)	0.1047 *** (0.0079)	0.1075 *** (0.0077)	0.1047 *** (0.0079)	0.1075 *** (0.0077)
Widowed			0.0526 (0.0439)	0.0547 (0.0436)	0.0562 (0.0437)	0.0578 (0.0435)	0.0603 (0.0435)	0.0618 (0.0433)	0.0603 (0.0435)	0.0618 (0.0433)
Divorced or separated			0.0703 *** (0.0101)	0.0673 *** (0.0099)	0.0722 *** (0.0100)	0.0701 *** (0.0099)	0.0739 *** (0.0100)	0.0720 *** (0.0099)	0.0739 *** (0.0100)	0.0720 *** (0.0099)
Completed undergraduate/graduate study					0.0586 *** (0.0098)	0.0591 *** (0.0098)	0.0425 *** (0.0100)	0.0429 *** (0.0100)	0.0425 *** (0.0100)	0.0429 *** (0.0100)
Had some college education					0.0375 *** (0.0098)	0.0379 *** (0.0098)	0.0258 *** (0.0099)	0.0261 *** (0.0099)	0.0258 *** (0.0099)	0.0261 *** (0.0099)
Completed high school					0.0329 *** (0.0093)	0.0322 *** (0.0093)	0.0225 ** (0.0094)	0.0218 ** (0.0093)	0.0225 ** (0.0094)	0.0218 ** (0.0093)
Excellent health							0.3554 *** (0.0389)	0.3587 *** (0.0388)	0.3554 *** (0.0389)	0.3587 *** (0.0388)
Very good health							0.3511 *** (0.0387)	0.3534 *** (0.0386)	0.3511 *** (0.0387)	0.3534 *** (0.0386)
Good health							0.3352 *** (0.0388)	0.3378 *** (0.0387)	0.3352 *** (0.0388)	0.3378 *** (0.0387)
Fair health							0.2850 *** (0.0405)	0.2877 *** (0.0403)	0.2850 *** (0.0405)	0.2877 *** (0.0403)
Constant	0.8174 *** (0.0168)	0.7838 *** (0.0138)	0.7475 *** (0.0179)	0.7211 *** (0.0142)	0.7069 *** (0.0192)	0.6872 *** (0.0159)	0.7371 *** (0.0429)	0.3527 *** (0.0410)	0.7371 *** (0.0429)	0.3527 *** (0.0410)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-9: Working Full Time Last Week versus the Number  
of Days Drinking Alcohol in the Last Month: the Male Sample

Variables	Male (n=12,046)		Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
			OLS		2SLS		OLS		2SLS	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last month	-0.00656 *** (0.0018)	-0.00042 (0.0004)	-0.00414 ** (0.0018)	-0.00001 (0.0003)	-0.00301 * (0.0018)	-0.00002 (0.0003)	-0.00266 (0.0018)	0.00000 (0.0003)		
Age between 30 and 34 years old	0.0309 *** (0.0091)	0.0311 *** (0.0090)	0.0125 (0.0090)	0.0117 (0.0089)	0.0114 (0.0090)	0.0108 (0.0089)	0.0131 (0.0089)	0.0126 (0.0089)		
Age between 35 and 49 years old	0.0385 *** (0.0079)	0.0361 *** (0.0077)	0.0061 (0.0081)	0.0033 (0.0080)	0.0039 (0.0081)	0.0020 (0.0080)	0.0087 (0.0080)	0.0070 (0.0079)		
White	0.1040 *** (0.0124)	0.0917 *** (0.0118)	0.0929 *** (0.0122)	0.0845 *** (0.0116)	0.0901 *** (0.0122)	0.0840 *** (0.0116)	0.0880 *** (0.0121)	0.0826 *** (0.0116)		
Black	0.0103 (0.0147)	0.0061 (0.0144)	0.0229 (0.0144)	0.0207 (0.0143)	0.0288 ** (0.0145)	0.0272 * (0.0144)	0.0272 * (0.0144)	0.0257 * (0.0143)		
Hispanic	0.0861 *** (0.0140)	0.0905 *** (0.0138)	0.0805 *** (0.0138)	0.0831 *** (0.0136)	0.0974 *** (0.0139)	0.0991 *** (0.0139)	0.0965 *** (0.0139)	0.0979 *** (0.0138)		
Living in a MSA with >1 million persons	0.0058 (0.0076)	0.0019 (0.0074)	0.0121 (0.0075)	0.0100 (0.0074)	0.0041 (0.0076)	0.0026 (0.0075)	0.0018 (0.0076)	0.0005 (0.0075)		
Living in a MSA with <1 million persons	0.0072 (0.0075)	0.0040 (0.0073)	0.0106 (0.0074)	0.0087 (0.0073)	0.0050 (0.0074)	0.0037 (0.0073)	0.0032 (0.0074)	0.0020 (0.0073)		
Number of children aged <18 in household			0.0029 (0.0030)	0.0043 (0.0029)	0.0045 (0.0030)	0.0055 * (0.0029)	0.0041 (0.0029)	0.0050 * (0.0029)		
Married			0.1076 *** (0.0079)	0.1112 *** (0.0077)	0.1063 *** (0.0079)	0.1089 *** (0.0077)	0.1048 *** (0.0079)	0.1072 *** (0.0077)		
Widowed			0.0527 (0.0438)	0.0545 (0.0436)	0.0563 (0.0437)	0.0576 (0.0435)	0.0605 (0.0434)	0.0616 (0.0433)		
Divorced or separated			0.0701 *** (0.0100)	0.0675 *** (0.0099)	0.0722 *** (0.0100)	0.0703 *** (0.0099)	0.0739 *** (0.0100)	0.0722 *** (0.0099)		
Completed undergraduate/graduate study					0.0598 *** (0.0098)	0.0591 *** (0.0098)	0.0436 *** (0.0100)	0.0428 *** (0.0100)		
Had some college education					0.0381 *** (0.0098)	0.0378 *** (0.0098)	0.0263 *** (0.0099)	0.0260 *** (0.0099)		
Completed high school					0.0329 *** (0.0093)	0.0323 *** (0.0093)	0.0224 ** (0.0093)	0.0219 ** (0.0093)		
Excellent health							0.3564 *** (0.0389)	0.3584 *** (0.0388)		
Very good health							0.3519 *** (0.0387)	0.3532 *** (0.0386)		
Good health							0.3357 *** (0.0388)	0.3375 *** (0.0387)		
Fair health							0.2861 *** (0.0404)	0.2874 *** (0.0403)		
Constant	0.8113 *** (0.0158)	0.7847 *** (0.0138)	0.7434 *** (0.0167)	0.7227 *** (0.0142)	0.7034 *** (0.0180)	0.6890 *** (0.0159)	0.3693 *** (0.0422)	0.3549 *** (0.0410)		

Standard errors are in parentheses.  
\*\*\*Statistically significant at 1%  
\*\*Statistically significant at 5%  
\*Statistically significant at 10%

Appendix B-10: Working Full Time Last Week versus the Number of Days

Drank 5+ Alcoholic Drinks in the Last Month: the Male Sample

Variables	Male (n=12,046)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drank 5+ alcoholic drinks in the last month	-0.01016 *** (0.0029)	-0.0237 *** (0.0006)	-0.00648 ** (0.0029)	-0.00140 ** (0.0006)	-0.00497 (0.0031)	-0.00102 * (0.0006)	-0.00435 (0.0031)	-0.00084 (0.0006)
Age between 30 and 34 years old	0.0288 *** (0.0090)	0.0306 *** (0.0089)	0.0112 (0.0090)	0.0116 (0.0089)	0.0106 (0.0090)	0.0108 (0.0089)	0.0124 (0.0089)	0.0126 (0.0089)
Age between 35 and 49 years old	0.0302 *** (0.0079)	0.0346 *** (0.0077)	0.0012 (0.0080)	0.0029 (0.0080)	0.0005 (0.0080)	0.0017 (0.0080)	0.0055 (0.0080)	0.0067 (0.0079)
White	0.0948 *** (0.0119)	0.0918 *** (0.0117)	0.0873 *** (0.0117)	0.0851 *** (0.0116)	0.0860 *** (0.0117)	0.0844 *** (0.0116)	0.0845 *** (0.0117)	0.0830 *** (0.0116)
Black	0.0055 (0.0145)	0.0057 (0.0144)	0.0194 (0.0144)	0.0204 (0.0143)	0.0248 * (0.0145)	0.0267 * (0.0144)	0.0237 * (0.0144)	0.0253 * (0.0143)
Hispanic	0.0893 *** (0.0139)	0.0905 *** (0.0138)	0.0824 *** (0.0137)	0.0829 *** (0.0136)	0.0964 *** (0.0140)	0.0985 *** (0.0139)	0.0956 *** (0.0139)	0.0975 *** (0.0138)
Living in a MSA with >1 million persons	-0.0016 (0.0075)	0.0009 (0.0074)	0.0075 (0.0075)	0.0094 (0.0074)	0.0022 (0.0075)	0.0025 (0.0075)	0.0002 (0.0075)	0.0004 (0.0075)
Living in a MSA with <1 million persons	0.0031 (0.0074)	0.0036 (0.0073)	0.0081 (0.0073)	0.0086 (0.0073)	0.0041 (0.0073)	0.0038 (0.0073)	0.0025 (0.0073)	0.0021 (0.0073)
Number of children aged <18 in household			0.0038 (0.0029)	0.0042 (0.0029)	0.0050 * (0.0029)	0.0054 * (0.0029)	0.0046 (0.0029)	0.0049 * (0.0029)
Married			0.1046 *** (0.0083)	0.1098 *** (0.0077)	0.1043 *** (0.0083)	0.1080 *** (0.0077)	0.1031 *** (0.0082)	0.1064 *** (0.0077)
Widowed			0.0539 (0.0437)	0.0544 (0.0436)	0.0566 (0.0436)	0.0574 (0.0435)	0.0607 (0.0434)	0.0615 (0.0433)
Divorced or separated			0.0693 *** (0.0100)	0.0679 *** (0.0099)	0.0711 *** (0.0100)	0.0704 *** (0.0099)	0.0729 *** (0.0099)	0.0723 *** (0.0099)
Completed undergraduate/graduate study					0.0512 *** (0.0110)	0.0575 *** (0.0098)	0.0367 *** (0.0109)	0.0416 *** (0.0100)
Had some college education					0.0339 *** (0.0101)	0.0370 *** (0.0098)	0.0231 ** (0.0101)	0.0255 *** (0.0099)
Completed high school					0.0308 *** (0.0093)	0.0320 *** (0.0093)	0.0210 ** (0.0093)	0.0217 ** (0.0093)
Excellent health							0.3533 *** (0.0390)	0.3574 *** (0.0388)
Very good health							0.3494 *** (0.0387)	0.3524 *** (0.0386)
Good health							0.3350 *** (0.0388)	0.3370 *** (0.0387)
Fair health							0.2854 *** (0.0404)	0.2870 *** (0.0403)
Constant	0.8073 *** (0.0154)	0.7886 *** (0.0138)	0.7416 *** (0.0165)	0.7268 *** (0.0142)	0.70651 *** (0.0193)	0.6925 *** (0.0159)	0.70651 *** (0.0431)	0.3585 *** (0.0410)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-11: Employment (Full Time/Part Time) Last Week versus the

Number of Days Drinking Alcohol in the Last 12 Months: the Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last 12 months	-0.00102 *** (0.00002)	-0.00009 *** (0.00000)	-0.00099 *** (0.00002)	-0.00007 ** (0.00000)	-0.00073 *** (0.00002)	-0.00008 ** (0.00000)	-0.00069 *** (0.00002)	-0.00009 *** (0.00000)
Age between 30 and 34 years old	-0.0021 (0.0077)	0.0006 (0.0074)	-0.0041 (0.0078)	-0.0043 (0.0075)	-0.0029 (0.0076)	-0.0031 (0.0075)	-0.0011 (0.0075)	-0.0014 (0.0074)
Age between 35 and 49 years old	0.0111 * (0.0066)	0.0086 (0.0063)	0.0082 (0.0069)	0.0034 (0.0066)	0.0110 (0.0068)	0.0075 (0.0065)	0.0153 ** (0.0067)	0.0117 * (0.0065)
White	0.0504 *** (0.0107)	0.0352 *** (0.0096)	0.0481 *** (0.0108)	0.0323 *** (0.0096)	0.0429 *** (0.0105)	0.0316 *** (0.0095)	0.0343 *** (0.0104)	0.0244 ** (0.0095)
Black	-0.0056 (0.0117)	-0.0050 (0.0113)	-0.0020 (0.0117)	-0.0003 (0.0113)	0.0053 (0.0115)	0.0059 (0.0113)	0.0036 (0.0114)	0.0043 (0.0112)
Hispanic	-0.0146 (0.0121)	-0.0072 (0.0116)	-0.0146 (0.0121)	-0.0091 (0.0116)	0.0119 (0.0119)	0.0152 (0.0116)	0.0116 (0.0118)	0.0148 (0.0116)
Living in a MSA with >1 million persons	-0.0021 (0.0068)	-0.0123 ** (0.0061)	-0.0015 (0.0067)	-0.0100 (0.0061)	-0.0134 ** (0.0065)	-0.0188 *** (0.0061)	-0.0156 ** (0.0065)	-0.0205 *** (0.0061)
Living in a MSA with <1 million persons	0.0023 (0.0062)	-0.0021 (0.0059)	0.0027 (0.0062)	-0.0010 (0.0059)	-0.0052 (0.0061)	-0.0074 (0.0059)	-0.0056 (0.0060)	-0.0076 (0.0059)
Number of children aged <18 in household			-0.0016 (0.0026)	0.0023 (0.0023)	0.0030 (0.0025)	0.0056 ** (0.0023)	0.0025 (0.0025)	0.0050 ** (0.0023)
Married			0.0192 *** (0.0074)	0.0310 *** (0.0064)	0.0179 ** (0.0072)	0.0262 *** (0.0064)	0.0146 ** (0.0072)	0.0226 *** (0.0064)
Widowed			-0.0541 ** (0.0231)	-0.0438 ** (0.0222)	-0.0425 * (0.0226)	-0.0358 (0.0220)	-0.0409 * (0.0224)	-0.0348 (0.0220)
Divorced or separated			0.0091 (0.0080)	0.0121 (0.0077)	0.0139 * (0.0079)	0.0156 ** (0.0077)	0.0140 * (0.0078)	0.0155 ** (0.0077)
Completed undergraduate/graduate study					0.1116 *** (0.0089)	0.1088 *** (0.0087)	0.0917 *** (0.0090)	0.0903 *** (0.0088)
Had some college education					0.0992 *** (0.0087)	0.0996 *** (0.0086)	0.0851 *** (0.0088)	0.0863 *** (0.0086)
Completed high school					0.0638 *** (0.0086)	0.0647 *** (0.0085)	0.0530 *** (0.0087)	0.0544 *** (0.0085)
Excellent health							0.0853 ** (0.0335)	0.0724 ** (0.0326)
Very good health							0.0768 ** (0.0333)	0.0640 ** (0.0325)
Good health							0.0489 (0.0332)	0.0407 (0.0326)
Fair health							-0.0145 (0.0344)	-0.0256 (0.0336)
Constant	0.9423 *** (0.0138)	0.9131 *** (0.0113)	0.9331 *** (0.0162)	0.8939 *** (0.0120)	0.8376 *** (0.0171)	0.8107 *** (0.0138)	0.7891 *** (0.0356)	0.7743 *** (0.0346)

Standard errors are in parentheses.

\*\*\*Statistically significant at 1%

\*\*Statistically significant at 5%

\*Statistically significant at 10%



Appendix B-12: Employment (Full Time/Part Time) Last Week versus the  
 Number of Days Drinking Alcohol in the Last Month: the Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last month	-0.01208 *** (0.0028)	-0.00093 ** (0.0004)	-0.01164 *** (0.0029)	-0.00075 * (0.0004)	-0.00842 *** (0.0027)	-0.00097 ** (0.0004)	-0.00803 *** (0.0027)	-0.00106 *** (0.0004)
Age between 30 and 34 years old	0.0003 (0.0077)	0.0008 (0.0074)	-0.0024 (0.0078)	-0.0042 (0.0075)	-0.0017 (0.0076)	-0.0029 (0.0075)	0.0001 (0.0075)	-0.0012 (0.0074)
Age between 35 and 49 years old	0.0144 ** (0.0067)	0.0089 (0.0063)	0.0105 (0.0070)	0.0036 (0.0066)	0.0128 * (0.0069)	0.0077 (0.0065)	0.0170 ** (0.0069)	0.0120 * (0.0065)
White	0.0523 *** (0.0108)	0.0352 *** (0.0096)	0.0496 *** (0.0109)	0.0323 *** (0.0096)	0.0439 *** (0.0106)	0.0318 *** (0.0096)	0.0354 *** (0.0105)	0.0247 *** (0.0095)
Black	-0.0073 (0.0117)	-0.0051 (0.0113)	-0.0029 (0.0117)	-0.0003 (0.0113)	0.0051 (0.0114)	0.0059 (0.0113)	0.0035 (0.0114)	0.0043 (0.0112)
Hispanic	-0.0135 (0.0121)	-0.0070 (0.0116)	-0.0135 (0.0120)	-0.0090 (0.0116)	0.0136 (0.0118)	0.0153 (0.0116)	0.0132 (0.0118)	0.0150 (0.0116)
Living in a MSA with >1 million persons	-0.0002 (0.0070)	-0.0123 ** (0.0061)	0.0006 (0.0069)	-0.0099 (0.0061)	-0.0125 * (0.0066)	-0.0187 *** (0.0061)	-0.0147 ** (0.0066)	-0.0203 *** (0.0061)
Living in a MSA with <1 million persons	0.0046 (0.0063)	-0.0020 (0.0059)	0.0050 (0.0063)	-0.0009 (0.0059)	-0.0039 (0.0061)	-0.0073 (0.0059)	-0.0043 (0.0061)	-0.0075 (0.0059)
Number of children aged <18 in household			-0.0017 (0.0026)	0.0024 (0.0023)	0.0031 (0.0025)	0.0056 ** (0.0023)	0.0026 (0.0025)	0.0050 ** (0.0023)
Married			0.0235 *** (0.0070)	0.0313 *** (0.0064)	0.0210 *** (0.0068)	0.0265 *** (0.0064)	0.0176 *** (0.0068)	0.0229 *** (0.0064)
Widowed			-0.0493 ** (0.0230)	-0.0434 * (0.0222)	-0.0385 * (0.0224)	-0.0354 * (0.0220)	-0.0372 * (0.0223)	-0.0343 (0.0220)
Divorced or separated			0.0116 (0.0080)	0.0122 (0.0077)	0.0159 ** (0.0078)	0.0158 ** (0.0077)	0.0160 ** (0.0078)	0.0157 ** (0.0077)
Completed undergraduate/graduate study					0.1152 *** (0.0091)	0.1093 *** (0.0087)	0.0951 *** (0.0091)	0.0908 *** (0.0089)
Had some college education					0.1009 *** (0.0087)	0.0998 *** (0.0086)	0.0868 *** (0.0087)	0.0865 *** (0.0086)
Completed high school					0.0636 *** (0.0086)	0.0647 *** (0.0085)	0.0528 *** (0.0087)	0.0544 *** (0.0085)
Excellent health							0.0787 ** (0.0331)	0.0717 ** (0.0326)
Very good health							0.0696 ** (0.0330)	0.0631 * (0.0325)
Good health							0.0415 (0.0330)	0.0398 (0.0326)
Fair health							-0.0207 (0.0341)	-0.0263 (0.0336)
Constant	0.9309 *** (0.0126)	0.9119 *** (0.0113)	0.9196 *** (0.0142)	0.8928 *** (0.0120)	0.8257 *** (0.0152)	0.8096 *** (0.0138)	0.7847 *** (0.0353)	0.7739 *** (0.0346)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-13: Employment (Full Time/Part Time) Last Week versus the

Number of Days Drank 5+ Alcoholic Drinks in the Last Month: the Female Sample

Variables	Female (n=11,779)			
	Model 1 (Total Effect)		Model 2	
	2SLS	OLS	2SLS	OLS
Number of days drank 5+ alcohol drinks in the last month	-0.02724 *** (0.0063)	-0.0436 *** (0.0009)	-0.02638 *** (0.0064)	-0.00382 *** (0.0009)
Age between 30 and 34 years old	-0.0038 (0.0077)	0.0001 (0.0074)	-0.0065 (0.0077)	-0.0047 (0.0075)
Age between 35 and 49 years old	0.0032 (0.0066)	0.0076 (0.0063)	0.0000 (0.0068)	0.0026 (0.0066)
White	0.0367 *** (0.0099)	0.0342 *** (0.0096)	0.0348 *** (0.0099)	0.0316 *** (0.0096)
Black	-0.0093 (0.0116)	-0.0056 (0.0113)	-0.0065 (0.0117)	-0.0011 (0.0113)
Hispanic	-0.0120 (0.0119)	-0.0074 (0.0116)	-0.0130 (0.0119)	-0.0093 (0.0116)
Living in a MSA with >1 million persons	-0.0137 ** (0.0062)	-0.0134 ** (0.0061)	-0.0123 * (0.0063)	-0.0109 * (0.0061)
Living in a MSA with <1 million persons	-0.0044 (0.0061)	-0.0028 (0.0059)	-0.0036 (0.0061)	-0.0016 (0.0059)
Number of children aged <18 in household			0.0006 (0.0024)	0.0024 (0.0023)
Married			0.0184 ** (0.0074)	0.0299 *** (0.0064)
Widowed			-0.0414 * (0.0228)	-0.0428 * (0.0222)
Divorced or separated			0.0120 (0.0079)	0.0123 (0.0077)
Completed undergraduate/graduate study			0.0959 *** (0.0097)	0.1066 *** (0.0087)
Had some college education			0.0917 *** (0.0091)	0.0984 *** (0.0086)
Completed high school			0.0599 *** (0.0088)	0.0641 *** (0.0085)
Excellent health				0.0587 * (0.0333)
Very good health				0.0536 (0.0331)
Good health				0.0312 (0.0331)
Fair health				-0.0312 (0.0341)
Constant	0.9347 *** (0.0128)	0.9142 *** (0.0113)	0.9234 *** (0.0146)	0.8956 *** (0.0120)
				0.8124 *** (0.0138)
				0.0689 ** (0.0326)
				0.0610 * (0.0325)
				0.0383 (0.0326)
				-0.0277 (0.0331)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)
				-0.0312 (0.0341)
				0.8113 *** (0.0336)
				0.0689 ** (0.0347)
				0.0887 *** (0.0089)
				0.0855 *** (0.0086)
				0.0506 *** (0.0085)
				0.0587 * (0.0333)
				0.0536 (0.0331)
				0.0312 (0.0331)

Appendix B-14: Working Full Time Last Week versus the Number of Days Drinking Alcohol in the Last 12 Months: the Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last 12 months	-0.00041 (0.0004)	0.00005 (0.0001)	-0.00072 * (0.0004)	-0.00005 (0.0001)	-0.00046 (0.0004)	-0.00005 (0.0001)	-0.00040 (0.0004)	-0.00006 (0.0001)
Age between 30 and 34 years old	-0.0043 (0.0132)	-0.0030 (0.0131)	0.0186 (0.0132)	0.0184 (0.0131)	0.0195 (0.0131)	0.0194 (0.0131)	0.0211 (0.0131)	0.0210 (0.0131)
Age between 35 and 49 years old	0.0165 (0.0113)	0.0153 (0.0112)	0.0242 ** (0.0117)	0.0207 * (0.0115)	0.0267 ** (0.0117)	0.0245 ** (0.0115)	0.0314 *** (0.0117)	0.0293 ** (0.0115)
White	-0.0044 (0.0183)	-0.0118 (0.0170)	0.0040 (0.0184)	-0.0075 (0.0168)	-0.0013 (0.0182)	-0.0084 (0.0168)	-0.0115 (0.0181)	-0.0171 (0.0168)
Black	0.0725 *** (0.0200)	0.0728 *** (0.0199)	0.0748 *** (0.0199)	0.0761 *** (0.0198)	0.0828 *** (0.0199)	0.0832 *** (0.0198)	0.0808 *** (0.0198)	0.0812 *** (0.0198)
Hispanic	-0.0140 (0.0207)	-0.0103 (0.0204)	0.0053 (0.0205)	0.0093 (0.0203)	0.0332 (0.0206)	0.0353 * (0.0205)	0.0339 * (0.0206)	0.0357 * (0.0204)
Living in a MSA with >1 million persons	-0.0223 * (0.0117)	-0.0273 ** (0.0108)	-0.0322 *** (0.0114)	-0.0384 *** (0.0107)	-0.0444 *** (0.0113)	-0.0478 *** (0.0108)	-0.0469 *** (0.0113)	-0.0496 *** (0.0108)
Living in a MSA with <1 million persons	-0.0086 (0.0107)	-0.0108 (0.0105)	-0.0131 (0.0106)	-0.0158 (0.0104)	-0.0214 ** (0.0105)	-0.0228 ** (0.0104)	-0.0218 ** (0.0105)	-0.0230 ** (0.0104)
Number of children aged <18 in household			-0.0587 *** (0.0044)	-0.0558 *** (0.0040)	-0.0539 *** (0.0043)	-0.0523 *** (0.0040)	-0.0543 *** (0.0043)	-0.0529 *** (0.0040)
Married			-0.0491 *** (0.0125)	-0.0405 *** (0.0113)	-0.0505 *** (0.0124)	-0.0453 *** (0.0113)	-0.0537 *** (0.0125)	-0.0492 *** (0.0113)
Widowed			-0.0982 ** (0.0393)	-0.0907 ** (0.0388)	-0.0866 ** (0.0391)	-0.0824 ** (0.0388)	-0.0837 ** (0.0389)	-0.0803 ** (0.0387)
Divorced or separated			0.0420 *** (0.0137)	0.0442 *** (0.0135)	0.0476 *** (0.0136)	0.0487 *** (0.0135)	0.0479 *** (0.0136)	0.0487 *** (0.0135)
Completed undergraduate/graduate study					0.1211 *** (0.0154)	0.1194 *** (0.0152)	0.0984 *** (0.0156)	0.0976 *** (0.0156)
Had some college education					0.0968 *** (0.0151)	0.0970 *** (0.0150)	0.0791 *** (0.0152)	0.0798 *** (0.0152)
Completed high school					0.0778 *** (0.0150)	0.0783 *** (0.0149)	0.0637 *** (0.0150)	0.0645 *** (0.0150)
Excellent health							0.1385 ** (0.0581)	0.1312 ** (0.0573)
Very good health							0.1545 *** (0.0579)	0.1473 ** (0.0572)
Good health							0.1143 ** (0.0577)	0.1097 * (0.0573)
Fair health							0.0188 (0.0597)	0.0125 (0.0591)
Constant	0.7478 *** (0.0237)	0.7335 *** (0.0200)	0.8406 *** (0.0275)	0.8120 *** (0.0210)	0.7390 *** (0.0296)	0.7222 *** (0.0243)	0.6287 *** (0.0618)	0.6204 *** (0.0610)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-15: Working Full Time Last Week versus the Number of Days Drinking Alcohol in the Last Month: The Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drinking alcohol in the last month	-0.00472 (0.0048)	0.00053 (0.0007)	-0.00833 * (0.0049)	-0.00057 (0.0007)	-0.00529 (0.0048)	-0.00080 (0.0007)	-0.00465 (0.0047)	-0.00090 (0.0007)
Age between 30 and 34 years old	-0.0034 (0.0132)	-0.0031 (0.0131)	0.0197 (0.0132)	0.0184 (0.0131)	0.0203 (0.0131)	0.0195 (0.0131)	0.0218 * (0.0131)	0.0211 (0.0131)
Age between 35 and 49 years old	0.0178 (0.0115)	0.0152 (0.0112)	0.0257 ** (0.0119)	0.0208 * (0.0115)	0.0279 ** (0.0119)	0.0248 ** (0.0115)	0.0323 *** (0.0120)	0.0296 *** (0.0115)
White	-0.0037 (0.0186)	-0.0118 (0.0170)	0.0050 (0.0186)	-0.0073 (0.0168)	-0.0007 (0.0185)	-0.0080 (0.0168)	-0.0110 (0.0183)	-0.0167 (0.0168)
Black	0.0718 *** (0.0200)	0.0729 *** (0.0199)	0.0742 *** (0.0199)	0.0760 *** (0.0198)	0.0827 *** (0.0199)	0.0832 *** (0.0198)	0.0808 *** (0.0198)	0.0812 *** (0.0198)
Hispanic	-0.0134 (0.0207)	-0.0104 (0.0204)	0.0061 (0.0205)	0.0094 (0.0203)	0.0343 * (0.0205)	0.0354 * (0.0205)	0.0348 * (0.0205)	0.0358 * (0.0204)
Living in a MSA with >1 million persons	-0.0217 * (0.0120)	-0.0274 ** (0.0108)	-0.0307 *** (0.0117)	-0.0382 *** (0.0107)	-0.0439 *** (0.0115)	-0.0476 *** (0.0108)	-0.0464 *** (0.0114)	-0.0494 *** (0.0108)
Living in a MSA with <1 million persons	-0.0078 (0.0109)	-0.0109 (0.0105)	-0.0115 (0.0107)	-0.0157 (0.0104)	-0.0206 * (0.0106)	-0.0227 ** (0.0104)	-0.0211 ** (0.0106)	-0.0228 ** (0.0104)
Number of children aged <18 in household			-0.0587 *** (0.0044)	-0.0558 *** (0.0040)	-0.0539 *** (0.0043)	-0.0524 *** (0.0040)	-0.0542 *** (0.0043)	-0.0529 *** (0.0040)
Married			-0.0459 *** (0.0119)	-0.0403 *** (0.0113)	-0.0485 *** (0.0118)	-0.0452 *** (0.0113)	-0.0520 *** (0.0118)	-0.0491 *** (0.0112)
Widowed			-0.0947 ** (0.0391)	-0.0905 ** (0.0388)	-0.0840 ** (0.0389)	-0.0822 ** (0.0388)	-0.0815 ** (0.0388)	-0.0800 ** (0.0387)
Divorced or separated			0.0438 *** (0.0136)	0.0443 *** (0.0135)	0.0489 *** (0.0136)	0.0488 *** (0.0135)	0.0490 *** (0.0135)	0.0489 *** (0.0135)
Completed undergraduate/graduate study				0.1234 *** (0.0157)	0.1198 *** (0.0157)	0.1198 *** (0.0152)	0.1003 *** (0.0159)	0.0980 *** (0.0156)
Had some college education				0.0979 *** (0.0151)	0.0979 *** (0.0151)	0.0972 *** (0.0150)	0.0801 *** (0.0152)	0.0800 *** (0.0152)
Completed high school				0.0776 *** (0.0150)	0.0776 *** (0.0150)	0.0783 *** (0.0149)	0.0636 *** (0.0150)	0.0644 *** (0.0150)
Excellent health							0.1346 ** (0.0576)	0.1308 ** (0.0573)
Very good health							0.1503 *** (0.0574)	0.1468 ** (0.0572)
Good health							0.1100 * (0.0574)	0.1091 * (0.0573)
Fair health							0.0151 (0.0593)	0.0121 (0.0591)
Constant	0.7430 *** (0.0216)	0.7341 *** (0.0199)	0.8306 *** (0.0242)	0.8115 *** (0.0209)	0.7315 *** (0.0263)	0.7218 *** (0.0242)	0.6261 *** (0.0615)	0.6203 *** (0.0610)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix B-16: Working Full Time Last Week versus the Number of Days Drank 5+ Alcoholic Drinks in the Last Month: the Female Sample

Variables	Female (n=11,779)							
	Model 1 (Total Effect)		Model 2		Model 3		Model 4 (Direct Effect)	
	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of days drank 5+ alcohol drinks in the last month	-0.01379 (0.0109)	-0.00037 (0.0016)	-0.02044 * (0.0111)	-0.00263 * (0.0016)	-0.01374 (0.0114)	-0.00175 (0.0016)	-0.01244 (0.0114)	-0.00145 (0.0016)
Age between 30 and 34 years old	-0.0055 (0.0133)	-0.0032 (0.0131)	0.0167 (0.0132)	0.0181 (0.0131)	0.0182 (0.0132)	0.0192 (0.0131)	0.0198 (0.0131)	0.0208 (0.0131)
Age between 35 and 49 years old	0.0128 (0.0114)	0.0154 (0.0112)	0.0181 (0.0116)	0.0201 * (0.0115)	0.0223 * (0.0116)	0.0240 ** (0.0115)	0.0270 ** (0.0116)	0.0287 ** (0.0115)
White	-0.0095 (0.0171)	-0.0109 (0.0170)	-0.0054 (0.0169)	-0.0079 (0.0168)	-0.0074 (0.0169)	-0.0090 (0.0168)	-0.0160 (0.0169)	-0.0179 (0.0168)
Black	0.0705 *** (0.0201)	0.0727 *** (0.0199)	0.0713 *** (0.0201)	0.0755 *** (0.0198)	0.0791 *** (0.0202)	0.0827 *** (0.0198)	0.0777 *** (0.0201)	0.0809 *** (0.0198)
Hispanic	-0.0135 (0.0206)	-0.0108 (0.0204)	0.0063 (0.0204)	0.0092 (0.0202)	0.0314 (0.0208)	0.0350 * (0.0205)	0.0323 (0.0207)	0.0356 * (0.0204)
Living in a MSA with >1 million persons	-0.0270 ** (0.0108)	-0.0268 ** (0.0108)	-0.0400 *** (0.0108)	-0.0389 *** (0.0107)	-0.0482 *** (0.0108)	-0.0483 *** (0.0108)	-0.0499 *** (0.0108)	-0.0501 *** (0.0108)
Living in a MSA with <1 million persons	-0.0115 (0.0105)	-0.0106 (0.0105)	-0.0178 * (0.0105)	-0.0162 (0.0104)	-0.0236 ** (0.0104)	-0.0231 ** (0.0104)	-0.0237 ** (0.0104)	-0.0233 ** (0.0104)
Number of children aged <18 in household			-0.0572 *** (0.0041)	-0.0558 *** (0.0040)	-0.0535 *** (0.0042)	-0.0523 *** (0.0040)	-0.0538 *** (0.0042)	-0.0528 *** (0.0040)
Married			-0.0503 *** (0.0126)	-0.0412 *** (0.0113)	-0.0513 *** (0.0126)	-0.0454 *** (0.0113)	-0.0543 *** (0.0125)	-0.0491 *** (0.0113)
Widowed			-0.0890 ** (0.0390)	-0.0900 ** (0.0388)	-0.0818 ** (0.0388)	-0.0818 ** (0.0388)	-0.0797 ** (0.0387)	-0.0797 ** (0.0387)
Divorced or separated			0.0441 *** (0.0136)	0.0443 *** (0.0135)	0.0481 *** (0.0136)	0.0487 *** (0.0135)	0.0483 *** (0.0135)	0.0488 *** (0.0135)
Completed undergraduate/graduate study					0.1105 *** (0.0169)	0.1181 *** (0.0153)	0.0906 *** (0.0168)	0.0967 *** (0.0156)
Had some college education					0.0916 *** (0.0157)	0.0963 *** (0.0150)	0.0756 *** (0.0157)	0.0794 *** (0.0152)
Completed high school					0.0750 *** (0.0152)	0.0780 *** (0.0149)	0.0620 *** (0.0152)	0.0643 *** (0.0150)
Excellent health							0.1222 ** (0.0579)	0.1290 ** (0.0573)
Very good health							0.1404 ** (0.0575)	0.1453 ** (0.0572)
Good health							0.1035 * (0.0577)	0.1082 * (0.0573)
Fair health								0.0111 (0.0591)
Constant	0.7473 *** (0.0222)	0.7353 *** (0.0200)	0.8352 *** (0.0250)	0.8133 *** (0.0209)	0.7425 *** (0.0306)	0.7229 *** (0.0243)	0.6442 *** (0.0653)	0.6219 *** (0.0610)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix C: Complete Second Stage Regression Results Using NELS:88

Appendix C-1: Current Employment (Full Time/Part Time) versus the  
Number of Occasions Drank Alcohol in the Last 30 Days: the Male Sample

Variables	Male (n=3,876)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank alcohol in the last 30 days	-0.0107 (0.0072)	0.0012 * (0.0006)	-0.0103 (0.0073)	0.0016 ** (0.0006)	-0.0114 (0.0071)	0.0017 *** (0.0006)
Age	0.3293 (0.6135)	0.1473 (0.5779)	0.3114 (0.6075)	0.1815 (0.5772)	0.2647 (0.6125)	0.1234 (0.5772)
Age squared	-0.0061 (0.0115)	-0.0026 (0.0108)	-0.0058 (0.0114)	-0.0033 (0.0108)	-0.0049 (0.0115)	-0.0022 (0.0108)
White	0.0296 * (0.0178)	0.0138 (0.0144)	0.0276 (0.0181)	0.0110 (0.0145)	0.0318 * (0.0179)	0.0144 (0.0145)
Black	-0.0315 (0.0225)	-0.0315 (0.0215)	-0.0297 (0.0225)	-0.0294 (0.0216)	-0.0281 (0.0227)	-0.0275 (0.0215)
Native American or Alaska Native	0.0098 (0.0477)	0.0042 (0.0455)	0.0068 (0.0488)	-0.0102 (0.0457)	0.0076 (0.0491)	-0.0115 (0.0456)
Asian or Pacific Islander	-0.0911 *** (0.0221)	-0.0917 *** (0.0211)	-0.0886 *** (0.0222)	-0.0854 *** (0.0212)	-0.0838 *** (0.0227)	-0.0785 *** (0.0213)
Household number of children/stepchildren			-0.0050 (0.0076)	0.0014 (0.0062)	-0.0072 (0.0075)	-0.0009 (0.0064)
Married			0.0212 (0.0163)	0.0409 *** (0.0106)	0.0176 (0.0161)	0.0391 *** (0.0106)
Cohabiting			-0.0682 (0.0505)	-0.0623 (0.0483)	-0.0662 (0.0509)	-0.0601 (0.0483)
Widowed			0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Separated			-0.0538 (0.0540)	-0.0519 (0.0517)	-0.0545 (0.0546)	-0.0539 (0.0518)
Divorced			0.0301 (0.0240)	0.0282 (0.0230)	0.0275 (0.0245)	0.0244 (0.0232)
Ph.D. or Professional Doctorate					0.0277 (0.0903)	0.0221 (0.0857)
Master degree					0.0746 (0.0615)	0.0660 (0.0583)
Bachelor degree					0.0148 (0.0295)	0.0022 (0.0272)
Had some college education					0.0554 * (0.0294)	0.0539 * (0.0279)
Completed high school					0.0343 (0.0279)	0.0259 (0.0261)
Constant	-3.4437 (8.1612)	-1.1525 (7.7019)	-3.2044 (8.0866)	-1.5869 (7.6918)	-2.6007 (8.1526)	-0.8280 (7.6894)

Standard errors are in parentheses.  
\*\*\*Statistically significant at 1%  
\*\*Statistically significant at 5%  
\*Statistically significant at 10%

Appendix C-2: Current Employment (Full Time/Part Time) versus the Number of Occasions Drank 5+ Alcoholic Drinks in a Row over the Last Two Weeks: the Male

Sample

Variables	Male (n=3,876)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks	-0.0320 (0.0208)	0.0055 ** (0.0025)	-0.0309 (0.0211)	0.0070 *** (0.0025)	-0.0363 * (0.0218)	0.0069 *** (0.0025)
Age	0.2825 (0.5990)	0.1461 (0.5779)	0.2834 (0.5964)	0.1800 (0.5771)	0.2486 (0.6019)	0.1213 (0.5772)
Age squared	-0.0052 (0.0112)	-0.0026 (0.0108)	-0.0052 (0.0112)	-0.0033 (0.0108)	-0.0046 (0.0113)	-0.0022 (0.0108)
White	0.0162 (0.0148)	0.0153 (0.0144)	0.0149 (0.0149)	0.0129 (0.0144)	0.0196 (0.0151)	0.0161 (0.0145)
Black	-0.0415 * (0.0231)	-0.0298 (0.0216)	-0.0396 * (0.0232)	-0.0271 (0.0216)	-0.0395 * (0.0235)	-0.0253 (0.0216)
Native American or Alaska Native	0.0093 (0.0469)	0.0040 (0.0455)	0.0028 (0.0475)	-0.0103 (0.0457)	0.0034 (0.0479)	-0.0114 (0.0456)
Asian or Pacific Islander	-0.1012 *** (0.0226)	-0.0900 *** (0.0212)	-0.0974 *** (0.0232)	-0.0832 *** (0.0212)	-0.0912 *** (0.0233)	-0.0769 *** (0.0214)
Household number of children/stepchildren			-0.0014 (0.0066)	0.0010 (0.0062)	-0.0050 (0.0069)	-0.0011 (0.0064)
Married			0.0230 (0.0150)	0.0417 *** (0.0106)	0.0182 (0.0154)	0.0397 *** (0.0106)
Cohabiting			-0.0680 (0.0498)	-0.0620 (0.0483)	-0.0674 (0.0502)	-0.0597 (0.0483)
Widowed			0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Separated			-0.0652 (0.0540)	-0.0492 (0.0517)	-0.0723 (0.0549)	-0.0505 (0.0518)
Divorced			0.0295 (0.0237)	0.0282 (0.0230)	0.0232 (0.0241)	0.0252 (0.0232)
Ph.D. or Professional Doctorate					0.0368 (0.0892)	0.0202 (0.0857)
Master degree					0.0577 (0.0607)	0.0689 (0.0583)
Bachelor degree					-0.0026 (0.0285)	0.0050 (0.0272)
Had some college education					0.0489 * (0.0291)	0.0551 ** (0.0279)
Completed high school					0.0293 (0.0271)	0.0265 (0.0261)
Constant	-2.8841 (7.9778)	-1.1324 (7.7008)	-2.8844 (7.9442)	-1.5623 (7.6905)	-2.4186 (8.0144)	-0.7986 (7.6892)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%



Appendix C-3: Currently Working Full Time versus the Number  
of Occasions Drank Alcohol in the Last 30 Days: the Male Sample

Variables	Male (n=3,876)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank alcohol in the last 30 days	-0.0044 (0.0092)	0.0012 (0.0008)	-0.0034 (0.0092)	0.0023 *** (0.0008)	-0.0035 (0.0090)	0.0023 *** (0.0008)
Age	-0.3876 (0.7840)	-0.4730 (0.7670)	-0.2489 (0.7709)	-0.3110 (0.7599)	-0.2884 (0.7719)	-0.3514 (0.7612)
Age squared	0.0075 (0.0147)	0.0091 (0.0144)	0.0047 (0.0145)	0.0059 (0.0143)	0.0055 (0.0145)	0.0067 (0.0143)
White	0.0434 * (0.0228)	0.0360 * (0.0191)	0.0405 * (0.0230)	0.0326 * (0.0190)	0.0407 * (0.0226)	0.0330 * (0.0191)
Black	-0.0187 (0.0288)	-0.0187 (0.0286)	-0.0111 (0.0285)	-0.0109 (0.0284)	-0.0100 (0.0286)	-0.0098 (0.0284)
Native American or Alaska Native	0.0457 (0.0609)	0.0431 (0.0604)	0.0111 (0.0619)	0.0029 (0.0601)	0.0113 (0.0619)	0.0028 (0.0602)
Asian or Pacific Islander	-0.0900 *** (0.0282)	-0.0903 *** (0.0281)	-0.0706 ** (0.0282)	-0.0691 ** (0.0279)	-0.0708 ** (0.0286)	-0.0685 ** (0.0282)
Household number of children/stepchildren				0.0125 (0.0096)	0.0130 (0.0095)	0.0159 * (0.0084)
Married			0.0897 *** (0.0207)	0.0992 *** (0.0139)	0.0889 *** (0.0203)	0.0985 *** (0.0140)
Cohabiting			0.0316 (0.0641)	0.0343 (0.0636)	0.0339 (0.0642)	0.0366 (0.0637)
Widowed			0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Separated			-0.0717 (0.0685)	-0.0708 (0.0681)	-0.0683 (0.0688)	-0.0680 (0.0684)
Divorced			0.0866 *** (0.0305)	0.0857 *** (0.0303)	0.0888 *** (0.0309)	0.0874 *** (0.0306)
Ph.D. or Professional Doctorate					0.1068 (0.1138)	0.1043 (0.1130)
Master degree					0.0408 (0.0776)	0.0369 (0.0769)
Bachelor degree					0.0188 (0.0371)	0.0132 (0.0359)
Had some college education					0.0342 (0.0371)	0.0335 (0.0369)
Completed high school					0.0179 (0.0352)	0.0141 (0.0345)
Constant	5.8825 -10.430	6.9569 -10.221	4.1013 -10.262	4.8738 -10.127	4.5936 -10.275	5.3844 -10.142

Standard errors are in parentheses.  
\*\*\*Statistically significant at 1%  
\*\*Statistically significant at 5%  
\*Statistically significant at 10%

Appendix C-4: Currently Working Full Time versus the Number of Occasions

Drank 5+ Alcoholic Drinks in a Row over the Last Two Weeks: the Male Sample

Variables	Male (n=3,876)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks	-0.0136 (0.0270)	0.0091 *** (0.0033)	-0.0107 (0.0272)	0.0134 *** (0.0033)	-0.0118 (0.0279)	0.0135 *** (0.0033)
Age	-0.4052 (0.7772)	-0.4879 (0.7665)	-0.2569 (0.7677)	-0.3225 (0.7591)	-0.2918 (0.7703)	-0.3662 (0.7604)
Age squared	0.0078 (0.0146)	0.0094 (0.0144)	0.0049 (0.0144)	0.0061 (0.0142)	0.0055 (0.0145)	0.0069 (0.0143)
White	0.0379 ** (0.0192)	0.0373 * (0.0191)	0.0364 * (0.0192)	0.0351 * (0.0190)	0.0370 * (0.0193)	0.0349 * (0.0191)
Black	-0.0230 (0.0300)	-0.0159 (0.0286)	-0.0145 (0.0299)	-0.0066 (0.0284)	-0.0137 (0.0300)	-0.0054 (0.0284)
Native American or Alaska Native	0.0456 (0.0609)	0.0424 (0.0604)	0.0099 (0.0612)	0.0015 (0.0601)	0.0102 (0.0613)	0.0015 (0.0601)
Asian or Pacific Islander	-0.0943 *** (0.0294)	-0.0875 *** (0.0281)	-0.0737 ** (0.0299)	-0.0646 ** (0.0279)	-0.0733 ** (0.0298)	-0.0650 ** (0.0281)
Household number of children/stepchildren			0.0136 (0.0084)	0.0152 * (0.0082)	0.0137 (0.0088)	0.0160 * (0.0084)
Married			0.0901 *** (0.0194)	0.1020 *** (0.0140)	0.0889 *** (0.0197)	0.1015 *** (0.0140)
Cohabiting			0.0315 (0.0641)	0.0353 (0.0635)	0.0334 (0.0643)	0.0379 (0.0636)
Widowed			0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Separated			-0.0757 (0.0695)	-0.0655 (0.0681)	-0.0740 (0.0702)	-0.0613 (0.0683)
Divorced			0.0864 *** (0.0305)	0.0856 *** (0.0302)	0.0874 *** (0.0308)	0.0886 *** (0.0306)
Ph.D. or Professional Doctorate					0.1098 (0.1142)	0.1001 (0.1129)
Master degree					0.0354 (0.0777)	0.0420 (0.0768)
Bachelor degree					0.0133 (0.0365)	0.0178 (0.0359)
Had some college education					0.0321 (0.0373)	0.0357 (0.0368)
Completed high school					0.0164 (0.0347)	0.0147 (0.0344)
Constant	6.0915 (10.352)	7.1532 (10.214)	4.1906 (10.227)	5.0295 (10.115)	4.6301 (10.258)	5.7880 (10.130)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix C-5: Current Employment (Full Time/Part Time) versus the  
Number of Occasions Drank Alcohol in the Last 30 Days: the Female Sample

Variables	Female (n=4,638)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank alcohol in the last 30 days	-0.0077 (0.0117)	0.0065 *** (0.0013)	-0.0013 (0.0115)	0.0013 (0.0013)	0.0008 (0.0111)	0.0013 (0.0013)
Age	1.8835 ** (0.8563)	1.9751 ** (0.8416)	1.7539 ** (0.8226)	1.7721 ** (0.8183)	1.4486 * (0.8232)	1.4518 * (0.8199)
Age squared	-0.0366 ** (0.0161)	-0.0381 ** (0.0158)	-0.0335 ** (0.0155)	-0.0338 ** (0.0154)	-0.0276 * (0.0155)	-0.0277 * (0.0154)
White	0.0467 ** (0.0232)	0.0285 (0.0175)	0.0102 (0.0215)	0.0072 (0.0171)	0.0038 (0.0204)	0.0033 (0.0172)
Black	0.0329 (0.0250)	0.0361 (0.0246)	0.0266 (0.0256)	0.0285 (0.0241)	0.0265 (0.0259)	0.0269 (0.0241)
Native American or Alaska Native	-0.0155 (0.0543)	-0.0173 (0.0535)	0.0098 (0.0521)	0.0093 (0.0521)	0.0065 (0.0520)	0.0064 (0.0520)
Asian or Pacific Islander	-0.0118 (0.0284)	-0.0248 (0.0259)	-0.0775 *** (0.0255)	-0.0780 *** (0.0254)	-0.0844 *** (0.0258)	-0.0844 *** (0.0257)
Household number of children/stepchildren			-0.0897 *** (0.0094)	-0.0880 *** (0.0059)	-0.0817 *** (0.0083)	-0.0815 *** (0.0063)
Married			-0.0416 (0.0257)	-0.0365 *** (0.0121)	-0.0399 (0.0245)	-0.0390 *** (0.0121)
Cohabiting			0.0002 (0.0624)	0.0034 (0.0608)	0.0022 (0.0620)	0.0027 (0.0607)
Widowed			0.3397 (0.3629)	0.3470 (0.3613)	0.3418 (0.3619)	0.3432 (0.3606)
Separated			0.0194 (0.0465)	0.0174 (0.0456)	0.0227 (0.0467)	0.0222 (0.0456)
Divorced			0.0254 (0.0282)	0.0277 (0.0263)	0.0314 (0.0274)	0.0318 (0.0264)
Ph.D. or Professional Doctorate					0.2187 ** (0.1064)	0.2188 ** (0.1064)
Master degree					0.2108 *** (0.0658)	0.2111 *** (0.0654)
Bachelor degree					0.1456 *** (0.0370)	0.1453 *** (0.0363)
Had some college education					0.1614 *** (0.0366)	0.1616 *** (0.0362)
Completed high school					0.1294 *** (0.0350)	0.1296 *** (0.0348)
Constant	-23.400 ** (11.389)	-24.800 ** (11.182)	-22.000 ** (10.937)	-22.300 ** (10.872)	-18.200 * (10.940)	-18.300 * (10.889)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix C-6: Current Employment (Full Time/Part Time) versus the Number of Occasions Drank 5+ Alcoholic Drinks in a Row over the Last Two Weeks: the Female Sample

Variables	Female (n=4,638)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks	-0.0271 (0.0541)	0.0219 *** (0.0063)	0.0065 (0.0530)	0.0059 (0.0062)	0.0158 (0.0533)	0.0065 (0.0062)
Age	1.9030 ** (0.8505)	1.9575 ** (0.8429)	1.7699 ** (0.8201)	1.7693 ** (0.8183)	1.4564 * (0.8213)	1.4485 * (0.8199)
Age squared	-0.0369 ** (0.0160)	-0.0378 ** (0.0159)	-0.0338 ** (0.0154)	-0.0338 ** (0.0154)	-0.0278 * (0.0155)	-0.0276 * (0.0154)
White	0.0390 ** (0.0181)	0.0350 ** (0.0174)	0.0082 (0.0175)	0.0083 (0.0170)	0.0034 (0.0176)	0.0042 (0.0171)
Black	0.0316 (0.0255)	0.0370 (0.0246)	0.0287 (0.0259)	0.0286 (0.0241)	0.0285 (0.0259)	0.0269 (0.0241)
Native American or Alaska Native	-0.0215 (0.0549)	-0.0124 (0.0536)	0.0107 (0.0530)	0.0106 (0.0521)	0.0095 (0.0529)	0.0078 (0.0520)
Asian or Pacific Islander	-0.0215 (0.0266)	-0.0167 (0.0260)	-0.0766 *** (0.0273)	-0.0767 *** (0.0255)	-0.0817 *** (0.0274)	-0.0834 *** (0.0258)
Household number of children/stepchildren			-0.0884 *** (0.0068)	-0.0884 *** (0.0058)	-0.0810 *** (0.0075)	-0.0817 *** (0.0063)
Married			-0.0371 * (0.0197)	-0.0372 *** (0.0120)	-0.0369 * (0.0198)	-0.0396 *** (0.0120)
Cohabiting			0.0023 (0.0609)	0.0023 (0.0608)	0.0024 (0.0608)	0.0017 (0.0607)
Widowed			0.3457 (0.3617)	0.3455 (0.3613)	0.3450 (0.3612)	0.3418 (0.3606)
Separated			0.0189 (0.0458)	0.0188 (0.0456)	0.0248 (0.0458)	0.0240 (0.0456)
Divorced			0.0270 (0.0265)	0.0270 (0.0263)	0.0321 (0.0267)	0.0314 (0.0264)
Ph.D. or Professional Doctorate					0.2173 ** (0.1065)	0.2180 ** (0.1064)
Master degree					0.2123 *** (0.0658)	0.2111 *** (0.0654)
Bachelor degree					0.1479 *** (0.0368)	0.1468 *** (0.0363)
Had some college education					0.1627 *** (0.0367)	0.1617 *** (0.0362)
Completed high school					0.1301 *** (0.0349)	0.1295 *** (0.0348)
Constant	-23.700 ** (11.305)	-24.500 ** (11.199)	-22.300 ** (10.899)	-22.300 ** (10.871)	-18.300 * (10.911)	-18.200 * (10.889)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

Appendix C-7: Currently Working Full Time versus the Number  
of Occasions Drank Alcohol in the Last 30 Days: the Female Sample

Variables	Female (n=4,638)			
	Model 1 (Total Effect)		Model 3	
	2SLS	OLS	2SLS	OLS
Number of occasions drank alcohol in the last 30 days	-0.0201 (0.0145)	0.0076 *** (0.0015)	-0.0140 (0.0140)	0.0014 (0.0016)
Age	2.2789 ** (1.0587)	2.4579 ** (1.0190)	2.1058 ** (1.0060)	2.2135 ** (0.9908)
Age squared	-0.0441 ** (0.0199)	-0.0472 ** (0.0192)	-0.0401 ** (0.0189)	-0.0353 * (0.0187)
White	0.0634 ** (0.0287)	0.0278 (0.0211)	0.0187 (0.0263)	0.0074 (0.0249)
Black	0.0568 * (0.0310)	0.0632 ** (0.0297)	0.0438 (0.0312)	0.0385 (0.0316)
Native American or Alaska Native	-0.0451 (0.0671)	-0.0486 (0.0648)	-0.0123 (0.0638)	-0.0147 (0.0635)
Asian or Pacific Islander	-0.0106 (0.0351)	-0.0361 (0.0314)	-0.0967 *** (0.0312)	-0.1142 *** (0.0314)
Household number of children/stepchildren			-0.1075 *** (0.0116)	-0.1042 *** (0.0101)
Married			-0.0389 *** (0.0314)	-0.0655 ** (0.0299)
Cohabiting			-0.0308 (0.0763)	-0.0271 (0.0757)
Widowed			0.5145 (0.4438)	0.4819 (0.4415)
Separated			0.0460 (0.0569)	0.0649 (0.0570)
Divorced			0.0337 (0.0345)	0.0469 (0.0334)
Ph.D. or Professional Doctorate				0.3107 ** (0.1298)
Master degree				0.1096 (0.0802)
Bachelor degree				0.1297 *** (0.0451)
Had some college education				0.1345 *** (0.0446)
Completed high school				0.0829 * (0.0427)
Constant	-28.700 ** (14.080)	-31.300 ** (13.538)	-26.800 ** (13.377)	-23.800 * (13.346)

Standard errors are in parentheses.  
\*\*\*Statistically significant at 1%  
\*\*Statistically significant at 5%  
\*Statistically significant at 10%

Appendix C-8: Currently Working Full Time versus the Number of Occasions

Drank 5+ Alcoholic Drinks in a Row over the Last Two Weeks: the Female Sample

Variables	Female (n=4,638)					
	Model 1 (Total Effect)		Model 2		Model 3	
	2SLS	OLS	2SLS	OLS	2SLS	OLS
Number of occasions drank 5+ alcoholic drinks in a row over the last two weeks	-0.0990 (0.0671)	0.0338 *** (0.0076)	-0.0623 (0.0648)	0.0153 ** (0.0075)	-0.0525 (0.0651)	0.0160 ** (0.0075)
Age	2.2986 ** (1.0553)	2.4464 ** (1.0195)	2.1392 ** (1.0040)	2.2197 ** (0.9904)	1.8927 * (1.0033)	1.9512 ** (0.9929)
Age squared	-0.0444 ** (0.0198)	-0.0470 ** (0.0192)	-0.0407 ** (0.0189)	-0.0421 ** (0.0186)	-0.0359 * (0.0189)	-0.0370 ** (0.0187)
White	0.0455 ** (0.0224)	0.0348 * (0.0211)	0.0073 (0.0214)	0.0017 (0.0206)	0.0001 (0.0215)	-0.0053 (0.0207)
Black	0.0504 (0.0316)	0.0652 ** (0.0298)	0.0429 (0.0317)	0.0568 * (0.0292)	0.0391 (0.0316)	0.0510 * (0.0292)
Native American or Alaska Native	-0.0659 (0.0681)	-0.0413 (0.0648)	-0.0262 (0.0648)	-0.0121 (0.0631)	-0.0263 (0.0646)	-0.0139 (0.0630)
Asian or Pacific Islander	-0.0388 (0.0331)	-0.0258 (0.0314)	-0.1109 *** (0.0334)	-0.0966 *** (0.0308)	-0.1225 *** (0.0335)	-0.1103 *** (0.0312)
Household number of children/stepchildren			-0.1125 *** (0.0083)	-0.1073 *** (0.0071)	-0.1026 *** (0.0091)	-0.0974 *** (0.0076)
Married			-0.0603 ** (0.0242)	-0.0371 ** (0.0145)	-0.0590 ** (0.0241)	-0.0386 *** (0.0145)
Cohabiting			-0.0184 (0.0746)	-0.0126 (0.0736)	-0.0178 (0.0743)	-0.0127 (0.0735)
Widowed			0.4891 (0.4428)	0.5159 (0.4373)	0.4950 (0.4411)	0.5189 (0.4367)
Separated			0.0421 (0.0561)	0.0483 (0.0552)	0.0499 (0.0559)	0.0558 (0.0552)
Divorced			0.0421 (0.0325)	0.0474 (0.0318)	0.0506 (0.0326)	0.0559 * (0.0319)
Ph.D. or Professional Doctorate					0.3141 ** (0.1300)	0.3093 ** (0.1288)
Master degree					0.1020 (0.0803)	0.1109 (0.0792)
Bachelor degree					0.1246 *** (0.0449)	0.1322 *** (0.0439)
Had some college education					0.1284 *** (0.0448)	0.1357 *** (0.0439)
Completed high school					0.0840 ** (0.0427)	0.0884 ** (0.0421)
Constant	-29.000 ** (14.027)	-31.100 ** (13.545)	-27.300 ** (13.343)	-28.400 ** (13.159)	-24.200 * (13.328)	-25.100 * (13.185)

Standard errors are in parentheses.  
 \*\*\*Statistically significant at 1%  
 \*\*Statistically significant at 5%  
 \*Statistically significant at 10%

### About the Author

Chanvuth Sangchai received a Bachelor's Degree in Economics from Thammasat University, Thailand in 1995 and a Master of Arts in Economics from Cleveland State University, Ohio in 1998. He entered the Ph.D. program at the University of South Florida in 2001. While in the Ph.D. program at the University of South Florida, Chanvuth Sangchai taught several classes of Principles of Microeconomics, Principles of Macroeconomics, and Basic Econometrics to undergraduate students.