

**Does Binge Drinking Effect Job Turnover?**

**ECO 4355 – Final Paper**

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**“Does Binge Drinking Increase Employment Turnover?”**

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## **Introduction:**

The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as five or more drinks in a sitting for a male, and four or more drinks in a sitting for a female. Binge drinking has been linked to car crashes, date rape, cirrhosis, and various types of cancer. Numerous studies have documented the health and social effects of alcoholism, and it is widely accepted that drinking reduces productivity in the workplace. Of particular interest are hangovers, which result in both greatly reduced productivity and increased absenteeism. These factors also both contribute to employment turnover, as someone who is consistently unproductive as compared to their peers and someone who has above average absenteeism is more likely to be unable to maintain long-term employment. Hangovers are most frequently associated with binge drinking, as they are associated with edema, metabolic acidosis, and disruption with circadian rhythms, all of which are in turn correlated with the expunging of alcohol from the bloodstream, which only occurs when more alcohol has been drunk than the body can efficiently process. From this information, it can be concluded that binge drinking has the potential to increase job turnover for an individual worker, a prospect this report intends to test.

While binge drinking may reduce an employee's staying ability at a particular job, it does not necessarily have an impact on that employee's prospects of finding a job and being hired on. While in many cases, binge drinking is habitual, an employee can easily become sober for the duration of the job-seeking process because alcohol takes so little time to be processed by the body. Without references from previous employers which refer specifically to the worker's alcohol abuse problems, which the prior employer may not even know about, the new employer has no way of knowing that their potential employee has a drinking problem. In this manner,

binge drinking does not lead directly to a person being unemployable, but does contribute to an inability to maintain steady employment. The easiest way to judge employment turnover is to compare the number of jobs held during a person's lifetime to their age. A higher number indicates more short-term jobs, while a lower one indicates longer term employment at a few companies. While some people are "movers and shakers" who frequently change positions and employers, the effect of those people can be negated by including them in the control group for comparison, as they are likely a very small portion of the population. Further, it is likely that people with lower scores on aptitude tests will have more frequent, shorter-term employment, such as seasonal employment, or a number of part-time jobs. An independent statistic will be established in order to understand the magnitude of this effect, and the test group will be compensated if necessary. While there are many other factors that may effect a person's employment history, most do not disclude the population of binge drinkers, as they are a cross-section of society as a whole, breaching age, gender, race, and age barriers. Therefore, it is of limited concern that special cases be accounted for in regards to drinking, and we need only worry about aberrations in groups who have a disproportionately large number of part-time jobs. Using statistics from the National Longitudinal Survey of Youth, this study aims to account for the effects of binge drinking by first establishing a job turnover rate for individuals that are binge drinkers and comparing them to less heavy drinkers, to see if any definitive conclusions about long-term employability can be drawn.

### **Literature Review:**

Existing literature studied attempts to outline the effects of alcohol abuse on the productivity of workers. Based on this, the research being proposed is, how does alcohol abuse affect employee turnover in the labor market? The following discussions about previously

conducted research tend to answer the question while accounting for various geographical, racial, and social differences between the impacted groups. The first paper studied tends to focus on the overall statistics of alcohol abusers (based on a survey sample) and their impacts in the workforce, while the second is largely related to alcoholism and women, and its social and professional impacts.

*“The impact of Drinking and Drinking Consequences on Short-Term Employment Outcomes in At-Risk Drinkers in Six Southern States”*

This study proposes to link alcohol abuse directly to labor market outcomes for a small survey group. To construct this study, a longitudinal database of at-risk drinkers was first compiled. The members of this sample group were selected based on their meeting the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria for either recent, current, or future alcohol abuse or dependence.

The conceptual framework upon which the model is based is employment status and employment duration (job turnover). Through the screening process, the organizers were able to construct a cohort of 733 problem drinkers from six Southern states. To ensure that the market outcomes were not skewed due to urbanization, rural areas were oversampled so that roughly 50% of the sample population was from a rural area. The survey was then carried out in earnest, over the course of eighteen months, and conducted in four waves, each interview taking place six months from the last, starting with the baseline interview which was conducted upon initial selection.

The two labor market outcomes identified in the survey were comprised of whether or not the respondent had worked in the preceding six months, and how many weeks of the preceding six months they had worked if they responded positively to the first question. Further,

individuals who described themselves as unemployed or not in the labor force were not counted, as labor market outcomes are not useful for members of the population who are not part of the labor market. Then respondents were asked a series of questions about their drinking habits, intended to determine if the respondent was indeed a problem drinker, including:

- 1) Whether they felt that they had a lifetime history of binge drinking,
- 2) If they had experienced any negative social effects of their alcohol consumption since the last survey
- 3) The number of years in the respondent's lifetime that they had been a drinker.

To mitigate negative results stemming from abuse of other substances, additional questions were posed regarding the abuse of other drugs such as cocaine, marijuana, stimulants, and inhalants. Another question was designed to determine if there had been any negative social externalities in the respondent's life, which could also result in a change in labor market participation. Finally, a general health survey was conducted to determine if the respondent's physical health contributed in some way to their labor market participation. Variables were also included to account for age, gender, race, marital status, education, family size, and urban residency status. The results were then compared to the relevant county-level unemployment rate for each respondent to determine the probability of their being unemployed irrespective of alcohol abuse.

The key dependent variables in the study are employment status (whether the respondent has worked since the last survey), and number of weeks worked in the six months since the previous survey. By limiting the scope of the dependent variables in such a manner, a more direct result can be obtained from the multitude of explanatory variables inherent in any social study model. The key explanatory variables included whether the respondent drank more than

seven drinks on the average drinking day; their average number of drinking days for the six month period in question; recent diagnosis of alcohol use disorder; perceived negative social consequences due to drinking; the number of lifetime years the respondent has been a drinker; and a perceived lifetime history of binge drinking. Other explanatory variables which were also accounted for in the model included recent drug use, negative life events, physical and emotional health, age, gender, marital status, race, family size, education level, urban residence status, chronic unemployment, and county-level unemployment rate. Probabilities were then created for both the likelihood of being employed and unemployed, allowing the researchers to determine whether alcohol abuse had a positive effect on unemployment or a negative effect on employment.

The results obtained indicate that the average number of drinks on a drinking day had only a marginal positive impact in relation to the probability of unemployment, but was significant for the risk of reduced employment. When the regressions were run, it was found that the strongest predictor of employment status was previous employment, but at-risk drinkers who drank more than seven drinks on an average drinking day were six times more likely than at-risk drinkers who drank less than seven drinks a day. Interestingly, the frequency of drinking in the past six months and the two consequence measures (alcohol addiction diagnosis and perceived negative social impacts) had no significant impact on either of the measured labor market outcomes. Number of years drinking correlated with unemployment, but not with weeks of unemployment. At risk drinkers who were physically healthy were more likely to be employed in the preceding six months, while emotionally healthy respondents were more likely to have been employed for a longer period of time. Higher education was also associated with increased

employment, but education past high school had no significant impact. While rural and urban respondents were equally likely to be unemployed, rural workers were employed for longer.

The researchers finally concluded that drinking at least seven drinks was significantly associated with increased unemployment and reduced number of weeks worked in those not diagnosed with alcoholism during the baseline survey, and unemployment alone in those who were alcoholics when the baseline survey was conducted.

*“Women and Work: Tiplers and Teetotalers”*

John Mullahy and Judy L. Sindelar examine the effects of alcoholism on employment for women. The specific purpose of their paper is to explain the apparent positive relationship between alcoholism and employment for women that has been seen in previous research. The researchers theorize that this positive relationship is not a causal one, but instead that unidentified variables correlated in some way with alcoholism may be responsible for this counter-intuitive result, along with racial differences. The dependent variable in their study is employment status, and their independent variables include level of alcohol consumption, age, location, health status, marital status, and parental status.

Their research method involved first collecting alcohol consumption data and other variables from a sample of women ages 25 to 29 divided by white and black racial categorizations, and observing the relationships between alcoholism and employment in this newly racially disambiguated sample. Then they observed the relationships between alcoholism and other variables that are known to effect employment status, such as marital status, parental status, etc.

This study first found that there was a significant difference in the correlation of alcoholism and employment in black women versus the same correlation in white women. Black

women experienced a significant negative correlation, while white women experience a significant positive correlation. Next, they found that alcoholism correlated negatively with the chances of being married, negatively with number of children, and positively with education. These findings support the researcher's hypothesis that the positive alcohol to employment correlation can be explained by racial differences and the fact that variables known to have an effect on employment are related to alcohol consumption.

The researchers stress, however, that just like the misleading alcohol to employment correlation, significant correlations do not necessarily imply causal relationships. Thus just because they found significant relationships between alcoholism and such variables as education and marital status, it does not absolutely follow that alcoholism causes higher education or singleness, or the converse.

### **Methods:**

Given the results of the literature reviewed above, we can conclude that a correlation exists between alcoholism and job turnover in labor markets. According to the first paper, the identified level of impact of alcohol use is seven or more drinks in one sitting by a respondent had significant impacts on the labor market outcome for such an individual. For the second paper, however, the results seem fairly counter-intuitive, in that alcohol abuse seems to be more strongly correlated to race, rather than employment, at least among women. The fact remains, however, that the sample surveyed in the first paper seems to be more strongly indicative of the negative relationship between alcohol and employment, which outlines a particular level at which impacts are significant. Due to this result, we feel that it would be necessary to include key demographic information into the model to identify the high risk individuals, however the level of seven or more drinks in one sitting may be questionable, since the National Institute on

Alcohol Abuse and Alcoholism defines binge drinking as five or more drinks in a sitting for a male, and four or more drinks in a sitting for a female, it would seem necessary to relax the seven drink constraint and test for correlations. Furthermore, this would be an effective way to test future employee productivity given past alcohol abuse situations, even though it is extremely difficult to quantify accurately. Time spent employed at a particular position is also an important indicator of productivity of the employee, and could be used to measure successful candidates. Given our proposal to study alcohol abuse on employee turnover, we can get a good correlation between drinking and successful labor market outcomes for individuals.

In our analysis of whether or not binge drinking behavior impacts job turnover, we have chosen a large-scale anonymous survey – the National Longitudinal Survey of Youth - to provide statistics, as the uniformity of the survey prevents large error variance due to non-uniform data measurement. We have carefully selected the descriptive variables we have chosen in order to prevent any collinearity between measures, while still accounting for all significant factors. We have also defined both our question, which asks whether binge drinking increases job turnover, and the statistic we will use to answer that question, the number of jobs a person has held per year legally employable within the labor force.

#### *Data*

Our analysis uses data from the National Longitudinal Survey of Youth, a study of over 12,000 young men and women who were interviewed in 1979, when they were between the ages of 14 and 21. A wealth of information was gathered in this survey: the respondents were asked a number of questions about alcohol consumption, personal employment history, and health status, in addition to a host of other queries. We have compiled these responses into a set of descriptive statistics about the sample set by paring down the descriptors to a number we feel are relevant to

our question: whether binge drinking increases job turnover. These questions involve drinking behavior, local labor market conditions, health conditions, and demographic data. While we have found some of these statistics to be usable and relevant in their raw form, we also found a need to generate several additional composite statistics from the available data.

### **Descriptive Statistics and Research Methods:**

We have already determined that the job turnover rate will be a calculated value, based on the number of jobs divided by the number of employable years. Because labor laws in the United States prohibit work before the age of 15, we have subtracted that from the respondent's age to calculate the number of years the respondent has been a potential member of the labor force. We then divide the number of lifetime jobs by this number to find out how many jobs per each year they have been employable. Higher numbers with this statistic, *jturnov*, indicate higher job turnover. We have also created a dummy variable to tell us whether or not the person is a binge drinker to begin with. We are using the National Institute on Alcohol Abuse and Alcoholism's definition of binge drinking, which dictates four or more drinks in a sitting for a female and five or more drinks in a sitting for a male. Therefore, we have used the data set's dummy variable for gender to narrow the data set into both binge drinkers and non-binge drinkers by defining a conditional variable *bingey*, which allows for both gender and number of drinks in a sitting. While it is possible that a person may go on infrequent but severe lapses into alcoholism, we feel that this possibility does not reduce the likelihood that job turnover will increase with such behavior, so we have not set a threshold for how often the respondent in question binge drinks.

In order to eliminate other circumstances which alter labor market outcomes in a statistically significant way, we have also allowed for the local labor market unemployment rate,

a percentage which varies between 0 and 100. By doing this, we can factor in the likelihood that the respondent will be naturally unemployed, which would skew our statistical analysis. Further, we have also included the gathered data describing health conditions that limit the amount and type of work a respondent can do, racial data, family background, and several other factors that may affect job turnover. We have also included the education level of the respondent, as we feel that it may have some bearing on the long-term viability of an individual's employment, provided their skill set is suitable for the job they hold, if any.

We feel that the descriptive statistics we have chosen will have a minimal amount of collinearity while still adequately describing both the conditions applicable to our question and circumstances that will alter the outcome in question.

<i>Explanatory Variables</i>	<i>1989 Data</i>		<i>1994 Data</i>	
	<i>(1)</i>	<i>(2)</i>	<i>(1)</i>	<i>(2)</i>
	<i>Binge Drinkers</i>	<i>Non-Binge Drinkers</i>	<i>Binge Drinkers</i>	<i>Non-Binge Drinkers</i>
<b>Job Turnover</b>	0.650	0.571	0.560	0.507
<b>Ever Drink</b>	1.000	0.944	1.000	0.947
<b>Days/Month Drinking</b>	8.836	3.949	9.660	4.764
<b>Drinks/Day Drinking</b>	7.786	1.234	6.875	1.352
<b>Health Issue</b>	0.041	0.043	0.094	0.076
<b>Unemployment Rate</b>	5.874	5.563	7.650	7.285
<b>Education</b>	11.783	12.918	11.876	13.262
<b>Experience</b>	9.915	9.084	14.811	13.665
<b>Experience<sup>2</sup></b>	107.025	92.754	227.859	197.436
<b>I.Q.</b>	30.250	40.813	29.181	42.170
<b>Black</b>	0.199	0.271	0.244	0.294
<b>Hispanic</b>	0.225	0.152	0.271	0.173
<b>Female</b>	0.388	0.543	0.383	0.518
<b>Nuclear Family</b>	0.615	0.682	0.646	0.694
<b>Married</b>	0.345	0.514	0.378	0.554

*Table 1.* Mean Characteristics of Cross-Section Data for 1989 and 1994

### **Regression Results:**

For the data collected from 1989, we found that when we regressed the model using binge drinking as our only explanatory variable there exists a significant positive correlation between binge drinking and job turnover. The overall fit of this model to the actual data as

shown by the Adj R-squared statistic was not very high mainly due to the single control variable used in the regression. We then add four more explanatory variables related to education and experience levels in order to control for their impact. When we ran the regression again with these added variables, we found an increased significant positive effect of binge drinking on job turnover. We also found that the overall fit of the regression improved considerably, but was still poor. Finally, we decided to control for ten other variables such as local unemployment rate, ethnicity and family background. Again, we saw a significant positive relationship between binge drinking and job turnover, however the coefficient for this variable dropped to a lower value than in either of the two previous models, and the overall fit of this model was slightly better than the two preceding ones.

We proceeded with an identical protocol for the data collected from 1994. We first ran the regression with binge drinking as the only explanatory variable, and then progressively controlled for other variables in two subsequent regressions. The results for the 1994 data were very similar, and followed the same pattern shown above. Since the signs of the respective coefficients had not changed over time, this would imply further the validity of the explanatory variables that are significant in their respective directions.

After running these regressions separately, we combined the 1989 and 1994 data and ran a fixed factor regression. This regression of course fit very well with the actual data, but our key explanatory variable, binge drinking, ceased being significant. The motivation behind using the fixed effects model is to control for any changes in characteristics over time for each individual respondent.

We did not encounter problems with multicollinearity in our variables, probably because of our large sample size. We clearly encountered omitted variable bias in our models with only

binge drinking as an explanatory variable, but our subsequent models with added variables helped to reduce this bias.

The biggest surprise with the results was in terms of the negative coefficients displayed for the Black and Hispanic racial groups as well as the gender coefficient. We would expect being of a minority origin or a female to have a positive impact on the job turnover explanatory coefficient. What we found, however, was that the mean number of jobs in the sample for the minorities and for females was lower than that for white males, indicating the impact of the overall number of jobs held by these groups to be lower which would have a negative impact on the job turnover ratio.

### **Conclusion:**

Overall, our results indicate that being a binge drinker has a positive significant impact on job turnover over the lifetime of an individual. All other things being constant, given our definition of binge drinking (5 drinks or more in a day for men and 4 or more in a day for women), we have shown that the number of jobs held over a lifetime increases with the number of drinks consumed, implying that less voracious consumers of alcohol can expect greater longevity in the workplace. This has implications on the productivity levels of individuals and can be used to make cases for greater control and regulation of alcoholic beverages. Drug abuse can be tested for and identified by employers to screen out potential unproductive workers; however, the problem in identifying alcohol abusers is much greater, since alcohol is easily removed from the system of an individual after some time. This study supports the idea that alcohol must become a greater controlled substance, and employers should routinely check employees for current abuses and set up rehabilitation programs in order to ensure productivity from all their workers.

<i>Explanatory Variable</i>	<i>1989 Data</i>			<i>1994 Data</i>			<i>Fixed Factors</i>
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>	<i>(7)</i>
<b>Binge Drinker</b>	0.078 (0.012)	0.085 (0.011)	0.028 (0.013)	0.053 (0.012)	0.061 (0.011)	0.028 (0.016)	0.001 (0.005)
<b>Education</b>		-0.046 (0.003)	-0.037 (0.003)		-0.032 (0.003)	-0.025 (0.003)	-0.005 (0.003)
<b>Experience</b>		-0.054 (0.005)	-0.050 (0.005)		-0.044 (0.007)	-0.043 (0.007)	-0.038 (0.001)
<b>Experience<sup>2</sup></b>		0.000 (0.000)	0.000 (0.000)		0.000 (0.000)	0.000 (0.000)	0.001 (0.000)
<b>I.Q.</b>		0.001 (0.000)	0.000 (0.000)		0.000 (0.000)	0.000 (0.000)	-0.017 (13100000.000)
<b>Ever Drinks</b>			0.099 (0.017)			0.111 (0.017)	0.023 (0.012)
<b>Days Drinking per Month</b>			0.003 (0.001)			0.001 (0.001)	0.000 (0.000)
<b>Number of Drinks Per Day</b>			0.001 (0.001)			0.000 (0.002)	0.000 (0.000)
<b>Health Issue</b>			0.030 (0.017)			0.013 (0.013)	-0.003 (0.006)
<b>Unemployment Rate for Respondent's County</b>			-0.007 (0.002)			-0.004 (0.001)	-0.001 (0.001)
<b>Black</b>			-0.115 (0.010)			-0.084 (0.010)	--
<b>Hispanic</b>			-0.060 (0.010)			-0.046 (0.010)	--
<b>Female</b>			-0.076 (0.007)			-0.065 (0.007)	--
<b>From a Nuclear Family</b>			-0.056 (0.008)			-0.048 (0.008)	--
<b>Married</b>			-0.047 (0.007)			-0.052 (0.008)	-0.005 (0.003)
<b>RSS</b>	1233.340	1079.325	984.4610	641.415	580.0223	555.006	
<b>R-Squared</b>	0.0047	0.1290	0.1717	0.0031	0.0985	0.1373	0.9755
<b>df</b>	9290	9286	9026	6699	6695	6684	

### *Bibliography*

1. Booth, Brenda M., and Weiwei Feng. "The Impact of Drinking and Drinking Consequences on Short-Term Employment Outcomes in At-Risk Drinkers in Six Southern States.." *Journal of Behavioral Health Services & Research* 29.2 (2002): 157-167.
2. Mullahy, John, and Jody L. Sindelar. "Women and Work: Tipplers and Teetotalers." *Health Economics* 6.5 (1997): 533-537.

## Stata Do File

```
#delimit;
clear;
set matsize 125;
set mem 25m;

*****;
* PAPER THREE STATA DO FILE ;
* ;
* THE PROGRAM REPORTS SUMMARY STATISTICS FOR A TERM PROJECT ON THE EFFECTS;
* OF BINGE DRINKING ON EMPLOYMENT TURNOVER. THE DATA SET USED IS A SUBSAMPLE
FROM ;
* THE NATIONAL LONGITUDINAL SURVEY OF YOUTH FOR 1979. ;
*****;

cd "C:\Documents and Settings\sxb030200\Desktop\Econometrics\";

use "C:\Documents and Settings\sxb030200\Desktop\Econometrics\alcohol.dta";

log using "C:\Documents and
Settings\sxb030200\Desktop\Econometrics\alcohol.log", replace;

* CREATING NEW VARIABLES;

* BINGE VARIABLE;
gen binge=1;
replace binge=0 if perday<5;
replace binge=1 if sex==2 & perday==4;

* JOB TURNOVER VARIABLE;
gen jturnov=(numjob)/(age-15);

* EDUCATION VARIABLE;

gen educ=higrad;

* EXPERIENCE VARIABLES;

gen expr=age-(higrad+6);
gen expr2= expr*expr;

*MEASURED ABILITY;

gen iq=afqtrev;

* ETHNICITY VARIABLES;

gen black=0;
replace black=1 if race ==2;
gen hisp=0;
replace hisp=1 if race ==1;

* SEX VARIABLE;
gen female=0;
replace female=1 if sex==2;

* NUCLEAR FAMILY VARIABLE;
```

```

gen nukes=0;
replace nukes=1 if wdad14==1 & wmom14==1;

* MARITAL STATUS VARIABLE;
gen married=0;
replace married=1 if marst==2;

* SUMMARY STATISTICS reported for dependent and independent variables;
sum numjob if year==94 & black==1;
sum numjob if year==94 & hisp==1;
sum numjob if year==94 & female==1;
sum numjob if year==94 & black==0 & hisp==0 & female==0;
sum numjob if year==89 & black==1;
sum numjob if year==89 & hisp==1;
sum numjob if year==89 & female==1;
sum numjob if year==89 & black==0 & hisp==0 & female==0;

sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp
female nukes married if binge==1 & year==89;

sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp
female nukes married if binge==1 & year==94;

sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp
female nukes married if binge==0 & year==89;

sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp
female nukes married if binge==0 & year==94;

* Run regressions for 1989 for binge drinking effects on turnover;
reg jturnov binge if year==89;

*Include educational and experience levels to determine impact;
reg jturnov binge educ expr expr2 iq if year==89;

* Running with all variables to test for significance;
reg jturnov binge drnkev days perday health urate educ expr expr2 iq black
hisp female nukes married if year==89;

* Run similar regressions for 1994;
reg jturnov binge if year==94;

*Include educational and experience levels to determine impact;

```

```
reg jturnov bingeey educ expr expr2 iq if year==94;

* Running with all variables to test for significance;

reg jturnov bingeey drnkev days perday health urate educ expr expr2 iq black
hisp female nukes married if year==94;

areg jturnov bingeey drnkev days perday health urate educ expr expr2 iq black
hisp female nukes married, absorb(id);

translate alcohol.smcl alcohol.log, replace;

log close;
```

## Stata Log File

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-----  
-----  
log: C:\Documents and Settings\sxb030200\Desktop\Econometrics\alcohol.log  
log type: text  
opened on: 14 Nov 2005, 17:51:46  
  
. * CREATING NEW VARIABLES;  
. * BINGE VARIABLE;  
. gen bingeey=1;  
  
. replace bingeey=0 if perday<5;  
(14435 real changes made)  
  
. replace bingeey=1 if sex==2 & perday==4;  
(305 real changes made)  
  
. * JOB TURNOVER VARIABLE;  
. gen jturnov=(numjob)/(age-15);  
(7 missing values generated)  
  
. * EDUCATION VARIABLE;  
. gen educ=higrad;  
  
. * EXPERIENCE VARIABLES;  
. gen expr=age-(higrad+6);  
  
. gen expr2= expr*expr;  
  
. *MEASURED ABILITY;  
. gen iq=afqtrev;  
  
. * ETHNICITY VARIABLES;  
. gen black=0;  
  
. replace black=1 if race ==2;  
(4374 real changes made)  
  
. gen hisp=0;  
  
. replace hisp=1 if race ==1;  
(2733 real changes made)  
  
. * SEX VARIABLE;  
. gen female=0;  
  
. replace female=1 if sex==2;  
(8248 real changes made)  
  
. * NUCLEAR FAMILY VARIABLE;  
. gen nukes=0;  
  
. replace nukes=1 if wdad14==1 & wmom14==1;  
(10881 real changes made)  
  
. * MARITAL STATUS VARIABLE;  
. gen married=0;  
  
. replace married=1 if marst==2;  
(8171 real changes made)  
  
. * SUMMARY STATISTICS reported for dependent and independent variables;  
. sum numjob if year==94 & black==1;  
  
Variable | Obs Mean Std. Dev. Min Max  
-----+-----  
numjob | 1931 8.451579 4.910717 0 28  
  
. sum numjob if year==94 & hisp==1;
```

```

Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    1237    8.49232   5.080356     0     36
. sum numjob if year==94 & female==1;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    3365    8.336701   4.890949     0     34
. sum numjob if year==94 & black==0 & hisp==0 & female==0;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    1746    9.696449   5.645249     0     34
. sum numjob if year==89 & black==1;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    2442    6.474611   3.908987     0     28
. sum numjob if year==89 & hisp==1;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    1492    6.790885   4.257692     0     35
. sum numjob if year==89 & female==1;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    4882    6.69193    4.143717     0     35
. sum numjob if year==89 & black==0 & hisp==0 & female==0;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
numjob   |    2532    8.153239   4.586865     0     36
. sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp female
nukes married if binge==1 & year==89;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
jturnov  |    1069    .6498177   .4043667     0     3.4
drnkev   |    1070     1         0           1     1
days    |    1070    8.835514   8.447441     1    30
perday   |    1070    7.785981   9.919413     4    96
health   |    1037    .0405014   .1972273     0     1
urate    |    1070    5.873832   2.298669     1.5   16.5
educ     |    1070    11.78318   2.030105     3     19
expr     |    1070    9.914953   2.954165     1     20
expr2    |    1070   107.0252   59.93283     1    400
iq       |    1070    30.24953   24.06353     1     99
black    |    1070    .1990654   .3994841     0     1
hisp     |    1070    .2252336   .4179314     0     1
female   |    1070    .3878505   .487488      0     1
nukes    |    1070    .6149533   .4868339     0     1
married  |    1070    .3448598   .4755448     0     1
. sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp female
nukes married if binge==1 & year==94;
Variable |      Obs      Mean   Std. Dev.   Min     Max
-----+-----
jturnov  |     799    .5598648   .3399481     0    2.125
drnkev   |     800     1         0           1     1
days    |     800     9.66      8.799215     0    30

```

Variable	Obs	Mean	Std. Dev.	Min	Max
perday	800	6.875	3.741239	4	30
health	800	.09375	.2916629	0	1
urate	800	7.65	2.84783	1.5	16.5
educ	800	11.87625	1.888887	5	20
expr	800	14.81125	2.914832	4	24
expr2	800	227.8587	88.22448	16	576
iq	800	29.18125	23.77083	1	99
black	800	.24375	.4296122	0	1
hisp	800	.27125	.4448829	0	1
female	800	.3825	.4863017	0	1
nukes	800	.64625	.4784319	0	1
married	800	.3775	.4850648	0	1

```
. sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp female
nukes married if binge==0 & year==89;
```

Variable	Obs	Mean	Std. Dev.	Min	Max
jturnov	8223	.5714396	.3588389	0	3.1
drnkev	8226	.9438366	.230251	0	1
days	8226	3.949429	6.215746	0	30
perday	8226	1.233893	1.245246	0	4
health	8011	.0425665	.2018902	0	1
urate	8224	5.563351	2.163285	1.5	16.5
educ	8226	12.91782	2.421797	0	20
expr	8226	9.084124	3.199084	-1	26
expr2	8226	92.75419	61.36104	0	676
iq	8226	40.81291	29.1393	1	99
black	8226	.2710917	.4445503	0	1
hisp	8226	.1523219	.3593545	0	1
female	8226	.5431558	.4981644	0	1
nukes	8226	.6821055	.4656865	0	1
married	8226	.5139801	.4998349	0	1

```
. sum jturnov drnkev days perday health urate educ expr expr2 iq black hisp female
nukes married if binge==0 & year==94;
```

Variable	Obs	Mean	Std. Dev.	Min	Max
jturnov	5902	.5065499	.3050707	0	2.125
drnkev	5904	.9469851	.2240822	0	1
days	5904	4.764228	6.871313	0	31
perday	5904	1.352473	1.197398	0	4
health	5903	.0762324	.2653921	0	1
urate	5904	7.284553	2.749831	1.5	16.5
educ	5904	13.26186	2.423387	0	20
expr	5904	13.66548	3.269952	3	29
expr2	5904	197.4361	90.31809	9	841
iq	5904	42.16972	29.09143	1	99
black	5904	.2940379	.4556477	0	1
hisp	5904	.173103	.3783683	0	1
female	5904	.5181233	.4997138	0	1
nukes	5904	.6935976	.4610379	0	1
married	5904	.5542005	.4970957	0	1

```
. * Run regressions for 1989 for binge drinking effects on turnover;
. reg jturnov binge if year==89;
```

Source	SS	df	MS	Number of obs =	9292
Model	5.8114916	1	5.8114916	F( 1, 9290) =	43.77
Residual	1233.34005	9290	.132759963	Prob > F =	0.0000
				R-squared =	0.0047
				Adj R-squared =	0.0046
Total	1239.15154	9291	.13337117	Root MSE =	.36436

jturnov	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bingey	.078378	.0118463	6.62	0.000	.0551566	.1015995
_cons	.5714396	.0040181	142.22	0.000	.5635633	.5793159

. \*Include educational and experience levels to determine impact;  
. reg jturnov bingey educ expr expr2 iq if year==89;

Source	SS	df	MS	Number of obs = 9292		
Model	159.826508	5	31.9653016	F( 5, 9286)	= 275.01	
Residual	1079.32504	9286	.116231428	Prob > F	= 0.0000	
				R-squared	= 0.1290	
				Adj R-squared	= 0.1285	
Total	1239.15154	9291	.13337117	Root MSE	= .34093	

jturnov	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bingey	.0854134	.0112236	7.61	0.000	.0634126	.1074142
educ	-.0458292	.0025315	-18.10	0.000	-.0507915	-.0408669
expr	-.0540359	.0046184	-11.70	0.000	-.0630891	-.0449828
expr2	-.0000603	.0002315	-0.26	0.794	-.0005141	.0003934
iq	.0012735	.0001605	7.94	0.000	.000959	.0015881
_cons	1.607913	.0448471	35.85	0.000	1.520003	1.695824

. \* Running with all variables to test for significance;  
. reg jturnov bingey drnkev days perday health urate educ expr expr2 iq black hisp female nukes married if year==89;

Source	SS	df	MS	Number of obs = 9042		
Model	204.04748	15	13.6031653	F( 15, 9026)	= 124.72	
Residual	984.461005	9026	.109069467	Prob > F	= 0.0000	
				R-squared	= 0.1717	
				Adj R-squared	= 0.1703	
Total	1188.50848	9041	.131457636	Root MSE	= .33026	

jturnov	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bingey	.0280881	.0130021	2.16	0.031	.0026011	.053575
drnkev	.0990059	.0166024	5.96	0.000	.0664615	.1315503
days	.0030907	.0005642	5.48	0.000	.0019847	.0041967
perday	.0005621	.0010176	0.55	0.581	-.0014327	.0025568
health	.0297024	.0173213	1.71	0.086	-.0042513	.0636561
urate	-.0065509	.0016447	-3.98	0.000	-.009775	-.0033268
educ	-.0367663	.0025676	-14.32	0.000	-.0417993	-.0317332
expr	-.0504592	.0045588	-11.07	0.000	-.0593955	-.041523
expr2	-.0000602	.0002291	-0.26	0.793	-.0005093	.0003889
iq	.0001272	.0001818	0.70	0.484	-.0002291	.0004836
black	-.1146307	.0098004	-11.70	0.000	-.1338417	-.0954196
hisp	-.0598043	.0103066	-5.80	0.000	-.0800076	-.0396009
female	-.0761217	.0072632	-10.48	0.000	-.0903593	-.0618841
nukes	-.055828	.0077802	-7.18	0.000	-.0710789	-.0405771
married	-.0467912	.0073394	-6.38	0.000	-.0611782	-.0324043
_cons	1.579044	.0476327	33.15	0.000	1.485673	1.672415

. \* Run similar regressions for 1994;  
. reg jturnov bingey if year==94;

Source	SS	df	MS	Number of obs = 6701		
Model	2.00034476	1	2.00034476	F( 1, 6699)	= 20.89	
Residual	641.41554	6699	.095747953	Prob > F	= 0.0000	
				R-squared	= 0.0031	
				Adj R-squared	= 0.0030	
Total	643.415885	6700	.096032222	Root MSE	= .30943	

jturnov	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
---------	-------	-----------	---	------	----------------------	--

bingey		.053315	.0116644	4.57	0.000	.0304491	.0761809
_cons		.5065499	.0040278	125.76	0.000	.4986541	.5144456

. \*Include educational and experience levels to determine impact;  
 . reg jturnov bingey educ expr expr2 iq if year==94;

Source		SS	df	MS		Number of obs =	6701
Model		63.3935903	5	12.6787181		F( 5, 6695) =	146.35
Residual		580.022295	6695	.086635145		Prob > F =	0.0000
						R-squared =	0.0985
						Adj R-squared =	0.0979
Total		643.415885	6700	.096032222		Root MSE =	.29434

jturnov		Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
bingey		.0614611	.0113068	5.44	0.000	.0392962 .083626
educ		-.0321841	.0026454	-12.17	0.000	-.0373698 -.0269984
expr		-.0441112	.0066525	-6.63	0.000	-.0571523 -.0310701
expr2		.0000091	.0002303	0.40	0.693	-.0003605 .0005424
iq		.0003948	.0001614	2.45	0.014	.0000785 .0007112
_cons		1.501522	.068219	22.01	0.000	1.367791 1.635253

. \* Running with all variables to test for significance;  
 . reg jturnov bingey drnkev days perday health urate educ expr expr2 iq black hisp female nukes married if year==94;

Source		SS	df	MS		Number of obs =	6700
Model		88.3471267	15	5.88980845		F( 15, 6684) =	70.93
Residual		555.006375	6684	.083035065		Prob > F =	0.0000
						R-squared =	0.1373
						Adj R-squared =	0.1354
Total		643.353501	6699	.096037245		Root MSE =	.28816

jturnov		Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
bingey		.0275431	.0160306	1.72	0.086	-.003882 .0589681
drnkev		.1106584	.017362	6.37	0.000	.0766234 .1446934
days		.0009504	.0005411	1.76	0.079	-.0001103 .0020111
perday		.0004401	.0022441	0.20	0.845	-.0039591 .0048393
health		.0134272	.0133256	1.01	0.314	-.0126954 .0395497
urate		-.0039181	.0013416	-2.92	0.004	-.0065481 -.0012882
educ		-.0251983	.0026744	-9.42	0.000	-.030441 -.0199555
expr		-.042694	.0065549	-6.51	0.000	-.0555437 -.0298442
expr2		.000128	.0002266	0.56	0.572	-.0003163 .0005722
iq		-.0003087	.0001848	-1.67	0.095	-.000671 .0000536
black		-.083505	.0100042	-8.35	0.000	-.1031165 -.0638935
hisp		-.0459835	.0104414	-4.40	0.000	-.0664519 -.025515
female		-.065172	.0073921	-8.82	0.000	-.0796628 -.0506812
nukes		-.0481497	.0080068	-6.01	0.000	-.0638456 -.0324537
married		-.0519046	.0075669	-6.86	0.000	-.0667382 -.037071
_cons		1.457964	.0691734	21.08	0.000	1.322362 1.593566

. areg jturnov bingey drnkev days perday health urate educ expr expr2 iq black hisp female nukes married, absorb(id);

Linear regression, absorbing indicators		Number of obs =	15742
		F( 11, 5946) =	222.93
		Prob > F =	0.0000
		R-squared =	0.9755
		Adj R-squared =	0.9351
		Root MSE =	.08735

jturnov		Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
bingey		.0006078	.0046519	0.13	0.896	-.0085116 .0097273

drnkev		.0227053	.0123939	1.83	0.067	-.0015913	.047002
days		.0003311	.0002257	1.47	0.142	-.0001113	.0007735
perday		-.0001968	.0004653	-0.42	0.672	-.001109	.0007154
health		-.003193	.0058038	-0.55	0.582	-.0145705	.0081844
urate		-.0005402	.0005976	-0.90	0.366	-.0017117	.0006313
educ		-.0047833	.0026149	-1.83	0.067	-.0099095	.0003429
expr		-.0378661	.0012838	-29.49	0.000	-.0403828	-.0353493
expr2		.0010263	.0000532	19.31	0.000	.0009221	.0011305
iq		-.0171701	1.31e+08	-0.00	1.000	-2.57e+08	2.57e+08
black		(dropped)					
hispanic		(dropped)					
female		(dropped)					
nukes		(dropped)					
married		-.0051297	.0033859	-1.52	0.130	-.0117674	.0015079
_cons		1.568622	5.29e+09	0.00	1.000	-1.04e+10	1.04e+10

---

id | F(9784, 5946) = 20.664 0.000 (9785 categories)

```
. translate alcohol.smcl alcohol.log, replace;
file alcohol.smcl not found
r(601);
```

```
end of do-file
r(601);
```

```
. log close
log: C:\Documents and Settings\sxb030200\Desktop\Econometrics\alcohol.log
log type: text
closed on: 14 Nov 2005, 17:51:51
```

---