Social Group Membership and the Health-Income Cycle:

Two Essays

An Honors Thesis for the Department of Economics

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CONTENTS

ABSTRACT

Several recent studies have linked health and income in a self-reinforcing cycle. It is understood that factors such as childhood health and nutrition have extensive repercussions on future earning potential. The WHO and many other organizations dedicated to health and development are now actively encouraging the improvement of health as a way to gain a more productive supply of labor in developing countries.

The goal of this paper is to further analyze how health affects income, how health behavior affects health and to examine the effects of addictive consumption on income, but to do it within the framework of social group membership theory, as proposed by Steven Durlauf. Durlauf postulates that membership to specific social groups, given the right circumstances, can induce poverty trapping. Theoretically, negative health behaviors such as cigarette and alcohol consumption should affect the health of those in poorer communities more and thus help induce a poverty trap. To ascertain if social group has any effect on health behavior, smoking and drinking are analyzed for their correlation to specific social groups in China.

It can be concluded from the empirical evidence that in China, some forms of social group membership matter. Specifically, village cadre membership and working on agricultural and fishing collectives are correlated to adverse health behaviors. Perpetuation of certain social cultures within these groups that promote certain types of social drinking and smoking may be an explanation for this phenomenon. Therefore, modulating health policy to fit the social community may be an important factor in controlling negative health behaviors.

INTRODUCTION

Anyone who has ever been to a developing country will know: there is an undeniable link between health and poverty. Riding a bus across an urban center such as Mexico City, you might come across barefoot children, homeless beggars, blue collar laborers, and any other variety of individuals who show the signs of poor health. If you have visited a more remote rural area, you might have observed the poor conditions subsistence level farmers and their families live in, and the crippling effects of disease on many of them. But often it doesn't take going to a developing country to observe this phenomenon. The same problems can be found in a big city or rural area of a developed country, like New York or rural Georgia and Mississippi. Many individuals in these areas suffer from preventable conditions varying from poor dental health, to malnutrition, obesity, and childhood asthma

Despite the differences in geographical location, many of the individuals who suffer from these conditions and diseases share the common link of low income. Many of their problems are preventable with proper treatment and policy initiatives. Despite this theoretical knowledge, the link remains undeniably clear- poor health and poverty are almost inextricably associated with each other. Until recently, it was commonly assumed that this was mainly due to the effects of low income. An individual with low income would be less likely to afford proper health care, and therefore be more susceptible to disease and its lasting effects. However, in recent years, it has become obvious that this is only part of the story. As I intend to explain in the subsequent portions of this paper, health problems have emerged as a causal factor in lowered productivity. It now appears that poverty and poor health outcome may be linked in a self-reinforcing, cyclical mechanism.

Recent years have also seen the advent of legitimacy in the field of social group membership theory. While social group membership is not yet fully linked to the health-income cycle in the existent literature, it may be an important factor. Since health and income may be self-reinforcing, and social group membership may enforce certain choices and habits, it may well be possible that social groups reinforce certain health behaviors amongst their members. A goal for this paper is to address this aspect of the health-income cycle.

Since health can be seen as human capital, it may well prove important to identify the effects of group membership on health behaviors before designing policies to increase the stock of health. It may be possible to do this in a more efficient way by modulating the form of intervention to fit the social situation. If, for example, smoking is a behavior motivated by interactions within a given social group, it may prove to be important to target role models or a certain subset of the community to reduce the incidence of smoking. Teenage pregnancy can often be associated with certain social realities that require modification in order to drop the rate of underage conception. This is valid for other behaviors as well, ranging from violence to wearing seatbelts.

The goals of this paper are to explore three questions: i) how health affects income; ii) how health behavior (specifically addictive behavior) affects health; and iii) if social group membership influences health behaviors. In order to address these questions, I approach them in two separate essays. In Essay I, I address some global observations on the link between health and income to fully establish the background to these issues. Following this, I examine the cyclical link between health and income and use Argentina and China as cases in point. I then analyze the effects of socially motivated addictive health behaviors- smoking and alcohol consumption- on health as human capital. In Essay II, I will lay out arguments for the importance of social group membership in the effects of health behaviors on income.

I then use a dataset from China to empirically analyze the accuracy of my arguments.

Essay I:

A Conceptual Approach to the Examination of Addictive Behavior in the Health-Income Cycle

I. <u>Health Affects Income</u>

Health as Human Capital

Human capital is the experience and expertise an individual, community, or country possesses. Blanchard defines it is as: "the set of skills of the workers in the economy." (Blanchard, 2003, p. 236) Generally, individuals with high education and good health have higher incomes and longer life expectancies than their less educated, unhealthier counterparts. A longer life generally generates more human capital in the form of knowledge, thus also contributing to income by adding job experience and making the person a more valuable worker. Human capital is a very desirable, if somewhat intangible, element of economic potential. Health can be considered a form of human capital because it contributes to a person's capability to be active, work, and also to learn the skills to perform well at work and add value. Stock of health depreciates over time, and requires investment for maintenance. This distinguishes it from other human capital forms which, once gained, remain unchanged over a person's lifespan, such as level of education. (Grossman, 2000) It is also considered a human right by most developed countries and many developing countries are being pressured to see it in the same light.

The Importance of Health: Implications and Complications

Implications

The prevailing literature suggests a strong link between poor health and poverty. The basic assumption is that health is a form of human capital that affects an individual's ability to benefit from education, take advantage of opportunities, and to be productive and perform well in the labor market. (Bloom, 2003, p.1) As Theodore Schultz pointed out:

> "The decisive factors of production in improving welfare of poor people are not space, energy, and cropland; the decisive factor is the improvement in population quality." (Schultz, 1980, p. 640)

Health is a good area of investment if one's goal is to improve production. It has proven a significant factor at both the individual and aggregate levels. At the individual level, there is a positive correlation between good health and productivity. This can be attributed to a person's increased strength and heightened mental capacity, which allows him or her to commit more energy to production.

For instance, height is a good indicator for wage earnings. The logic is that, all other things being equal, those who receive better nutrition and health care in childhood grow taller than their malnourished, often ill, counterparts. A study of height effects on wage in Brazil, Ghana and the US, shows that an additional centimeter of height is associated with a wage increase of 1.5% for men and 1.7% for women in Ghana, and 1.4% for men and 1.7% for women in Brazil. This increase diminishes in the US, where men gain only .45% and women .31%.[1] This can be attributed to diminishing returns to health and nutrition, as the overall level for both is higher in the US than in Brazil and Ghana. An instrumental variables estimation shows the significance to be even higher- one centimeter of height increase instrumented by local prices and access to nutrition and health care can produce between 8% and 10% wage gains in both Brazil and Ghana. (Schultz, 2002, p.5)

[1] Derived from an OLS estimation of height as an independent variable and log of hourly wages as the dependent variable, with controls for education, parent education, ethnicity, and rural residence.

On a larger scale, evidence strongly suggests a link between per capita income and measures of aggregate health across countries. [2] (Bloom, 2003, p.1) Particularly in developing countries and poorer communities in developed countries, bolstering of human capital in the form of health is of immediate concern. Seen from a macroeconomic point of view, "dozens of percents" of the GNP of developing countries are lost each year to disease and poor health. (Sachs, 2001, p. 32) The members of poor communities are much more susceptible to poor health outcomes because they are more likely to live in unsanitary conditions, are often not aware of appropriate action in case of disease, live far from effective medical care, and simply cannot afford the staggering cost of health care. In the latter case they are often forced to liquidate their productive assets, such as cattle, land, or tools of trade, for medical care, sending them further into poverty and rendering them even less capable of properly managing their health. The WHO shows that the effects of these problems are extreme. For instance, countries with high infant mortality rates experience low economic growth across the board. The same is true of countries with high incidences of infectious disease (such as malaria), and low life expectancy.[3] (Sachs, 2001) It is therefore crucial to encourage development of a good stock of health in developing countries to increase their aggregate output and encourage growth. It can also be argued that health is a basic human right and should be encouraged simply to improve standards of living.

A Case in Point: Argentina

Argentina's situation serves to illustrate two very important facets of the health-income mechanism. It shows that infrastructure imbalances overwhelmingly block the poor

[2] Bloom attributes this to "a causal link running from income to health," – a reiterative mechanism is not considered, but a link between health, productivity and economic development is considered.
[3] Sachs cites estimates that, ceteris paribus, a 10 percent improvement in life expectancy at birth can result in a .3 to .4 percent increase in economic growth per year. (Sachs, 2001, p34)

from proper access to medical care. It also demonstrates that poor health can significantly retard a nation's economic growth potential.

Argentina is one of the richer developing countries in South America. It has the most doctors per dollars GNP of any Latin American nation. Within its urban centers, one can find medical technology not six months after its first appearance in the developed countries such as the US. Despite this seeming affluence and overflow of medical expertise, the realities for poor communities in the country are quite different from what one would expect. Its GINI Coefficient is 0.83, indicating a wide disparity in its population's income and well-being. (United Nations, 2004) Up to 20,000 children die per year of avoidable infectious diseases, and many of them live with their families in deplorable conditions. They drink contaminated water, are exposed to disease on a regular basis, miss on average 50 days of school per year, and often have no access to appropriate health care they could afford. While it claims to be on the fast-track to becoming a developed country, Argentina lags behind significantly in the allocation of health care resources that would aid in its progress.

Both the urban and rural poor populations in Argentina are exposed to illness by similar pathways. Their housing is often inadequate and exposed to environmental hazards. Women and children under the age of 6 often remain in the house exposed to these conditions. [5] To make matters worse, there is also a significant homeless population including many children. Many in these communities have inadequate heating, no or unsanitary water, electrical problems and other housing deficiencies. Garbage is often left to rot near housing and sewer and waste management systems are structurally inadequate and

[5] Only about 27 percent of women over the age of 14 participate in the workforce as of 1980, which significantly increases their chances of exposure because they are constantly in hazardous surroundings and have little income to better their lives (Stillwaggon, 1998)

unsanitary. These conditions create exposure to diseases that would otherwise be easily preventable. For example, gastrointestinal disease, diarrhea, and parasite infestation are rampant. Chagas Disease [6] has become a national concern, as it is the most common parasitic disease in the country, and may have infected about 8 percent of the total population.

These problems can be attributed to a number of state characteristics. tly, the state is not very strong in governing its health apparati and does not exhibit the political impetus and motivation to do so. Secondly, while the country spends 9 percent of its GDP on health care, it seems hardly capable of extending its partially sophisticated medical infrastructure to the poorer communities. Medical care for the poor is in adequate in quality, quantity and access. Thirdly, it has fallen short in measures of public health, such as sanitation and education.

The effects of these shortcomings can be markedly observed in the impoverished population. Child mortality as of 1993 was 24 per 1,000. While low for a developing country, this is a disappointing rate for an aspiring developed country with relatively high GDP per capita, and urban, medical and educational structures. But mortality rates do not measure the effects of disease on children who survive, the future of the workforce. Poor children often leave school at a far too early age because they experience disease which causes them to miss school and fall behind. Exposure to malnutrition [7] and disease stunts their development both physically and mentally. This in effect takes a large portion out of their individual stock of health capital that may otherwise be invested in future production.

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[6] American trypanosomiasis

[7] Not to mention the fact that malnutrition makes them more susceptible to disease and so heightens their risk even further.

The implications of Argentina's experience are corroborated by an empirical analysis of the effect of childhood health on future income and health in British Men (derived from data in the 1958 British National Child Development Study)[8]. The analysis stresses exposure to poor socioeconomic conditions in young adulthood as a determinant of earnings and health status in later adulthood. It finds that health in young adulthood is a valid predictor for future earnings and employment, even after accounting for educational attainment. It also identifies poor adult health as a predictor of reduced probability of employment in the future. The study concludes that current, adult employment status and earnings have little effect on future health. The authors argue that childhood health is an important factor in health in early adulthood, which in turn dictates health status in later adulthood. (Case et al, 2003, pp. 8-10)

Another study shows that poor *in utero* nutrition can lead to a significant reduction in the number of brain cells. Babies who are born with a low birthweight may have 40 percent fewer brain cells than high-birthweight babies. Low birthweight is often associated with poor pre-natal care and nutrition, which many poor women experience during their pregnancies. (Stillwaggon, 1998)

These data imply that certain baseline conditions that may exist in childhood have a greater effect on future income than previously appreciated. Childhood health can be seen as a contributor to both the poverty and the poor health outcome impoverished individuals experience due to a spillover of health problems into the most productive years of their lives. entina demonstrates that as a result of its health capital deficiencies, the workforce is stunted and less productive than its potential promises. This is often due to childhood conditions. Poor nutrition and disease early in life reduce children's potential to develop

[8] Case et al does not define childhood with a specific age. Rather, the study collects income and health data in "childhood", at age 23, age 33, and age 42.

their intellectual capacities, reducing the stock of education (also a form of human capital) in the workforce. This inability to achieve competitive status in the workforce affects income potential and keeps many of the victims of poor health in the same state because they cannot afford to "buy themselves out of it".

Another Case in Point: China

In contrast to Argentina, China has reined in many of its health problems. A proactive policy towards eliminating preventable and communicable diseases has reduced infant mortality and increased lifespan in the overall population.[9] By 1993, cancers and heart disease overtook communicable diseases as cause of death in many areas. This is a marked change, as it more closely resembles disease patterns of developed rather than developing countries. However, China spent between 2.27% and 2.45% of its GNP from 1989 to 1992. (Wong, 1994, p.261) China spends about 1% of the world's health resources, but contains about 22% of the world's population.[10] (Yu, 2001, p.288) By contrast, the US spent 13.1% of its GDP on healthcare in 2002. (World Markets Research Center, 2002) This low level of spending often results in insufficient health care in some areas. For example, it is more common to find better care in urban than in rural areas. Thus there remain disparities in health within the population. During China's socialist era, health care was controlled by the

[9] Infant mortality was 34.98 in 1000 births in 1980, and fell to between 13.5 to 21.5 per 1000, depending on area, by 1993.
[10] A population of now over 1.3 billion.

central government. Due to the economic liberalization, the government has had to significantly change its approach to public welfare. The country relies on a three-tier system, which integrates village, township and county jurisdiction. Health care has become somewhat privatized. The government still funds medical care, but it now sets prices for procedures which providers of care may charge their patients. These fees are the balance of treatment the government cannot pay. (Wong, 2001, p.290) Care has essentially become subsidized, but is not free. Because of the radical ideological, governmental, and economic changes China has experienced since Mao, health care has evolved into a functioning, but not necessarily perfect system. China's health care evolution has had significant effects on burdens of cost on state owned enterprises and other governmental institutions. The ensuing changes that have occurred have left the urban population better cared for than the rural communities. (Gu, 2001)

Today, the health care industry financing has recovered somewhat from its disintegration since China has opened its markets, but the delivery of care has not. Thus, health problems persist which must be addressed. In the rapidly increasing elderly population, COPD, heart disease, diabetes and other age-related diseases have started to take their toll. There is no public service designed to take care of their health needs. While provinces like Guangdong may have strong, integrated systems of health care, the problems of access and cost still plague many individuals in the more remote areas and those who do not have private or public health care (very few). This strongly affects the older population because they often do not have access and rely primarily upon family resources for payment of medical expenses. The development of township enterprises has increased the amount of discretionary income people can spend on their medical care, but this may come too late for the older population. (Wong, 1996) This growing, medically dependent portion of the population may well prove to be a source of difficulties for China's families, since they are the support these individuals rely upon.

In addition to facing these structural growing pains, China also faces the emergence of new infectious diseases. While many traditionally threatening communicable diseases have been effectively dealt with, threats like AIDS are not well understood by many in the population and often ignored by the government. Only in the last year has the government taken more proactive steps in stopping the spread of this disease. SARS emerged in the late winter of 2003 and few public health measures were initially taken to prevent its spread. The disease was barely acknowledged until international involvement forced a more aggressive approach. This inadaptability to new health threats could prove catastrophic if a virile, rapidly spreading disease were to break out. Many think this may already be the case with HIV.

China, like the rest of Asia, is also having trouble controlling behaviors that damage health. Some 60% of the male population has at least tried smoking at some point, and mortality rates are beginning to reflect this trend. Up to 40% of strokes are hemorraghic[11], which is associated with smoking. In developed countries, only 10% of strokes are hemorraghic. Rate of death is about 18 times higher for male smokers than for non-male smokers, and more smokers tend to die of cardiovascular disease and cancer than non-smokers. (Pokorski, 2000, pp.103-107) This culture of smoking is partially associated with the Chinese practice of taxing foreign cigarettes more heavily than domestic ones. This encourages use of the Chinese products, which often have a higher nicotine content than their foreign counterparts, and occasionally may lack filters.

[11] Caused by hypertension

China's situation is markedly different from Argentina's. It has a different history and the change from socialism to open markets has strained the structure of its health care infrastructure in a way Argentina has not experienced. Despite the differences in their problems and systems, the conundrum these two countries face are still remarkably similar. China faces a large population with foreseeable increases in medical needs. As a result, it will have to approach health care aggressively in the future to maintain its economic momentum. Argentina will have to approach health care just as aggressively, but with a different slant. It still faces a large indigent population whose health problems are totally uncontrolled. Both countries will have to spend large amounts of resources for the same reason: to ensure that their populations can produce. Crucial to the development of their health capital will be how they spend these resources.

Global Implications of Argentina's and China's Experiences

For developing countries and communities, it is crucial to develop and maintain stock of health. As Grossman points out, health must be invested in to compensate for depreciation, both on the individual and community level. Health disparities not only set apart some portion of the population which is caught in poverty traps, but they are also indicative of more overall problems in society. In equal societies, in which there are few overall disparities in health, members are also likely to be offered more public goods and social capital. Thus, even the rich living in communities with high levels of disparities may experience a lack of public goods and services, which lessens the standard of living. Deaton shows that at the lower income levels, poverty induced health problems contribute significantly to cause of death. Thus health inequality affects the poor most, as it is the impoverished that stand the most to gain from health gains. The poorest make the greatest marginal gains from health investment in a community with disparity issues. (Deaton, 2003, pp. 113-153) This makes it very important for countries like China and Argentina to promote health in their poorer communities, as this is both a good way to build human capital where it matters most, and it augments the well-being of the entire country.

Argentina's and China's cases are generalizable to many other developing countries and communities. Both are set apart by the fact that their health care systems are somewhat more developed than those found in other developing countries, and China has managed to gain a disease profile that closely mirrors that of developed countries. However, their shortfalls demonstrate precisely what sets back poor countries and communities. While access to and payment of health care are important aspects of developing a healthy working population, it may not be enough. For example, by leaving trash to rot in places close to housing, pests are encouraged to mingle with the human population. Many are carriers of disease and thus spread illness to a population that already has little ability to protect its health. Public health measures, such as prompt removal of trash and sanitation are crucial to preventing diseases before they ever gain a foothold.

Public education is also a key to building a community's stock of health. For example, in China, civet cats are considered a delicacy. They appear on markets as gourmet food. However, they were implicated as primary carriers of SARS during the epidemic of spring 2003. The government's hesitation in aggressively acting against SARS has lead to a delay in getting civet cats off the market. To date, they are still available illegally. By eating civet cats, not only does the individual expose himself to the possibility of infection, he also exposes his community by his interaction. This black market situation serves as a perfect example of lack of governmental impetus to educate. This case is not only an issue in China, but serves as an example globally. Developing countries are often set back by failure to address public health, education, and sanitation needs. The inability to adapt to new health challenges and raise public health stock by aggressively pursuing it on a community level generates problems that go beyond the inability to access or pay for medical care. Investing just in health care and access will not be enough. Countries experiencing problems like Argentina's or China's can only hope to better their situation if they approach matters of public health and safeguarding in a more realistic manner.

Complications

Murray indicates that a direct approach to health capital growth might be attempted by creating programs that not only emphasize monetary investment in health care itself, but also reinforce the need to strengthen community interactions and health behaviors. (Murray, 2000, p.4) The Colorado Health Communities Initiative (CHCI) stands out as a prime example of how this can work. The initiative began with examining a benchmark year[12], and concluded that health disparities across ethnicity, age and income groupings were threatening to split communities along these groupings, the government of Colorado adopted two major goals to improve health outcomes. The first was to improve access to health care, the second to strengthen families. The first goal became the domain of the CHCI, which engaged in a community level approach that was adapted to each specific locale's needs. The success across communities appears to be somewhat mixed, but many of the researchers in the project consider it to be potentially very successful as long as the community interest does not atrophy. (Murray, 2000) In this case it becomes clear that health capital must be

[12] 1991

driven by communities themselves. It is not necessarily simply a matter of pouring money into health care or public policy. In order to improve community health, it is important to understand the dynamics of the people within it. Acting on unique community characteristics makes the creation of human capital a little more complicated, but perhaps when the appropriate course of action is taken, also more effective.

Often, the analysis of what affects health is complicated by the problem of endogeneity, which is discussed in Essay II. This phenomenon makes it difficult to separate cause from effect and often obscures the true causes of poor health. It may misdirect attempts at correcting this problem. While simply investing money in the health sector may not be the most effective approach, community involvement may also not be the panacea. The WHO now suggests a more comprehensive approach, addressing education, sanitation, and environmental and social considerations. (Sachs, 2001, p.37)

The Implications of Health Effects on Income

As suggested, the prevailing literature has already established a significant link between health and income, due to the more recent advances in empirical studies showing that the two are linked in a positive feedback cycle. For the intents of the following, I must define "health behavior", which denotes the actions a person may take that influence health. This may include behaviors that do not seem to have direct influence on health, but do have an overall effect on health stock. For example, high levels of stress at the workplace may not seem to be a direct factor in generating health stock, but it may indirectly affect it via immunosuppression. Factors such as alcohol consumption, smoking, and exercise habits can have a significant, unintended effect on health.

This brings to the forefront the issue of addictive and voluntary behaviors. If health is a problem in income generation, as the evidence suggests, and a country knows that its health problems partially stem from poor transportation and access, this might be an obvious point of attack to increase health stock. One could invest in a transportation system and increase access to health care. But what if the country experiences lesser improvement in health due to resistance from its population to changing its lifestyle, diminishing the potential effects of the investment?

What if some portion of a population's health stock is being eroded by preventable behaviors? What if its stock could be increased by the introduction of a simple habit, such as walking three times a week for twenty minutes? What if alcoholism needs to be addressed? The CHCI study implies that policy geared towards increasing human capital in the form of health is more successful when it takes into account health behaviors and involvement in the program in the community, not just availability of health care. It has long been acknowledged that certain behaviors have strong impacts on health. Social norms of a community may drive these behaviors. For example, in a community that emphasizes social interaction over outdoor activities like hiking, individuals may be more likely to spend weekends or afternoons outdoors simply to fit in or to enjoy the interaction on the same level as their peers. Whether or not that person continues to engage in outdoor sports and becomes a true enthusiast may in some part be driven by social influences. It may be important to understand how these community and peer effects result in health behaviors. Social group membership theory is a fairly new and potentially important concept in understanding the health dynamics of communities. Following an examination of addictive health behavior, this concept will be treated in Essay II.

II. <u>Health Behavior Affects Health</u>

Addictive Behaviors

For the purposes of illustrating the effects of behavior on health stock, I will focus on addictive behavior while only briefly addressing benign behaviors, such as exercise. The goods consumed, such as tobacco, are treated as addictive commodities. Addictive commodities are defined by the fact that current consumption affects future consumption. (Sarbaum, et al, 1999, p. 75) The initial decision to engage in these activities is generally voluntary, the subsequent decisions to do so may not be. This is the case in tobacco consumption, alcoholism and abuse of any addictive drug. While addictive demand for the good is more inelastic than for a regular, non-commodity good, the consumers of addictive substances are to varying degrees sensitive to budget constraints. In the following section, I will examine if and how smoking, alcoholism, and other addictive behaviors impact the consumer's stock of health. Specifically of interest are poor communities because, as suggested before, they tend to suffer more under the burden of poor health. The fundamental question is how much the impact of addictive health behaviors is, whether it is economically significant or not, and whether it can be addressed by policy initiatives.

Alcoholism: Effects on Health Stock

Low to moderate consumption of alcohol can actually improve cardiovascular long-term health One to two drinks a day can reduce the risk of heart attack by as much as 40%. (Forman, 1994, pp.1-2). However, alcohol consumed in large quantities and binge drinking episodes can lead to short term impairment, which may create sometimes fatal lapses in judgment. For instance, countless automotive accidents have been caused by consumption of alcohol and most sexual assaults happen when the assailant or the victim have been drinking. In the long term excessive alcohol consumption increases the risk of cancer and deterioration of cardiovascular health. It can also be socially destructive- social support may evaporate as friends, family members and spouses become alienated. Alcohol abuse can affect the next generation via fetal alcohol syndrome and psychological damage.

While alcohol consumption is a normal phenomenon in most societies, today, there is increasing evidence that alcoholism is strongly linked to stress- specifically economic stress. One study showed that a five percent increase in state unemployment rates[13] increased the incidence of binge drinking in the study population by about eight percent. While overall consumption of alcohol seems to decrease during recessions, the incidence of binge drinking during the same period tends to rise, particularly amongst young, white males. While this may not be alarming in and of itself, the issue is the distribution of these harmful behaviors within the population. Particularly the young suffer from high incidences of binge drinking. (Dee, 2001) The implication is that those who experience less stability in the labor force (the young, the poor) are also more likely to engage in abusive alcohol consumption because they are more likely to resort to binge drinking during recessions. Becoming abusive at an early age creates two problems. First, alcoholic behavior reduces available capital as well as capabilities to compete in the workforce. Second, it predisposes its victims to poor performance later in life because it establishes itself as a pattern. As Case indicates, health in childhood and early years of working life is a crucial factor in income potential and working capability.

[13] In the USA

The poorest quintile of families receives about 7.7% of all income for the population in the study[14], but accounts for about 9.2% of all alcohol consumption and 16.6% of all cigarette consumption. (Lyon et al., 1992) While simple consumption of alcohol does not cause significant deterioration of health stock, as outlined above, binge drinking and alcoholism do. If heightened consumption of alcohol in this group indicates a higher incidence of these behaviors, the lowest income group may be at greater risk of health deterioration.

Smoking: Effects of Health Stock

Like alcohol, cigarette smoking can have strong negative implications on consumers' health in both the short and long term. According to the CDC, when consumed in childhood, smoking reduces lung function, depresses lung growth, decreases resting heart rate, and harms physical fitness. In all individuals, regardless of age, it predisposes towards lung cancer, higher rate of morbidity, and general problems with the pulmonary and cardiovascular systems. The longer an individual smokes, the more likely he or she is to develop lung cancer and experience negative health effects. Smoking behavior is also associated with marijuana and harder drug use in young adults and children. It correlates with other high risk behaviors, such as engaging in violence and unsafe sex.[15] Clearly, the effects cigarette smoking has on an individual's health are also monetary- increased costs may arise by heightened usage of medical services. There are additional hidden costs- if health stock has such a large effect on individual, regional and national economic welfare,

[14] The data comes from the Panel Study of Income Dynamics, which interviewed families once a year from 1968 to 1987 for income and tobacco and alcohol consumption.
[15] While these behaviors are associated, smoking should by no means be considered the cause. It could simply be an associated behavior that may be driven by the same incentives as unsafe sex, fighting, and drug use.

pervasive problems with smoking and tobacco consumption may well take a toll that reaches into a the economic wealth of all concerned. (CDC, 2004)

In a study of the external costs of smoking in certain cities in the USA, Manning et al find that smoking has little to no effect on the use of outpatient services. The study may have underestimated the effects of smoking on these services, though, because former smokers do have a significantly higher incidence of using them than individuals the never smoked or are current smokers. This may be because they have become ill as a result of smoking. They might then subsequently quit, but still utilize outpatient medical care as a result of their former habit. Current smokers may have smoked for less time and not yet seen the adverse results. Former and current smokers had a significantly higher chance of getting hospitalized for any reason, not just due to tobacco consumption. Additionally, those who smoked cigars or pipes also had higher rates of utilization of inpatient and outpatient services. (Manning et al, 1991, pp. 65-75)

The study indicates that the effects of smoking are noticeable in the long term. Never smokers enjoyed slightly higher wage rates, and lower medical costs and pension costs later in life than their cigarette consuming counterparts. They also tend to live longer. Beyond the effects of smoking on health, it also increases the likelihood of accidental fire, which comes at a great cost if it actually happens. Not only does each pack cost a certain amount of money that is removed from disposable income, but the individual who smokes may also experience a higher tax rate, due to taxation on the good.

The underlying issue is that once an individual begins to smoke actively, he or she runs a larger risk of addiction. Even if a person wants to quit due to high monetary cost or deterioration of health stock, this may be extremely difficult. (In the worst case scenario, the picture of an older patient with an oxygen tank smoking through a stoma springs to mind.)

In a wealthy individual, disposable income can be used to assuage the negative effects of the addiction, but a poor individual does not have the same liberty. The cost of cigarette smoking is a higher percent of his or her discretionary income and he or she may not be able to "purchase" health stock by engaging in healthy behaviors, such as seeing a doctor for a yearly physical or eating healthier foods. That individual may not be able to balance the ill effects of the addiction.

A Case in Point: Sri Lanka's Elderly Population

The adverse effects of cigarette consumption can be observed in the elderly population of Sri Lanka. Sri Lanka currently experiences an increase in life expectancy. As a result, the government has considered raising the retirement age of its workers from the current level of 60 years because their retirement pensions no longer allow them to maintain adequate lifestyles. In recent years, the problem of smoking within that population has had the effect of making them financially dependent on their children. (Arunatilake, 1998, p. 21)

An analysis was performed on the elderly male sample population[16] not using public sector health care in the Household Health Survey- Sri Lanka 1991. The data included extensive information on health care usage and income. As Manning et al suggested, the evidence points to heightened medical costs for both former and current smokers excepting current smokers with cardiovascular disease. Almost all smokers experiencing disease in both public and private work experienced decrease in income.[17] Life expectancies for those who never smoked are on average five years greater than of current smokers and 1.5 years

[16] Individuals of 60 years and older.

[17] Arunatilake categorizes current, former, and never smokers into those having lung disease, cardiovascular disease, and smoking-related diseases. The categories which did not show any decrease in income were those experiencing lung disease in the full sample and current smokers having cardiovascular disease.

greater than of former smokers. It is assumed that all elderly live with their children. The calculated dependence for the elderly is reported as discounted life-time expected dependence of taking an elderly male relative into the family. These discount rates were about 5% for the former and never smoker categories and 0% for current smokers. The results show that never and former smokers generally become dependent at the age of 70. The current smokers can become dependent by as early as 65. Taking in a currently or formerly smoking elderly relative into the household can be a large burden. The medical costs and drain on time can hold back the economic growth of the family. (Arunatilake, 1998, pp. 137-144)

Conclusion

Addictive behavior can hinder an individual's ability to raise earnings potential and a country or community's economic growth via two channels. It takes up discretionary income which could be spent for other things or saved, and destroys health stock. On an individual scale, this may not be a particularly treatable problem. However, if a societal propensity for smoking or alcoholism drives a baseline deterioration of health stock in the population, this may be an addressable issue. While it may be difficult to institute a program to end smoking in a population that has an established pattern of cigarette consumption, it may be possible to prevent initiation of the behavior by the subsequent generation. Intervention could be designed so that it inhibits the passing down of negative health behaviors from one generation to the next. By identifying the cause of the behavior and extent of the resultant damage, policy makers may be able to address a facet of health deterioration. In Essay II, I will provide a framework for addressing identification and causes of health behavior via social group membership.

Essay II:

The Effects of Social Group Membership on Health Behavior:
Evidence from China

III. <u>Social Group Membership Affects Health Behavior</u>

Social Group Memberships Theory

Is there a link between social group membership, health outcome and income? Durlauf provides a possible approach by outlining a framework that links group membership to poverty traps. He defines a poverty trap as a situation in which an individual or a group is impoverished and does not or cannot take the appropriate actions to alleviate poverty. The central assumption is that preferences and behaviors of a given social group will drive the preferences and actions of individuals associated with that group. He contends that strong enough social pressures within a group can produce poverty traps. Members of certain groups remain poor because adverse pressures influence them to take actions detrimental to earnings potential. These actions are assumed rational under the group circumstances. (2002, p.7) This theory is income-blind. In other words, it could also be asserted that the poverty trap Durlauf defines is really only a form of stasis supported by endogenous factors as long as exogenous variables do not change. It could also be argued that there is a "rich trap", or a "middle class trap". (Durlauf, 2002)

Teenage pregnancy serves as a good example of poverty trapping. As Stillwaggon points out, young girls in poor Argentinian communities often feel pressured to have sex. This is a cultural pressure, possibly reinforced by a previous generation of would-be role models who were also young mothers. There is no role model that might demonstrate that safe sex or not bearing a child at a young age are legitimate options. As a result of this social norm, teenage girls become teenage mothers in poor communities more commonly than in richer ones. They are then left with the role of supporting a child. This may have a negative effect in two ways. First, it drains resources and may reduce or prevent job productivity. Second, a child given with poor in utero and childhood nutrition and little healthcare may not be able to fulfill his or her potential in the workforce due to lifetime setbacks in health. (Case, et al., 2002)

Evidence exists that family and neighborhoods can feed the behavior of adolescents. An empirical study conducted by Case et al. concludes that across racial groups, youths whose family members have been jailed, have had drug problems, or are teenage mothers are much more likely to develop these respective behaviors than children whose family members are not in these circumstances.[18] Furthermore, the vast majority of all groups of children[19] in the survey reported that they leave their neighborhoods on a daily basis. This affords them contact with groups in schools, at work, and elsewhere that they might not have in their neighborhoods. Yet it seems that the majority repeats behavior of family members and neighbors. Firsthand observation of criminal activities or personal problems can drive the behavior of adolescents. When they are also in close contact with other children of their age, direct peer influences can reinforce this behavior. As a result of these two pathways, disadvantaged adolescents may never see a reason not to repeat the behaviors they see in their immediate surroundings. (Case, 1991, pp. 3-14)

Application of Social Group Memberships Theory to the Problem of Health and Poverty Trapping:

Durlauf's social groups framework of social interaction may possibly apply to poverty traps by eliciting certain health outcomes. As laid out in the previous essay, evidence supports the theory that income is affected by health, and health is affected by health behavior, especially addictive behavior. Social group membership may be a covariate

[18] Data was collected from surveys of inner city children conducted in Boston, Ma.
[19] Groups are defined as black boys, white boys, black girls and white girls.

in this mechanism. This may have important public policy ramifications. If this class of membership does indeed have an effect on the actions of individuals, it may mean that governmental programs and subsidies should be designed differently for communities that display distinct social group characteristics or tendencies. For example, a plan to reduce teen pregnancy might need to be tailored differently for poor young women in Boston and young women in Argentina due to different social pressures and circumstances.

Criticisms of the Social Group Memberships Theory

There are crucial obstacles to the analysis of social group membership as a factor in poverty traps. Three of these obstacles stand out: the actual definition of social group, the problem of endogeneity, and the identification of certain preexisting conditions which allow for the assumption of rational choice in the presence of poverty trapping.

The Definition of Social Group Membership

The definition of social group is crucial to the interpretation of this theory. First it must be clear what constitutes categorization into exogenous and endogenous groups. The exogenous groups are ones to which individuals belong free of choice, such as race, or place of birth. Endogenous groups are those to which a person belongs by choice. Durlauf defines this broadly and uses such factors as who your coworkers are, where you work, and where you live. (Durlauf, 2002) This approach may be flawed because, for example, a person might have little choice about neighborhood - especially early on in life. Likewise, one cannot always choose coworkers. In other words, this definition assumes low or no transaction cost. People are assumed to be perfectly mobile and can switch freely between jobs and neighborhoods. It might be more correct to specify social group as a function of ideology and completely free will. Membership to a political group or a recreational sports team serve as examples for both.

Due to these definition problems, categorization into social group as an endogenous group becomes complicated by the fact that one must decide what constitutes choice and at what level it begins to matter. Having made this criticism, it is also true that many of these factors are choice driven. A person on a limited budget is making a choice as to where he or she lives, perhaps choosing between various neighborhoods that suit the budget. So it is best to approach these definitions with a degree of skepticism and to understand that group membership is often a gray area, varying by what degree of restriction is imposed upon the definition.

Endogeneity- The Reflection Effect

The second complication to measuring the influence of social group membership is the phenomenon of reflection effects in the endogenous group. Manski describes this problem as trying to determine whether the social group drives the behavior of the individual or the aggregate behavior of the individuals determines the group's norms. These reflection effects arise out of three identifiable categories: endogenous effects, exogenous effects, and correlated effects. Endogenous effects are what the proposed model and empirical analysis attempts to measure. This is essentially intercorrelation: a given control variable also affects the variable measuring social group and the dependent variable may therefore actually be a function of the control variable. Exogenous or contextual effects arise when an individual behaves in a certain way because of the exogenous characteristics of his/her group, and correlated effects describe similar individual behaviors in groups because the individuals comprising the group are faced with the same environments or have similar characteristics. Manski asserts that a way to overcome these obstacles is to get background or contextual information on the individuals and groups being studied. (Manski, 1991, pp. 532-533) Any study on social group membership must therefore have background information that justifies social group definitions.

Rational Choice under Social Constraint

Rational choice may differ given different social circumstances. For example, educational attainment varies widely between richer and poorer communities. Members of poor communities are less likely to graduate from high school than the members of a rich community because less incentive exists to graduate. Lack of funds dictates a lower likelihood of obtaining a college education, whereas members of a rich community have a much higher incidence of high school graduation and college attendance. This is because members of the middle class face much higher opportunity costs in not finishing high school. If students in a middle class community give up high school, they would also give up a good shot at college. This reduces their earning potential. This is not a rational choice given their situation. In a community where low incentive exists to complete high school, and where the prevalent role models drop out and do not benefit from college education, students may not finish high school at the same rate as in rich communities. In other words, poverty traps induced by social membership can only exist under a certain set of preexisting conditions which lower incentives to act in a way that builds income potential. (Durlauf, 2002, p.7) This greatly complicates the process of measuring and accurately quantifying the effects of social membership.

Empirical Analysis

China and Health Behavior

As discussed in Essay I, China is facing a significant health threat not only from emerging diseases, but also from smoking. As Pokorski points out, in China 60% of men have smoked at some point in their lives. Those who smoke 1 to 19 cigarettes a day are 1.6 times more likely to die of all categories of disease than non-smoking men. Those who smoked 20 or more cigarettes per day are 2.1 times more likely. As is typical of smokers, they are much more likely to die of cancer or cardiopulmonary disease. Stroke due to hypertension, which is associated with smoking, is more common in China, where it accounts for about 40% of strokes, than it is in developed countries. (Pokorski, 2000, pp. 103-107) China faces a huge future problem as the youngest generation of smokers will begin to develop health problems. This problem is confounded by the fact that imported cigarettes are taxed at a higher rate than the domestic ones, thus discouraging their consumption in favor of the Chinese product. Chinese cigarettes are often found to have a high nicotine content and occasionally are not filtered.

Beyond its smoking problem, China also faces an increase in alcohol consumption. The country has emerged as one of the biggest barley importers to support its beer production. It is the world's second largest producer of beer. Domestic consumption has increased steadily since 1978. While the demand elasticities for beer and wine have remained greater than for liquor, beer is replacing wine and liquor in high income households. The Chinese government has generally supported this transition from liquor to beer, in part because of health concerns. (Wong, 1994) This leaves the lower income groups drinking a more potent intoxicant. Since China has liberalized its markets, it has seen a steady upsurge in consumer good consumption. The increase in beer and overall alcohol consumption is a telling sign of this phenomenon. The downside of its increased consumption is that China may be seeing an increase in alcoholism as well.

China has managed to maintain the disease profile of a developed nation, which is no small accomplishment given its resources. Now, it may be facing an entirely new challenge as the generation that has experienced the opening of the market matures and begins to experience disease. It is in China's health interest to take policy action to curb some of this behavior. As pointed out in the previous essay, China's approach will have to be geared towards the needs of its communities. It will have to closely examine what the population will respond to. China will have to find a way to intervene effectively.

Complicating the matter of intervention is that smoking and drinking are directly linked to building social capital. Social capital consists of the social networks and the social interactions and standards associated with them. It is useful for business since it lowers transaction costs. Once social contacts and friendships are established, it is easier to expand one's business network. (World Bank, 2002) Thus, it is common to sit amongst friends or business partners for a dinner and smoke cigarettes and drink. Chinese society is highly respectful of elders and guests- offering a cigarette or a drink is considered a gesture of goodwill. It is considered good business sense to engage in these behaviors and to sustain them to strengthen bonds. On the other hand, drinking above a moderate level and smoking are detrimental to health. The balance between social and health capital becomes difficult to strike.

To determine if Durlauf's theory that social group membership influences individual behavior, I will analyze whether Chinese cigarette and alcohol consumption are affected by social group membership. If it does indeed matter, there may be implications for China's health policies.

The Dataset

The Chinese Health and Nutrition Study (CHNS) is a survey over the years 1989, 1991, 1993, and 1997. Each year includes data from the same eight provinces, with the exception of 1997, in which one province is dropped and another added. (Fig. 1) Each province and community in the sample is weighted by population.[20] While the data is not specifically designed to be representative of the entirety of China, some conclusions drawn for these provinces can be considered quite apt for the rest of the country as well.

The survey includes data on the individual, household, and community levels for each year. It contains variables on income, health, nutrition, lifestyle and behavioral characteristics. Each individual in every survey household is interviewed and undergoes a physical exam. Household data is collected from one representative of the family, and community level data is gathered from observation and interviews with community officials. The same individuals and households are surveyed for each of the first three years. In 1993, new households are reconstituted in the dataset to account for new households forming from the original ones surveyed in 1989 and 1991. In 1997, one province was dropped and another added in its place, which dropped some old households and added new ones which will exist in the data from 1997 onward. The year used in this cross sectional analysis is 1993[21] because it contains the most accurate information in both the addictive consumption and social group membership variables. Of all the sample years, it also has the greatest amount of observations for these variables, allowing greater depth and accuracy.

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[20] While it should be noted that while the survey is not specifically designed to represent the entirety of the Chinese population, results derived from the data do have some bearing on general circumstances within the country.

[21] The provinces in the 1993 sample include Liaoning, Jiangsu, Shandong, Henan, Hubei, Hunan, Guangxi, and Guizhou. This sample is not considered representative of the entire country.

For the year 1993, 14,429 individual observations exist. Of the individuals interviewed, 12,015 completed the physical exam. These individuals live in 190 sampling units (communities) in approximately 3,800 households. (CHNS, 2004)

Problems in the Data

The CHNS dataset is fairly new. Because of its large size and often eclectic selection of variables, not all of it has been fully examined for flaws in the data incurred during survey and entry. While the 1993 data has been reviewed and properly arranged by the CHNS staff, there are often problems of illogical overlap between variables. For example, 45 men of the sample who completed the physical exam are reported to be pregnant. More specific to this analysis, several who answered "no" to the question "have you ever smoked?" are reported to have answered "yes" to the question "do you smoke now?". An individual who responds negatively to the former question is not asked the latter. Due to these issues, the data should be closely scrutinized before use. In order to avoid survey error by household, all regression analysis was done by cluster.

Since the dataset is provided in smaller, split datasets which must be merged, additional difficulty arose in joining portions of the dataset across the identifier variable provided by the data. This was "personid." As a floating variable, it was put together by multiplying the identifier variable for household of origin by 10,000 and then adding the individual's identifier variable (a number 1-24 for each household) multiplied by 100 and adding the last two digits of the year the person first participated in the survey. The statistical software package STATA, which was used for this analysis, does not handle floating variables of that length with accuracy- it rounds the numbers up and as a result, the unique identifier for each person was lost. This problem was resolved by sorting the data across household and individual identifier variables, which in combination are unique for the individual. However, in resolving this problem it was discovered that observations were be lost due to lack of data on certain individuals in the sets that were merged. That is, some data existed for them in the household survey, but not in the physical exam, or vice versa. As a result, observations for the year 1993 are reduced from 14, 429 to 11,165 overall. Since not all of the individuals surveyed completed the physical exam, only 9,190 individual observations are available for the analysis on health-related variables. These observation losses are not selectively biased.

Additionally, some questions in both the household survey and physical exam were not answered by everyone, so observations vary with each variable. The distribution of the sample does not change at a statistically significant level over the merges required to make the dataset complete. The sample can continue to be treated as representative of the populations and communities surveyed.

The CHNS data is impressive for its size and comprehensiveness, but it must be considered very carefully. Some variables in the data are labeled slightly differently than in the surveys. It was found that this was due to entry error. In order to ensure accuracy and understand the full meaning of the variables being used, cross-referencing with the survey manual is necessary.

Some of the variables needed for the analysis proved to need further manipulation. The variable for income had to be created by counting the number of certain apparati in a household[22] and breaking this into quartiles. This index was used in order to avoid using

[22] These goods included radios, vcrs, black and white TVs, color TVs, washing machines, refrigerators, air conditioners, sewing machines, electric fans, wall clocks, cameras, microwaves, electric cooking pots, pressure cookers, and metal cooking utensils.

household income measured in currency. While this is readily available in the data, it is not generally a good measure of earning and wealth accumulation in China. Some income may not be reported, some may exist in the form of barter, and purchasing power of currency is different across regions. The age variables were broken into categories according to the specifications of Lance et al, as were the variables for education. This was done in order to specifically focus the data on the common delineations of education and age in Chinese society. Simply breaking these variables down by quartiles was not sufficient to fully explore the effects of age and education in this population. (Lance, 2003, pp.178-179)

Methodology

Theory and Distribution of the Sample Population

For the analysis on addictive behaviors, the population was restricted to only men of age 20 or older. This restricts the sample to 3,547 observations. This restriction was made since smoking and alcohol consumption patterns, as well as social group and identity are not yet well-established early on in life. Moreover, Chinese women have a very low rate of smoking, only about 5 to 7% depending upon source, and also consume little alcohol. Therefore, adult men were used in order to look at a population in which smoking was prevalent and well established.

The goal of the analysis is to determine if social group membership has any effect on smoking and drinking behavior. In order to do this, several variables from the dataset where chosen as social group variables because of their unique social characteristics. Being an official cadre or a village cadre was chosen as a social group variable because officiating as a cadre can be considered a social choice. Those who are cadres are generally better educated than the general population (especially official cadres) and thus have a wider variety of job opportunities at their avail. The choice to be a cadre not only requires a conscientious decision, but also requires constant social contact, and often membership to the CCP, which espouses a certain ideology to which members shall adhere. Thus being a cadre exposes an individual to a certain type of social group interactions others in his community may not commonly experience. Having a mother or a father in the household was also considered a social group variable. Having a mother or a father in the household as an adult was more prevalent in China's past than it is now, since population mobility has increased with economic liberalization. This may mean that those who remain in households with their parents have a more traditional family structure as a form of social interaction and support. However, this parental membership approach is flawed in that one has less choice in family than in friends and other forms of social interaction. Having a mother or father in the household can merely be a matter of circumstance, and is therefore less valuable as a social group indicator. Finally, family membership to an agricultural or fishing collective was also considered an indicator for social group. In the data, variables for existed for membership of at least one family member to a fishing, farming, or animal farming collective. This was considered social group since workers now face an increasing number of choices in the workplace and even rural workers can decide not to farm on a collective. Membership to collectives may be more of a choice than it used to be. Furthermore, since each collective is of a different sort, it may be possible examine each for differing health behavior patterns that may stem from different social cultures perpetuated in these collectives and the families associated with them.

In order to first examine the overall characteristics of the sample population, the population was broken down for distribution across each province, geographical stratum, urban versus rural location, various categories for age, categories for level of education, categories for level of income, gender, and the social group variables for cadre, parental household membership, and collective membership. (Table 2)

Since this analysis focuses on health behavior, several variables focusing on addictive behaviors were chosen. These addictive behaviors were alcohol and cigarette consumption. Three variables were available for cigarette consumption: whether an individual has ever smoked, whether he smokes now, and how many cigarettes he smokes in a day. Two further variables were used for alcohol consumption: whether an individual has had alcohol in the last year, and how many drinks an individual consumes per week. These behavioral variables are broken down for mean across provinces, geographical stratum, urban versus rural location, categories for level of education, categories for age, categories for level of income, and the social group variables for cadre, parental membership in the household, and family membership to a collective. Then variance from the overall mean of each health behavior variable as broken down by each of these aforementioned categories was examined for statistical significance by ANOVA. (Table 3) This was done in order to ascertain what variables in the data influence health behavior. Also, the sample's distribution amongst these health behavior variables was examined to gain an overall understanding of the population's health behavior characteristics. (Table 2)

Regression Analysis

Following this examination of variance, a model for initial behavior and consumption was developed and tested in a series of regression analyses. Each model included control variables for province, stratum, urban versus rural location, education, income, age, and cost of the good consumed. Each regression was run 7 times, including each time only one social group variable in order to gauge the effects of each variable. Then each regression was run with all control and all social group variables included and the social group variables were tested for joint significance. These regressions are considered the first stage regressions.

A second stage of regressions was performed by using a measure of health as the dependent variable. The control variables included stratum, income, age, and education, and a variable which consisted of the predicted outcome from each first stage regression.

<u>Stage 1 Regressions</u>

First, a series of 7 logit regressions was performed with ever smoking as the dependent variable- one for each social group variable individually as an independent variable.

Dcig = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

The same regression was performed an eighth time with all social group variables included at the same time and tested for joint significance.

The same model was used to run a second series of 7 logit regressions, using smoking now as the dependent variable, and incorporating each social group variable individually:

Dcignow = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

An eighth regression was performed with all social group variables at the same time and tested for joint significance.

Once more, the same model was used to run a series of 7 logit regressions with each social group variable independently and one with all social group variables included (tested for joint significance). The dependent variable was having had alcohol in the last year:

Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

Then a linear consumption model, with independent variables identical to those in the logit estimation, was developed to examine cigarette and alcohol consumption. As done previously, a series of 7 individual regressions were performed- one for each social group variable, and then all were evaluated jointly.

The model for cigarette consumption is:

Cigamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

The model for alcohol consumption is:

Alcamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

Stage 2 Regressions

A second stage model was developed to gauge the effects of cigarette and alcohol consumption on health. The dataset provided a choice of self reported health status and health status as reported by the physician administering the physical exam for the dependent variable. For the purposes of this analysis, the physician's report was chosen in order to avoid the pitfalls of the more subjective self evaluation, which is often not as accurate as a physician's evaluation. The model included control variables for stratum, income, age and education. A predicted outcome was obtained from each of the 8 regressions for the amount of cigarettes consumed. This was then used as an independent variable in the second stage regression, where Y Pred is the predicted outcome of each individual first stage consumption model estimation (from the models with amount of cigarettes and amount of alcohol consumed as the dependent variables):

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

The same process was repeated by estimating the outcome of the alcohol consumption model and creating a variable Y Pred for this outcome. This was then used in the same model as above to evaluate the effect of alcohol consumption on health.

All regressions took into account cluster effects by household and thus included robust standard errors.

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Table 1.

Variables of Analysis	
Dcig	equals 1 if the individual answers yes to: "Have you ever smoked cigarettes?"
Dcignow	equals 1 if the individual answers yes to: "Do you still smoke cigarettes now?"
Dalc	equals 1 if the individual answers yes to: "During the past year, have you drunk beer or any other alcoholic beverage?"
Cigamt	equals number of cigarettes smoked per day
Alcamt	equals number of drinks of beer, wine, and liquor taken each week
Health	a measure of physical well-being determined during physical exam
Province	ordinal for which province the individual belongs to
Province 1	equals 1 if the individual lives in Liaoning
Province 2	equals 1 if the individual lives in Jiangsu
Province 3	equals 1 if the individual lives in Shandong
Province 4	equals 1 if the individual lives in Henan
Province 5	equals 1 if the individual lives in Hubei
Province 6	equals 1 if the individual lives in Hunan
Province 7	equals 1 if the individual lives in Guangxi
Province 8	equals 1 if the individual lives in Guizhou
Stratum 1	equals 1 if the individual lives in city
Stratum 2	equals 1 if the individual lives in suburb
Stratum 3	equals 1 if the individual lives in town
Stratum 4	equals 1 if the individual lives in village
Age 1	equals 1 if the individual is less than 20 years old
Age 2	equals 1 if the individual is between 20 and 24 years old
Age 3	equals 1 if the individual is between 25 and 54 years old
Age 4	equals 1 if the individual is over 54 years old
Educ 1	equals 1 if the individual has no education
Educ 2	equals 1 if the individual has some primary school
Educ 3	equals 1 if the individual has completed primary school
Educ 4	equals 1 if the individual has some lower middle school
Educ 5	equals 1 if the individual has some upper middle school
Educ 6	equals 1 if the individual goes beyond upper middle school
Inc 1	equals 1 if the individual is in the first quartile of income
Inc 2	equals 1 if the individual is in the second quartile of income
Inc 3	equals 1 if the individual is in the third quartile of income
Inc 4	equals 1 if the individual is in the fourth quartile of income
Sex	equals 1 if the individual is male, 2 if the individual is female
Cigprice	equals price of 1 pack of cigarettes
Beerprice	equals cost of 1 bottle of beer
Liqprice	equals cost of 1 bottle of sorghum liquor
Dicadre	equals 1 if the individual is an official cadre
Divcadre	equals 1 if the individual is a village cadre
Fatherhh	equals 1 if the father of the individual lives in the household
Motherhh	equals 1 if the mother of the individual lives in the household
Collfarm	equals 1 if a member of the household works on a farm collective
Collfarman	equals 1 if a member of the household farms animals on a collective
Collfish	equals 1 if a member of the household fishes on a collective
Y Pred	estimated outcome from first stage regressions

Distribution of the Sample

The distribution of the sample was calculated for the entire sample population and also for only adult men.

Geographic Distribution

Since the provinces are weighted according to population, the distribution of the sample population is uneven. The fewest observations are found in Shandong, accounting for 9.28% of the observations. The most are found in Guangxi, where 15.17% of the sample population resides. The sample is heavily rural, as is common in China- more than 68% of Chinese live in rural areas, with over half living in villages, and only 15.14% live in a city. The remainder of the Chinese population lives in suburbs and towns.

Age and Educational Distribution

The sample is mostly between the ages of 25 and 54 (65.90%) and only 10% are between 20 and 24 years old. About 35% have had at least some lower middle school education, while only just over 10% have no education at all. China has recently been pursuing a universal education policy. Due to non-participation, only the poorest do not receive education. The oldest have also not had a chance to benefit from this program, so those with no education are likely to be in the poorest areas or to be rather old.

Income Distribution

In spite of China's aggressive universal education policy and opening of markets, over 61% of this sample has 4 or less items counting towards the income index. While the majority owns very little, just over a quarter owns 6 to 11 items, indicating that wealth is growing for some. This may be an indicator that China is facing increasing disparities in wealth. A rising middle class may begin to enjoy better health care than the poorer population, thus creating a split China must soon address with more proactive health policies.

Social Group Distribution

Since this group is adult males, the prevalence of cadre members is significantly higher than in the overall population (6.03% versus 3.45%). Women and younger men are not as likely to be involved in an official cadre as older, often more educated, men. The same is true of being in a village cadre: 2.65% of adult men are members, which is almost twice the rate of the rest of the population.

Family structure changes significantly once men become adults: in the total sample, 42.24% live with their fathers and 45.03% also have a mother in the house. Only 20.27% of the adult men have a father in the house and 26.47% have a mother. Those who have a parent in the house may gravitate towards a more traditional family structure than those who make themselves independent once they are adults. Due to increased population mobility, traditional family structures are becoming less and less common, as many are now leaving their communities to seek jobs elsewhere.

Since much of the population is rural, 54.43% of the adult men are in a household that is in some way associated with a farm collective. A total of 50.76% are in households in which a member farms animals on collective. Not surprisingly, since most of the provinces surveyed are landlocked, only 1.89% find themselves in any way associated with fishing collectives. Over the years China has somewhat retained its rural agricultural structure and so many of the rural residents are still involved with collectives or farming.

Health Behavior Distribution

Addictive health behaviors are more widespread in the adult male sample than in the general sample. Of the adult males, 69.97% smoked at some point in their lives. Pokorski puts this number at a lower rate of 60%, but he accounts for men of all ages. Of those who have ever smoked, 92.85% continue to smoke. 62.84% of adult men have had alcohol in the year before the survey was taken. The high rate of prevalence of these behaviors is fairly alarming. Alcohol consumption may not be an indicator of alcoholism or poor health itself, since moderate indulgence can be good for health. However, this high rate of cigarette consumption is alarming because it is precisely the adult men, who will one day retire and perhaps be dependent upon their families who will experience future health problems. This could lead to a spike in health problems at the end of this generation. The ensuing health crisis could put a heavy financial and health burden on the next generation, which will have to support the health care of the smokers in their families. (Table 2)

Health Behavior Variables: Means and Significant Variances

All health behaviors: ever smoking, continued smoking, drinking in the last year, and amount of cigarettes and alcohol consumed are examined for mean across provinces, geographical stratum, urban versus rural location, categories for level of education, categories for age, categories for level of income, and the social group variables for cadre, parental membership in the household, and family membership to a collective. These conditional means were then examined for statistically significant variance from the overall mean by ANOVA.

Provinces were not consistent determinants of health behavior. While they are significant predictors at the 1% level for the individual variables, there is no overall pattern that would indicate a trend or culture in one particular province that does not exist in another. For example, in Henan there is a significantly higher rate of smoking at some point in an individual's life, but a lower rate of consumption of cigarettes and a lower rate of continued smoking. These changing patterns across provinces indicate no dynamic at work that uniformly differentiates them from each other in a range of high to low intensity consumption. Ever smoking, continued smoking, and drinking in the last year were also arbitrarily determined by some provinces, but not in any pattern.

Stratum is a good indicator for continued smoking and for the amount of consumption of both alcohol and cigarettes. The choice of trying to smoke or to drink alcohol is uniform across all regions, but continuation of this behavior, and its intensity, is associated with geographic location. Men in villages smoke the most, with a continuing smoker rate of 95.87% and men in cities smoke the least at 85.52%. This is corroborated by the distribution of current smokers between urban and rural areas. This means that an increasing problem of health disparity between rural and urban locations could emerge and create policy problems.

Like province, education seems to have little continuous effect on health behaviors, but it is a significant determinant in some way for each of the health behavior. Interestingly, individuals without education have lower rates of ever smoking, continuing to smoke, drinking alcohol in the last year, and consuming cigarettes. This may be because they are too poor to afford these goods. Age is also a significant predictor, but unlike education, it shows a clearer overall pattern: dcig, dalc, and cigamt are distributed in convex patterns. The middle age group has tried smoking more often, had alcohol in the last year more often, and consumes the most cigarettes per day, while the younger and older age groups engage less frequently. This may be because the younger aged men have not yet had ample opportunity to experiment with cigarettes and alcohol, and because those in the older generation who consumed massively have died, and other have quit due to health reasons.

Income does not appear to be a good overall indicator for health behavior. It is a significant predictor for continued smoking, having alcohol in the last year, and amount of alcohol consumed, but only at the 5% and 10% error probability level for the latter two. Only the first income group significantly deviates from the overall mean: in ever smoking, group members tried smoking more often than the rest of the sample, and in dalc, group members were less likely to have had alcohol in the last year.

Official cadre membership shows significance at the 10% level for continued smoking. Members of the cadre continue to smoke at a lesser rate (89.13%) than those who are not in the cadre (93.08%). Village cadre membership is significant at the 1% level for both ever smoking and drinking in the last year. Of village cadre members, 84.61% have ever smoked and 82.02% have had alcohol in the last year. This is much higher than their non-cadre counterparts, of whom only 70.19% had ever smoked and 62.88% have had alcohol. This may indicate a penchant for social drinking and smoking, but not for overall consumption, which may be perpetuated amidst the ranks of the village cadres.

An individual in a household with a father was much less likely at the 1% level to have ever tried smoking, to have had alcohol in the last year, and tends to consume fewer cigarettes and less alcohol. The only anomaly is that those who have ever smoked have a higher likelihood of remaining smokers if they have a father in the household. The same pattern holds for having a mother in the household. This may be because those who remain in a more traditional family structure may hold different attitudes towards smoking and drinking. However, it may also be due to the fact that those who do have parents in the household are also still younger. (Table 6)

A family association with a farm or animal farm collective predisposes those in the sample who have ever smoked to continue smoking at a slightly higher rate than their non-collective counterparts. Those associated with farm collectives continue to smoke at a rate of 95.10% and those associated with animal farm collectives at 95.12%, compared to the

90.20% and 90.49%, respectively, of those who are not. At the 10% level, they are predictive, respectively, of drinking more alcohol and smoking more cigarettes.

Association with a fishing collective is a determinant at the 10% level for having ever smoked at a higher rate, and at the 1% level for having had alcohol in the last year. Those associated with fishing collectives also consumed more cigarettes. These variations may come from cultures embedded within each type of collective. Those who are involved with fishing might drink more often than those in farm collectives because it is part of a tradition, which decidedly implicates social interactions in a health behavior. (Table 3)

Results: Regression Analysis

Stage 1 Regressions

Each model was estimated with every social group variable individually and also with all social group variables jointly.

Logit Models: (Table 4)

The models for ever smoking with only one individual social group variable show that having a father or mother in the household reduces the odds of ever smoking ($p<.01$). However, the effects of having a parent in the household can be argued to be insignificant as this has little bearing on social group dynamics. Household association with a farm collective is also associated with lesser odds of ever smoking. Being a village cadre member has a generally positive effect on having ever smoked. Tested jointly, the hypothesis that all social group variables equal zero can be rejected at a Chi Squared value of 31.60. (Table 11) This insinuates that some of the social group circumstances explored have an effect on the initial decision to smoke. Village cadres may simply interact more over cigarettes than the general population, as they are in a position in which social interaction is highly important. Farm collectives may simply propagate a culture in which fewer individuals smoke.

Whether or not an individual smokes at present is only significantly influenced by having a mother in the household, which increases the likelihood of continuing to smoke after starting to smoke. However, while having a mother in the household remains significant at the 5% level in a regression with all social group variables included, there is no joint significance amongst the social group variables. Since cigarettes are addictive, it would make sense that a continuation of the behavior has little to do with what social group one is associated with. Since having a mother in the household is not fully an indicator of social group in the say that cadre membership or collective membership is, continuing smoking seems to see little social group effect.

Alcohol consumption in the last year was positively affected by being in a village cadre or in household membership to a fishing collective. This possibly indicates a cultural tendency towards social drinking. Having a father or mother in the household predisposes to a decreased likelihood of drinking, but again, the argument against family structure as social group makes this a moot point. A Wald test performed on a regression including all social group variables indicates that they are jointly significant with a Chi Squared value of 16.14. (Table 22) This would indicate that, like ever smoking, drinking in the last year is associated with social interaction and cultural norms of the groups to which an individual belongs.

<u>OLS models:</u> (Table 4)

An individual in a household with a father or in a household associated with a fishing collective smokes on average 1.35 and 1.34 cigarettes less per day, respectively, than his counterparts. A man living in a household with his mother tends to smoke .89 cigarettes less per day, but this is probably insignificant in terms of social interaction. Neither of these factors are significant in a model including all social group variables, and joint significance can be rejected at the 5% level. (Table 17)

Alcohol consumption is affected by association with an animal farming collective, which is associated with a reduction of 2.98 drinks per week compared to those not associated with farming collectives. However, association with a farming collective only becomes significant at the 10% level, and joint significance can be rejected at the 5% level. (Table 25) This indicates rather weak associations with drinking behavior.

When alcohol consumption is only considered at 15 or more drinks per week, which is considered unhealthy, association with a fishing collective indicates that those who do qualify as heavy drinkers consume less than all other heavy drinkers. A member of a family associated with a fishing collective consumes 7.88 drinks less than the average drinker in the group consuming 15 or more drinks per week. A regression with all variables indicated that only the family association with a fishing collective was significant. Joint significance can be rejected. (Table 28)

The overall pattern indicates that having a mother or a father in the household has a positive influence on health behaviors, but that it has little bearing on social group membership. Cases in which smoking or drinking does increase while a parent is in the household may stem from reinforcement by the parents due to their own behavior, not from social group norms. A study on the effects of parental alcohol consumption on their childhood behavioral problems performed by Jones et al yielded similar results- it was concluded that parental drinking had a negative influence on behavior. (Jones et al., 1999, pp.663-682) As mentioned before, a factor in this may be simply that those whose parent live with them prefer a more traditional lifestyle and eschew cigarette and alcohol more than the average adult Chinese male.

While official cadre membership was not significant, village cadre membership was correlated overall with engaging in social drinking and smoking. It is surprising that neither cadre nor village cadre membership are correlated with consumption, since cigarettes and alcohol serve in those circles as gifts of appreciation, payment, and so forth. It seems that being a village cadre predisposes towards social interaction with a community, and thus perhaps social smoking and drinking becomes a way to strengthen bonds with the members of the community. For example, they may be treated as guests of honor and be offered cigarettes and alcohol at dinners and gatherings to curry favor. Chinese society strongly values respect of superiors and emphasizes these interactions.

Association with agricultural and fishing collectives shares no common pattern in the health behaviors or in the consumption patterns beyond the fact that both household association with a farming collective and collectives that farm animals is associated with having ever smoked. However, each collective group did have some significant bearing on consumption or behavior, and this perhaps suggests that the different collectives and the families associated with them sustain different cultures. It may be a tradition for fishermen to have drinks together, or for farmers to take a break and have a cigarette as a social outlet. Social interaction is highly important for the development of social capital in China. It may be that within these collectives, different nuances of addictive behavior are associated with the preferred types of social graces, such as having a cigarette while taking a break from planting. (Tables 4a and 4b)

Stage 2 Regressions

The stage 2 regressions were designed to determine the effect of the amount of cigarettes and alcohol consumed has on health. The only significant effect on health was seen in the predicted amount of cigarettes smoked, obtained from the regressions with amount of cigarettes consumed as the dependent variable. In the case of cigarettes, the effect was uniformly negative and significant, which was not true of the predicted amount obtained from the regressions on the amount of alcohol consumed. The effects from alcohol are not statistically significant, but they are all negative. The lack of significance may be attributed to the fact that not all alcohol consumption is necessarily damaging to health, as opposed to cigarette consumption, which is never healthy.

The coefficients for the predicted consumption of cigarettes is an order of magnitude greater than those for the predicted amount of alcohol consumed. This may be due to the fact that not all alcohol consumption is negative, to which one might also attribute the fact that the amount of alcohol consumed does not appear statistically significant. Moreover, cigarettes are measured by numbers consumed per day, and alcohol is measured by drinks consumed each week, so the effect of alcohol simply may be more diluted because it is not as addictive and not consumed at the same rate as cigarettes are.

Combined with other negative health behaviors the negative effects of cigarette and alcohol consumption might be compounded or multiplied. Since health problems tend to disproportionally affect low income groups economically, this may be more damaging for lower income individuals than for rich ones. (Table 5)

The Endogeneity Problem

The problem of endogeneity, or reflection effects, merits serious consideration in these data and models. The social group variables are influenced by the control variables in almost every case, so there may be an issue with bias in the model estimations. Thus, a cross tabulation and ANOVA of all control variables with the social group variables was performed to examine how they were interrelated. If a variable, such as province, were associated with both a social group and a health behavior, a bias may be found in the model.

Province is a significant determinant for all of the social group variables; there is no pattern in how they influence them. Stratum is significant for all, with exception of having a father in the household. Particularly the agricultural and fishing collectives are affected by stratum. All are influenced by urban versus rural location. Education plays a strong role in cadre membership, and also correlates to association with a farm or farm animal collective. Age is also significant for every social group variable, despite omission of the youngest age group. The second youngest age group had the highest rates for having parents in the household. Income was also strongly correlated, but many of the social group variables could have been the cause, not the effect- for example, one would expect a cadre member to have a high income, and the results confirm this. Those in the collectives tend to have lower income by the nature of lower skilled work.

Many of the factors influencing social group also influence health behavior. For example, there is overlap between the provinces that are significant determinants of ever smoking and for village cadre membership. Geographical stratum is also strongly linked to both health behaviors and social groups. Collectives and village cadres are much more common in rural strata, as are current smokers. The same type of correlations were true for age, education, and income as well, so some doubt must be cast upon the validity of the results of the models. As there is indeed some intercorrelation, there may well be a problem with bias. Obviously, these results and the problem with bias will necessitate independent validation of the results.

In spite of these issues, the results should not be cast aside entirely. Quite a few control variables were often shown to be insignificant in the models, while they showed siginificance in the ANOVA. For example, using the amount of cigarettes consumed as the dependent variable in a linear regression, with household membership to a farming collective as the social group variable, only provinces that appear significant at first glance (Table 3) are shown not to be in the regression, while membership to a farming collective is. Income is also not statistically significant, while it is correlated to association with farming collectives. (Table 16) It is often the case that in the regression, the control variables which appeared to be significant determinants for the health behavior and for the social group appear negligible even when the social group variable is significant. The problem of reflection effects clearly exists, but may not mean the invalidity of the analysis as so many of the variables controlling for location and human factors show no significance. (Table 6)

Conclusion

While there is some issue with reflection effects in the analysis, social group does appear to have effects on health behavior. Village cadre membership appears significant and fairly unimpinged by the reflection problem. It also has the likely explanation that being a village cadre exposes the individual to social interaction that entails cigarette and alcohol consumption. Besides village cadre membership, the farming and fishing collectives seem the most likely candidates for important social group interaction. They each have different consumption profiles, which may mean that they sustain different traditions and cultures. These may possibly affect how a person approaches smoking and drinking in a social context.

As Durlauf suggests, social group membership is a fickle thing by nature. The definition alone is subject to debate. In this analysis, social group is defined by what groups most likely have clearly delineated social interaction and may drive health behaviors. It may be of great interest to further investigate different subcategories of groups not covered in this dataset.

Since so many Chinese men smoke, it is reasonable to believe that China will face a growing health care provision issue as these men grow older and begin to suffer the consequences of their addiction. As seen in Sri Lanka, financial dependency on the family could consume much of the family's capital that could be productive. Should China choose to actively pursue a health education campaign that encompasses smoking and drinking, a good strategy might be to devise a plan that specifically targets the young and those of the lower income groups, as they stand to suffer the most from addictions. By focusing on the health behavior cultures of groups like those working on agricultural or fishing collectives and their family members, it may be possible to both target a group that is vulnerable due to both its culture and its low income. It may be too late to implement policy that is effective for the middle aged men who are already addicted to smoking or to alcohol, but a campaign to intervene for the younger generation may see a payoff as this generation ages.

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APPENDIX

Figure 1. Map of China. Darkly shaded regions denote the provinces included in the survey for all four data collection years. (China Health and Nutrition Survey, 2001)

Table 2.

Sample Distribution By Variable		**Percent of Sample: Entire Sample**	**Distribution of Adult Men Only**	**Percent of Sample: Adult Men Only**
Province				
Province 1: Liaoning	1,249	11.19	402	11.33
Province 2: Jiangsu	1,377	12.33	490	13.81
Province 3: Shandong	1,071	9.59	329	9.28
Province 4: Henan	1,279	11.46	393	11.08
Province 5: Hubei	1,491	13.35	469	13.22
Province 6: Hunan	1,386	12.41	432	12.18
Province 7: Guangxi	1,683	15.07	538	15.17
Province 8: Guizhou	1,629	14.59	494	13.93
Total	11,165	100.00	3,547	100.00
Stratum				
1: city	1,451	13.00	537	15.14
2: suburb	1,815	16.26	572	16.13
3: town	1,744	15.62	587	16.55
4: village	6,155	55.13	1,851	52.18
Total	11,165	100.00	3,547	100.00
Urban				
Rural	7,970	71.38	2,423	68.31
Urban	3,195	28.62	1,124	31.69
Total	11,165	100.00	3,547	100.00
Age				
1: less than 20	3,788	34.01	-	-
2: 20 to 24	658	5.91	353	9.99
3: 25 to 54	4,885	43.85	2,328	65.89
4: over 54	1,808	16.23	852	24.12
Total	11,139	100.00	3,533	100.00
Education				
1: none	2,393	21.79	375	10.63
2: some primary	3,087	28.10	799	22.65
3: primary	992	9.03	397	11.26
4: some lower middle	3,148	28.66	1,265	35.87
5: some upper middle	923	8.40	432	12.25
6: beyond	441	4.01	259	7.34
Total	10,984	100.00	3,527	100.00

Table 2, ctd.

Sample Distribution By Variable		Percent of Sample: Entire Sample	Distribution of Adult Men Only	Percent of Sample: Adult Men Only
Income				
1: 1st Quartile	3,499	31.45	1,062	30.06
2: 2nd Quartile	3,618	32.52	1,099	31.11
3: 3rd Quartile	1,469	13.20	467	13.22
4: 4th Quartile	2,541	22.84	905	25.62
Total	11127	100.00	3,533	100.00
Sex				
Male	5,554	49.74		
Female	5,611	50.26		
Total	11,165	100.00		
Dicadre				
No	8,123	96.53	3,287	93.97
Yes	292	3.47	211	6.03
Total	8,415	100.00	3,498	100.00
Divcadre				
No	8,143	98.64	3,337	97.35
Yes	112	1.36	91	2.65
Total	8,255	100.00	3,428	100.00
Fatherhh				
No	6,428	57.76	2,819	79.70
Yes	4,700	42.24	717	20.27
Total	11,128	100.00	3,537	100.00
Motherhh				
No	6,092	54.97	2,586	73.53
Yes	4,990	45.03	931	26.47
Total	11,082	100.00	3,517	100.00
Collfarm				
No	4,670	41.89	1,614	45.57
Yes	6,479	58.11	1,928	54.43
Total	11,149	100.00	3,542	100.00

Table 2, ctd.

Sample Distribution By Variable		Percent of Sample: Entire Sample	Distribution of Adult Men Only	Percent of Sample: Adult Men Only
Collfarman				
No	5,090	45.65	1,744	49.24
Yes	6,059	54.35	1,798	50.76
Total	11,149	100.00	3,542	100.00
Collfish				
No	10,917	97.81	3,478	98.11
Yes	244	2.19	67	1.89
Total	11,161	100.00	3,545	100.00
Dcig				
No	6,373	69.38	1,056	30.03
Yes	2,813	30.62	2,461	69.97
Total	9,186	100.00	3,517	100.00
Dcignow				
No	230	8.21	174	7.15
Yes	2,573	91.79	2,259	92.85
Total	2,803	100.00	2,433	100.00
Dalc				
No	6,347	69.03	1,304	37.16
Yes	2,848	30.97	2,205	62.84
Total	9,195	100.00	3,509	100.00

Table 3. Means of Health Behavior Variables across Control Variables for First Stage Model

* denotes p-value less than or equal to 1%, ** denotes p-value greater than 1%, less than or equal to 5%; *** denotes p-value greater than 5%, less than or equal to 10%

Means of Health Behavior Variables across Control Variables for First Stage Model	**Dcig (ever smoked)**	**Dcignow (continuing smoking)**	**Dalc (had alcohol in the last year)**	**Cigamt (amount of cigarettes consumed in a day)**	**Alcamt (amount of alcoholic drinks consumed in a week)**
Province					
Province 1: Liaoning	.680798	.9444444	.6791045**	14.60456**	10.94643
Province 2: Jiangsu	.6900826	.9018405**	.607438	14.39189*	9.316514***
Province 3: Shandong	.721875	.8767123*	.6835443**	14.57672**	15.91549*
Province 4: Henan	.7704082*	.9081633	.6760204**	14.56044**	7.784314*
Province 5: Hubei	.6393089*	.9297659	.5593952*	18.26937*	11.47826
Province 6: Hunan	.7009346	.9395973	.5294118*	18.35*	15.72881*
Province 7: Guangxi	.6499069*	.9457143	.6405959	15.99695	9.614943
Province 8: Guizhou	.7642276*	.9602122*	.6714286*	14.98324***	11.42279
Total	.6997441	.9284834	.6283842	15.73561	10.68805
Stratum					
1: city	.6829268	.8552279*	.6497175	14.48562*	7.033149*
2: surburb	.6878307	.9660574*	.6455026	16.6442**	9.857843
3: town	.7123288	.897561*	.6209262	15.34853	10.49474
4: village	.7043099	.9486977*	.619256	15.90092	12.22913*
Total	.6997441	.9284834	.6283842	15.73561	10.68805
Urban					
No	.7004167	.9527273	.6254697	16.07634	11.59844
Yes	.698299	.8773946	.6346499	14.95481	8.80593
Total	.6997441	.9284834*	.6283842	15.73561*	10.68805*
Education					
1: none	.6827957	.87251*	.5203252*	14.81818***	12.0098
2: some primary	.7243995***	.9288256	.6207332	16.42991**	11.98837***
3: primary	.7048346	.9316547	.6338384	16.88506**	14.07087*
4: some lower middle	.718949***	.9483146*	.6337349	15.64362	10.00503
5: some upper middle	.676815	.9480969	.6867749*	15.83824	9.046053
6: beyond	.5891473*	.86*	.6692607	12.83206*	6.505155*
Total	.7000286	.9285124	.6279736	15.7579	10.66402

Table 3, ctd.

Means of Health Behavior Variables across Control Variables for First Stage Model	Dcig (ever smoked)	Dcignow (continuing smoking)	Dalc (had alcohol in the last year)	Cigamt (amount of cigarettes consumed in a day)	Alcamt (amount of alcoholic drinks consumed in a week)
Age					
2: 20 to 24	.6074499*	.9615385***	.5158501*	12.42289*	6.963303*
3: 25 to 54	.7304197*	.9532094*	.6730269*	16.3237*	10.99484
4: over 54	.6599764*	.8417266*	.5579196*	15.14009***	11.27778
Total	.7011691	.9284245	.6296085	15.73271	10.67077
Income					
1: 1st Quartile	.7111742**	.9393531	.5948767*	15.54964	10.65598
2: 2nd Quartile	.7108656	.9447368	.6233886	16.39724	10.83939
3: 3rd Quartile	.6803456	.9225806	.6457883	15.26855	11.2293
4: 4th Quartile	.6837416	.8968903	.6625561	15.30713	10.27243
Total	.6999715	.9281882	.6277539	15.72844	10.687
Dicadre					
No	.7041692	.9308065	.630722	15.73428	10.65144
Yes	.6619048	.8913043	.6507177	15.78151	10.01639
Total	.7016129	.9285418***	.6319284	15.73679	10.61728
Divcadre					
No	.7019928	.9298475	.6288566	15.73034	10.79182
Yes	.8461538	.9480519	.8202247	17.32394	12.5
Total	.7058478*	.9304384	.6338733*	15.7816	10.84414
Fatherhh					
No	.720457	.9218045	.6429593	16.15196	11.41612
Yes	.6203966	.9584296	.5698006	13.85132	7.723502
Total	.700114*	.9283361*	.6281063*	15.72614*	10.71013*
Motherhh					
No	.7246208	.918611	.6468069	16.16224	11.39645
Yes	.6303162	.9597198	.577218	14.39305	8.731707
Total	.699828*	.9283347*	.628555*	15.7306*	10.72085*
Collfarm					
0	.7001247	.9020481	.6285178	15.7972	9.97053
1	.6996855	.9510329	.6272966	15.69617	11.33974
Total	.6998861	.9283951*	.6278539	15.74102	10.72462***
Collfarman					
0	.6960784	.9049208	.6358382	15.41335	10.59735
1	.7035996	.9512591	.6200676	16.04167	10.83609
Total	.6998861	.9283951*	.6278539	15.74102***	10.72462

Table 3, ctd.

Means of Health Behavior Variables across Control Variables for First Stage Model	**Dcig (ever smoked)**	**Dcignow (continuing smoking)**	**Dalc (had alcohol in the last year)**	**Cigamt (amount of cigarettes consumed in a day)**	**Alcamt (amount of alcoholic drinks consumed in a week)**
Collfish					
No	.6977958	.9285114	.6245278	15.69144	10.78785
Yes	.7910448	.9245283	.8181818	17.89796	7.030303
Total	.6995733***	.9284245	.6281722*	15.73936***	10.6787

Table 4a. Stage 1 Regressions:

Dcig, Dcignow, or Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice or liqprice and beerprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

Coefficients for social group variables from regression analysis	**Dcig (ever smoked)**	**Pseudo R-Squared**	**Dcignow (continuing smoking)**	**Pseudo R-Squared**	**Dalc (had alcohol in the last year)**	**Pseudo R-Squared**
Individually						
Dicadre	-.0343149	0.0218	.3018181	0.1296	-.0330995	0.0355
Divcadre	.6414036**	0.0210	.4846309	0.1276	.8743772**	0.0381
Fatherhh	-.5009105*	0.0271	.5558825	0.1336	-.2923307**	0.0389
Motherhh	-.4796093*	0.0270	.9655656**	0.1406	-.3629186*	0.0390
Collfarm	-.3393252*	0.0239	.1317527	0.1315	.1759074	0.0371
Collfarman	.0015566	0.0218	.2193392	0.1320	.059559	0.0367
Collfish	.3416679	0.0222	-.4608019	0.1315	1.169139**	0.0387
Jointly		0.0304		0.1403		0.0436
Dicadre	-.1154121		.3133957		-.0117725	
Divcadre	.678643**		.5560337		.7566341**	
Fatherhh	-.3043777**		.0638244		-.1167991	
Motherhh	-.2915487**		1.009358**		-.2847113***	
Collfarm	-.4402616*		.0284914		.1758476	
Collfarman	.1270058		.3190628		.0323587	
Collfish	.2457582		-.4689922		1.023034***	

For more detail, see Tables 7-28

Table 4b. Stage 1 Regressions:

Cigamt, Alcamt, or Alcamt greater then 15 = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice or liqprice and beerprice + ß social group variable (dicadre, divcadre, fatherhh, motherhh, collfarm, collfarman, or collfish)

Coefficients for social group variables from regression analysis	**Cigamt (amount of cigarettes smoked in a day)**	**R-Squared**	**Alcamt: (amount of drinks in a week)**	**R-Squared**	**Alcamt: (amount of drinks in a week) only those who drink 15 or more drinks per week**	**R-Squared**
Individually						
Dicadre	-.3647244	0.0753	.9463305	0.0826	-1.292185	0.1685
Divcadre	1.104484	0.0747	-.6403768	0.0771	-6.219591	0.1722
Fatherhh	-1.354132*	0.0800	-2.470975**	0.0866	-5.284311	0.1674
Motherhh	-.8964115***	0.0792	-1.471445	0.0856	-4.897392***	0.1685
Collfarm	-1.342992**	0.0795	-.398831	0.0828	-5.129247	0.1670
Collfarman	-.1256749	0.0764	-2.978782***	0.0877	-5.130129	0.1714
Collfish	1.262615	0.0762	-2.328406	0.0826	-7.884525**	0.1639
Jointly		0.0823		0.0856		0.2001
Dicadre	-.5224489		.9911574		-2.464009	
Divcadre	1.066881		-.2374955		-4.626725	
Fatherhh	-1.163023***		-2.371968		-3.675171	
Motherhh	-.2756822		.028009		-2.958117	
Collfarm	-1.476367**		.1114368		-3.685145	
Collfarman	.3598633		-2.953469		-4.064876	
Collfish	1.062036		-2.012896		-7.212874**	

For more detail, see Tables 7-28

Table 5. Stage 2 Regressions: Health Effects

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

Stage 1 Regression denoted by which Social Group Variable was used	**Effect of Y Pred (predicted outcome) from regressions with dependent variable Cigamt**	**R-Squared**	**Effect of Y Pred (predicted outcome) from regressions with dependent variable Alcamt**	**R-Squared**
Dicadre	-.0260599*	0.0962	-.003627	0.1064
Divcadre	-.027535*	0.0962	-.0040545	0.1059
Fatherhh	-.016236**	0.0937	-.0010423	0.1075
Motherhh	-.0179723**	0.0939	-.0013137	0.1051
Collfarm	-.0198725*	0.0940	-.0025323	0.1072
Collfarman	-.0225032*	0.0944	-.0050739	0.1075
Collfish	-.0214781**	0.0941	-.0031639	0.1071
Joint	-.0176638*	0.0944	-.0043278	0.1035

For more details, see Tables 29-44

Table 6. Means of Social Group Variables across Control Variables for First Stage Model

Control Variable	Dicadre	Divcadre	Fatherhh	Motherhh	Collfarm	Collfarman	Collfish
Province							
Province 1: Liaoning	.105*	.005305*	.1741294	.181592*	.4129353*	.3109453*	.0025**
Province 2: Jiangsu	.0572597	.0189474	.2142857	.2755741	.5979592*	.5265306	.0020408*
Province 3: Shandong	.0747664	.028125	.2236025	.2789969	.4907407**	.3641975*	0*
Province 4: Henan	.0727273	.0415584**	.1994885	.247449	.697201*	.5954198	.0305344***
Province 5: Hubei	.0478261	.0386364***	.1944444	.2553648	.5692964	.5245203	.0255864
Province 6: Hunan	.0748792	.041769***	.1481481*	.2023256*	.3865741*	.3958333*	.0300926***
Province 7: Guangxi	.0167598*	.0300188	.2732342*	.3731343*	.5501859	.633829*	.0241636
Province 8: Guizhou	.054878	.0101833**	.2004049	.2718053	.6194332*	.6174089*	.0303644**
Total	.0603202*	.0265461*	.2052587*	.2647142*	.5443252*	.5076228*	.0188999*
Stratum							
1: city	.1669794*	.0041322*	.2122905	.2626642	.0521415*	.0428305*	0*
2: surburb	.0593525	.0309091	.1975309	.2486679	.3756614*	.4356261*	.0524476*
3: town	.109589*	.013986**	.225256	.3259005*	.1022147*	.1345826*	.0085179**
4: village	.0136986*	.0351262*	.199242	.2508161***	.8789843*	.7828201*	.0173067
Total	.0603202*	.0265461*	.2052587	.2647142*	.5443252*	.5076228*	.0188999*
Urban							
No	.0243595	.0341484	.1988401	.2503124	.7609595	.7014061	.0256093
Yes	.136974	.0094697	.2190561	.2956989	.0782918	.0907473	.0044484
Total	.0603202*	.0265461*	.2052587**	.2647142*	.5443252*	.5076228*	.0188999*
Education							
1: none	.0082192*	.0055096*	.0428954*	.0891892*	.6533333*	.6*	.016
2: some primary	.0127877*	.0205392	.1553885*	.1861635*	.649562*	.6070088*	.0275344**
3: primary	.0357143**	.0336788	.0881612*	.1620253*	.6035354**	.5606061**	.0277778
4: some lower middle	.0350598*	.0321543	.2827641*	.3624*	.5638382***	.518636	.0142405
5: some upper middle	.1095571*	.0435835**	.3132251*	.3761682*	.4282407*	.4027778*	.0231481
6: beyond	.3604651*	.0088496***	.2200772	.2664093	.0733591*	.1042471*	0**
Total	.0606148*	.0266784*	.2055729*	.2653703*	.5445769*	.5073822*	.0190071**

Table 6, ctd.

Control Variable	Dicadre	Divcadre	Fatherhh	Motherhh	Collfarm	Collfarman	Collfish
Age							
2: 20 to 24	.0114613*	.0058824**	.8428571*	.9457143*	.59375**	.5653409**	.0113636
3: 25 to 54	.0646701	.0344675*	.1786483*	.2438285*	.5792866*	.5272884*	.0240653*
4: over 54	.069378	.0134639*	.0070588*	.0331361*	.4275618*	.426384*	.008216*
Total	.0604758*	.0266082*	.2032359*	.2631279*	.5442177*	.5068027*	.0189748*
Income							
1: 1st Quartile	.0114504*	.0143266	.1529745*	.2239089*	.7943396*	.7518868*	.0320151
2: 2nd Quartile	.0304428*	.0391061	.1910828**	.2381387	.6085766*	.5620438*	.0181984
3: 3rd Quartile	.0697168	.0353982	.251073**	.3036876**	.509636	.496788	.0107066
4: 4th Quartile	.150056*	.020214	.2591769**	.3273543	.1933702*	.1624309*	.0088594
Total	.0605626*	.026362*	.204939*	.2652013*	.5447846*	.5079365*	.0189748*

Table 7: First Stage Regression

Dcig = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß divcadre

Pseudo R2						
0.0210						
dcig	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.0923206	.1774812	-0.52	0.603	-.4401774	.2555361
province3	.1842485	.1929688	0.95	0.340	-.1939635	.5624604
province4	.4749475	.2364328	2.01	0.045	.0115477	.9383473
province5	-.0304163	.1977028	-0.15	0.878	-.4179068	.3570741
province6	.0100394	.1753189	0.06	0.954	-.3335792	.353658
province7	-.2510446	.1755906	-1.43	0.153	-.5951959	.0931067
province8	.4370404	.230515	1.90	0.058	-.0147608	.8888415
stratum2	-.2587971	.1685332	-1.54	0.125	-.5891162	.0715219
stratum3	-.150028	.1753	-0.86	0.392	-.4936097	.1935537
stratum4	-.1190116	.1577669	-0.75	0.451	-.4282291	.1902059
inc2	-.0688692	.1334974	-0.52	0.606	-.3305193	.192781
inc3	-.1592786	.1261448	-1.26	0.207	-.4065178	.0879606
inc4	-.1792028	.1231077	-1.46	0.145	-.4204894	.0620838
educ2	.1251145	.18286	0.68	0.494	-.2332845	.4835136
educ3	-.0685297	.2076158	-0.33	0.741	-.4754493	.3383898
educ4	-.0678054	.1832304	-0.37	0.711	-.4269303	.2913195
educ5	-.3450968	.2072386	-1.67	0.096	-.7512769	.0610834
educ6	-.5611996	.2329878	-2.41	0.016	-1.017847	-.104552
age3	.5526646	.1512335	3.65	0.000	.2562524	.8490767
age4	.3472471	.1824329	1.90	0.057	-.0103148	.704809
cigprice	.0122841	.0408068	0.30	0.763	-.0676957	.0922638
divcadre	.6414036	.3181878	2.02	0.044	.0177669	1.26504
_cons	.730404	.3239333	2.25	0.024	.0955063	1.365302

Table 8: First Stage Regression

Dcig = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß fatherhh

Pseudo R2						
0.0271						
dcig	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.0785699	.1725605	-0.46	0.649	-.4167823	.2596425
province3	.2227624	.1931672	1.15	0.249	-.1558383	.6013631
province4	.5280746	.2360802	2.24	0.025	.065366	.9907832
province5	-.0568952	.191609	-0.30	0.767	-.432442	.3186516
province6	.0165197	.1691503	0.10	0.922	-.3150088	.3480483
province7	-.2188375	.1713556	-1.28	0.202	-.5546884	.1170134
province8	.4150317	.2250045	1.84	0.065	-.025969	.8560324
stratum2	-.2546787	.1629328	-1.56	0.118	-.5740211	.0646637
stratum3	-.1438545	.1693333	-0.85	0.396	-.4757416	.1880327
stratum4	-.1361377	.1510493	-0.90	0.367	-.4321889	.1599135
inc2	-.0620386	.1332726	-0.47	0.642	-.323248	.1991708
inc3	-.2000908	.124316	-1.61	0.107	-.4437457	.043564
inc4	-.1806634	.120879	-1.49	0.135	-.417582	.0562552
educ2	.1604274	.1787243	0.90	0.369	-.1898659	.5107206
educ3	-.0787585	.2037101	-0.39	0.699	-.478023	.3205059
educ4	.0233827	.1801953	0.13	0.897	-.3297936	.3765589
educ5	-.2331403	.2045661	-1.14	0.254	-.6340825	.1678018
educ6	-.5979677	.2249997	-2.66	0.008	-1.038959	-.1569763
age3	.275849	.1728178	1.60	0.110	-.0628675	.6145656
age4	-.0535761	.211487	-0.25	0.800	-.4680829	.3609308
cigprice	.0121574	.0408795	0.30	0.766	-.0679648	.0922797
fatherhh	-.5009105	.1275919	-3.93	0.000	-.750986	-.2508349
_cons	1.062111	.332372	3.20	0.001	.4106739	1.713548

Table 9: First Stage Regression

Dcig = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß motherhh

Pseudo R2						
0.0270						
dcig	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.0677762	.1727419	-0.39	0.695	-.4063441	.2707918
province3	.2489915	.1933804	1.29	0.198	-.1300271	.62801
province4	.5098484	.2340682	2.18	0.029	.0510831	.9686138
province5	-.0446725	.1914571	-0.23	0.816	-.4199214	.3305765
province6	.0507644	.1689032	0.30	0.764	-.2802798	.3818087
province7	-.1826289	.1715692	-1.06	0.287	-.5188984	.1536406
province8	.4628505	.2263353	2.04	0.041	.0192416	.9064595
stratum2	-.2598065	.1633906	-1.59	0.112	-.5800462	.0604333
stratum3	-.0977116	.1697208	-0.58	0.565	-.4303582	.2349351
stratum4	-.1214658	.1514172	-0.80	0.422	-.4182381	.1753064
inc2	-.080416	.1329512	-0.60	0.545	-.3409955	.1801635
inc3	-.2053093	.1246782	-1.65	0.100	-.4496742	.0390555
inc4	-.1917602	.1213199	-1.58	0.114	-.4295429	.0460226
educ2	.1590301	.1784266	0.89	0.373	-.1906796	.5087399
educ3	-.0406175	.2041717	-0.20	0.842	-.4407866	.3595516
educ4	.0317405	.1795227	0.18	0.860	-.3201175	.3835984
educ5	-.2229213	.2032891	-1.10	0.273	-.6213606	.1755179
educ6	-.5848711	.2245226	-2.60	0.009	-1.024927	-.144815
age3	.2969887	.1662277	1.79	0.074	-.0288117	.6227891
age4	-.0543401	.20617	-0.26	0.792	-.458426	.3497458
cigprice	.0100429	.0410221	0.24	0.807	-.0703589	.0904447
motherhh	-.4796093	.1189734	-4.03	0.000	-.7127928	-.2464257
_cons	1.038541	.3278178	3.17	0.002	.3960297	1.681052

Table 10: First Stage Regression

Dcig = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß collfarm

Pseudo R2						
0.0239						
dcig	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.0302299	.1732404	-0.17	0.861	-.3697748	.309315
province3	.1799199	.1886795	0.95	0.340	-.189885	.5497249
province4	.5693884	.2325859	2.45	0.014	.1135284	1.025248
province5	-.0102645	.1916303	-0.05	0.957	-.385853	.365324
province6	.0246584	.1695911	0.15	0.884	-.3077341	.3570509
province7	-.2087845	.1726195	-1.21	0.226	-.5471125	.1295435
province8	.5090362	.2248779	2.26	0.024	.0682837	.9497888
stratum2	-.1486388	.1650842	-0.90	0.368	-.4721978	.1749202
stratum3	-.1415115	.1706843	-0.83	0.407	-.4760465	.1930235
stratum4	.1431045	.1753717	0.82	0.414	-.2006177	.4868268
inc2	-.025343	.1327475	-0.19	0.849	-.2855233	.2348373
inc3	-.1762952	.1237096	-1.43	0.154	-.4187616	.0661711
inc4	-.1896342	.1198323	-1.58	0.114	-.4245011	.0452328
educ2	.1450492	.1785247	0.81	0.417	-.2048527	.4949511
educ3	-.07869	.2030692	-0.39	0.698	-.4766984	.3193183
educ4	-.0292758	.1784782	-0.16	0.870	-.3790866	.3205351
educ5	-.3108868	.2018523	-1.54	0.124	-.70651	.0847365
educ6	-.6783843	.2266156	-2.99	0.003	-1.122543	-.2342258
age3	.6322071	.1470236	4.30	0.000	.3440461	.9203681
age4	.3532622	.1759558	2.01	0.045	.0083952	.6981292
cigprice	-.0076064	.0415511	-0.18	0.855	-.089045	.0738322
collfarm	-.3393252	.1321811	-2.57	0.010	-.5983955	-.0802549
_cons	.6836761	.3113489	2.20	0.028	.0734435	1.293909

Table 11: First Stage Regression

Dcig = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß dicadre + ß divcadre + ß fatherhh + ß motherhh + ß collfarm + ß collfarman + ß collfish

Pseudo R2	**Wald Chi Test for Social Group Variables Only**	**P-Value for Social Group Variables Only**				
0.0304	31.60	0.0000				
dcig	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.0098719	.1803084	-0.05	0.956	-.3632698	.3435261
province3	.292393	.2004446	1.46	0.145	-.1004713	.6852572
province4	.5543214	.2440194	2.27	0.023	.0760522	1.03259
province5	.0476374	.199839	0.24	0.812	-.3440399	.4393146
province6	.0134867	.177097	0.08	0.939	-.3336171	.3605904
province7	-.1486549	.1806536	-0.82	0.411	-.5027295	.2054196
province8	.4704863	.2345266	2.01	0.045	.0108226	.93015
stratum2	-.2411802	.1782977	-1.35	0.176	-.5906372	.1082769
stratum3	-.1579717	.1764785	-0.90	0.371	-.5038632	.1879198
stratum4	.0369987	.1924377	0.19	0.848	-.3401722	.4141696
inc2	-.0828447	.1364959	-0.61	0.544	-.3503717	.1846823
inc3	-.2086412	.1272938	-1.64	0.101	-.4581324	.04085
inc4	-.1959367	.1252283	-1.56	0.118	-.4413796	.0495063
educ2	.1381416	.1829217	0.76	0.450	-.2203784	.4966616
educ3	-.051186	.2102097	-0.24	0.808	-.4631894	.3608174
educ4	-.0314909	.1840479	-0.17	0.864	-.3922181	.3292363
educ5	-.2896153	.2108675	-1.37	0.170	-.7029079	.1236773
educ6	-.5593819	.2411366	-2.32	0.020	-1.032001	-.086763
age3	.1934551	.1784619	1.08	0.278	-.1563237	.5432339
age4	-.1638468	.2222137	-0.74	0.461	-.5993776	.2716839
cigprice	-.0061876	.0433234	-0.14	0.886	-.0910999	.0787247
dicadre	-.1154121	.1981069	-0.58	0.560	-.5036946	.2728703
divcadre	.678643	.3393598	2.00	0.046	.01351	1.343776
fatherhh	-.3043777	.1283802	-2.37	0.018	-.5559983	-.0527571
motherhh	-.2915487	.1358552	-2.15	0.032	-.55782	-.0252774
collfarm	-.4402616	.1490417	-2.95	0.003	-.732378	-.1481452
collfarman	.1270058	.1312373	0.97	0.333	-.1302145	.3842261
collfish	.2457582	.3346225	0.73	0.463	-.4100898	.9016063
_cons	1.284847	.3482326	3.69	0.000	.6023235	1.96737

Table 12: First Stage Regression

Dcignow = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß motherhh

Pseudo R2						
0.1406						
dcignow	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.4664298	.4058148	-1.15	0.250	-1.261812	.3289525
province3	-1.139933	.4403515	-2.59	0.010	-2.003006	-.2768602
province4	-.5983661	.5032822	-1.19	0.234	-1.584781	.388049
province5	.1128621	.4689935	0.24	0.810	-.8063482	1.032073
province6	-.1647387	.4283475	-0.38	0.701	-1.004284	.6748071
province7	.1773959	.4554522	0.39	0.697	-.715274	1.070066
province8	.7821261	.5780546	1.35	0.176	-.3508401	1.915092
stratum2	1.516955	.4186794	3.62	0.000	.6963586	2.337552
stratum3	.2136548	.3065552	0.70	0.486	-.3871824	.814492
stratum4	.9505873	.2985305	3.18	0.001	.3654783	1.535696
inc2	-.2914478	.2737024	-1.06	0.287	-.8278946	.244999
inc3	-.0236098	.274807	-0.09	0.932	-.5622216	.515002
inc4	-.3592197	.2540824	-1.41	0.157	-.857212	.1387726
educ2	.3612449	.3016453	1.20	0.231	-.2299691	.9524589
educ3	.2634927	.3755537	0.70	0.483	-.472579	.9995643
educ4	.1094477	.3225748	0.34	0.734	-.5227873	.7416827
educ5	.4387708	.4310785	1.02	0.309	-.4061276	1.283669
educ6	-.5112803	.3929796	-1.30	0.193	-1.281506	.2589455
age3	.5189453	.5564383	0.93	0.351	-.5716538	1.609544
age4	-.7483018	.5851087	-1.28	0.201	-1.895094	.3984901
cigprice	-.1866131	.0971551	-1.92	0.055	-.3770336	.0038074
motherhh	.9655656	.4023643	2.40	0.016	.1769461	1.754185
_cons	2.269123	.6900467	3.29	0.001	.9166562	3.62159

Table 13: First Stage Regression

Dcignow = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß dicadre + ß divcadre + ß fatherhh + ß motherhh + ß collfarm + ß collfarman + ß collfish

Pseudo R2	**Wald Chi test for Social Group Variables Only**	**P-Value for Social Group Variables Only**				
0.1403	10.73	0.1507				
dcignow	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.5327416	.4324382	-1.23	0.218	-1.380305	.3148217
province3	-1.2392	.4582123	-2.70	0.007	-2.13728	-.3411205
province4	-.7533066	.5382541	-1.40	0.162	-1.808265	.3016521
province5	.1772219	.5084944	0.35	0.727	-.8194088	1.173853
province6	-.2212316	.4528265	-0.49	0.625	-1.108755	.666292
province7	.0199542	.4825777	0.04	0.967	-.9258806	.965789
province8	.6242432	.5953559	1.05	0.294	-.5426329	1.791119
stratum2	1.308079	.434841	3.01	0.003	.4558063	2.160352
stratum3	.0676499	.3123855	0.22	0.829	-.5446144	.6799143
stratum4	.61441	.3747009	1.64	0.101	-.1199902	1.34881
inc2	-.3444328	.2787282	-1.24	0.217	-.8907299	.2018644
inc3	-.0283546	.2855789	-0.10	0.921	-.588079	.5313698
inc4	-.3568615	.2634768	-1.35	0.176	-.8732666	.1595436
educ2	.3773104	.309187	1.22	0.222	-.228685	.9833057
educ3	.2100593	.3784047	0.56	0.579	-.5316002	.9517188
educ4	.1252259	.3291069	0.38	0.704	-.5198117	.7702635
educ5	.4562927	.4389249	1.04	0.299	-.4039842	1.31657
educ6	-.6984632	.4159962	-1.68	0.093	-1.513801	.1168744
age3	.623316	.5811289	1.07	0.283	-.5156757	1.762308
age4	-.584849	.6106343	-0.96	0.338	-1.78167	.6119722
cigprice	-.1967627	.1020269	-1.93	0.054	-.3967317	.0032062
dicadre	.3133957	.4374233	0.72	0.474	-.5439382	1.17073
divcadre	.5560337	.7129249	0.78	0.435	-.8412735	1.953341
fatherhh	.0638244	.5005324	0.13	0.899	-.9172012	1.04485
motherhh	1.009358	.4873343	2.07	0.038	.0542004	1.964516
collfarm	.0284914	.2959046	0.10	0.923	-.551471	.6084539
collfarman	.3190628	.2987426	1.07	0.286	-.266462	.9045875
collfish	-.4689922	.7626012	-0.61	0.539	-1.963663	1.025679
_cons	2.317733	.7335258	3.16	0.002	.8800488	3.755417

Table 14: First Stage Regression

Cigamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß fatherhh

R-squared	**Root MSE**					
0.0800	7.9457					
cigamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	.227006	.7320722	0.31	0.757	-1.208987	1.662999
province3	-.2888231	.7498085	-0.39	0.700	-1.759607	1.18196
province4	.3059753	.8770334	0.35	0.727	-1.414366	2.026316
province5	4.3112	.8608144	5.01	0.000	2.622673	5.999727
province6	3.876014	.7016744	5.52	0.000	2.499648	5.252381
province7	1.830358	.7707157	2.37	0.018	.3185642	3.342152
province8	.9265633	.9567371	0.97	0.333	-.9501202	2.803247
stratum2	1.725023	.7549785	2.28	0.022	.2440977	3.205947
stratum3	.0036463	.7321294	0.00	0.996	-1.432459	1.439752
stratum4	.3219559	.6581087	0.49	0.625	-.9689543	1.612866
inc2	.4184825	.5676124	0.74	0.461	-.6949152	1.53188
inc3	.0461775	.5331474	0.09	0.931	-.9996154	1.09197
inc4	-.2425427	.5477642	-0.44	0.658	-1.317007	.8319218
educ2	.6274509	.8629279	0.73	0.467	-1.065221	2.320123
educ3	.7063847	.9597585	0.74	0.462	-1.176225	2.588995
educ4	-.0493524	.8835624	-0.06	0.955	-1.7825	1.683796
educ5	.1571116	1.026759	0.15	0.878	-1.856924	2.171147
educ6	-3.017865	1.193336	-2.53	0.012	-5.358648	-.677082
age3	2.935198	.6827524	4.30	0.000	1.595948	4.274448
age4	1.853354	.8663965	2.14	0.033	.1538776	3.55283
cigprice	-.3334164	.2165344	-1.54	0.124	-.7581585	.0913257
fatherhh	-1.354132	.5168686	-2.62	0.009	-2.367994	-.3402706
_cons	12.13797	1.476526	8.22	0.000	9.241694	15.03424

Table 15: First Stage Regression

Cigamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß motherhh

R-squared	**Root MSE**					
0.0792	7.9566					
cigamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	.1923182	.7395594	0.26	0.795	-1.258368	1.643004
province3	-.2813253	.7515398	-0.37	0.708	-1.755511	1.192861
province4	.3013737	.8782171	0.34	0.732	-1.421297	2.024044
province5	4.287504	.8621424	4.97	0.000	2.596365	5.978643
province6	3.910972	.7032468	5.56	0.000	2.531515	5.290428
province7	1.845655	.7804683	2.36	0.018	.3147244	3.376586
province8	1.001241	.9561522	1.05	0.295	-.8743036	2.876785
stratum2	1.736819	.7689584	2.26	0.024	.2284655	3.245173
stratum3	.0444189	.7380916	0.06	0.952	-1.403388	1.492225
stratum4	.3072347	.6699293	0.46	0.647	-1.006868	1.621337
inc2	.4066507	.5690398	0.71	0.475	-.7095518	1.522853
inc3	.0615582	.5329187	0.12	0.908	-.9837908	1.106907
inc4	-.2616094	.5481832	-0.48	0.633	-1.3369	.8136815
educ2	.6403309	.860941	0.74	0.457	-1.048451	2.329113
educ3	.7484566	.9570009	0.78	0.434	-1.128753	2.625666
educ4	-.0209613	.8807581	-0.02	0.981	-1.748616	1.706693
educ5	.1347058	1.024186	0.13	0.895	-1.874291	2.143703
educ6	-2.989784	1.193888	-2.50	0.012	-5.33166	-.6479087
age3	3.218435	.7276732	4.42	0.000	1.791064	4.645805
age4	2.090693	.906285	2.31	0.021	.3129663	3.86842
cigprice	-.3257552	.2156401	-1.51	0.131	-.7487449	.0972344
motherhh	-.8964115	.5348451	-1.68	0.094	-1.945539	.1527161
_cons	11.82102	1.538815	7.68	0.000	8.802553	14.83949

Table 16: First Stage Regression

Cigamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß collfarm

R-squared	**Root MSE**					
0.0795	7.9495					
cigamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	.3643502	.7419403	0.49	0.623	-1.090997	1.819698
province3	-.2476472	.7483652	-0.33	0.741	-1.715597	1.220303
province4	.5379101	.8831646	0.61	0.543	-1.194455	2.270275
province5	4.456067	.8717781	5.11	0.000	2.746037	6.166096
province6	3.786626	.7009136	5.40	0.000	2.411755	5.161498
province7	1.892129	.7796425	2.43	0.015	.3628272	3.421431
province8	1.139442	.9656103	1.18	0.238	-.754644	3.033527
stratum2	2.134778	.7653897	2.79	0.005	.6334333	3.636122
stratum3	-.065118	.7330627	-0.09	0.929	-1.503052	1.372816
stratum4	1.283001	.7830896	1.64	0.102	-.2530622	2.819065
inc2	.5720831	.5708941	1.00	0.316	-.5477499	1.691916
inc3	.1110668	.5314766	0.21	0.834	-.9314471	1.153581
inc4	-.203041	.5468778	-0.37	0.710	-1.275765	.8696831
educ2	.4689545	.8599951	0.55	0.586	-1.217962	2.155872
educ3	.6029145	.9593316	0.63	0.530	-1.278855	2.484684
educ4	-.3223227	.8811166	-0.37	0.715	-2.05067	1.406025
educ5	-.2207629	1.025835	-0.22	0.830	-2.232982	1.791457
educ6	-3.402579	1.19896	-2.84	0.005	-5.75439	-1.050767
age3	3.85772	.6328337	6.10	0.000	2.616389	5.09905
age4	2.820917	.7809796	3.61	0.000	1.288992	4.352842
cigprice	-.4253415	.2231943	-1.91	0.057	-.8631467	.0124636
collfarm	-1.342992	.5930228	-2.26	0.024	-2.506232	-.1797529
_cons	11.48313	1.45268	7.90	0.000	8.633642	14.33263

Table 17: First Stage Regression

Cigamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß cigprice + ß dicadre + ß divcadre + ß fatherhh + ß motherhh + ß collfarm + ß collfarman + ß collfish

R-squared	**Root MSE**	**Wald Chi test for Social Group Variables Only**	**P-Value for Social Group Variables Only**			
0.0823	7.969	1.96	0.0566			
cigamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	.2136348	.7687397	0.28	0.781	-1.294325	1.721595
province3	-.3410891	.7766035	-0.44	0.661	-1.864475	1.182296
province4	.39179	.9376517	0.42	0.676	-1.447508	2.231088
province5	4.532486	.9032458	5.02	0.000	2.760679	6.304293
province6	3.445072	.7313793	4.71	0.000	2.010398	4.879746
province7	1.711142	.8050614	2.13	0.034	.1319334	3.290351
province8	.7743364	.982452	0.79	0.431	-1.152842	2.701514
stratum2	1.717654	.8160893	2.10	0.035	.1168132	3.318495
stratum3	-.1147026	.7548156	-0.15	0.879	-1.595349	1.365944
stratum4	.7265454	.8107311	0.90	0.370	-.863785	2.316876
inc2	.4241406	.5880702	0.72	0.471	-.7294179	1.577699
inc3	-.1055277	.5425618	-0.19	0.846	-1.169817	.9587617
inc4	-.3830942	.5599731	-0.68	0.494	-1.481537	.7153491
educ2	.4938554	.8684481	0.57	0.570	-1.209693	2.197403
educ3	.5217794	.9676188	0.54	0.590	-1.376302	2.419861
educ4	-.1979033	.8916761	-0.22	0.824	-1.947015	1.551209
educ5	.0976986	1.050061	0.09	0.926	-1.962102	2.157499
educ6	-3.318545	1.226604	-2.71	0.007	-5.724652	-.9124388
age3	3.069116	.7372859	4.16	0.000	1.622856	4.515377
age4	1.63812	.9270802	1.77	0.077	-.1804407	3.456681
cigprice	-.3854341	.2243098	-1.72	0.086	-.8254402	.054572
dicadre	-.5224489	.9275477	-0.56	0.573	-2.341927	1.297029
divcadre	1.066881	1.02289	1.04	0.297	-.939621	3.073383
fatherhh	-1.163023	.6797231	-1.71	0.087	-2.496368	.1703219
motherhh	-.2756822	.6830279	-0.40	0.687	-1.61551	1.064145
collfarm	-1.476367	.6778694	-2.18	0.030	-2.806076	-.1466583
collfarman	.3598633	.5478967	0.66	0.511	-.714891	1.434618
collfish	1.062036	1.460473	0.73	0.467	-1.802827	3.926899
_cons	12.88908	1.56833	8.22	0.000	9.812641	15.96552

Table 18: First Stage Regression

Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß divcadre

Pseudo R2						
0.0381						
dalc	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.1517798	.1881341	-0.81	0.420	-.5205159	.2169563
province3	.7254763	.2405341	3.02	0.003	.2540381	1.196915
province4	.2927442	.2435479	1.20	0.229	-.1846009	.7700894
province5	-.3341855	.2366501	-1.41	0.158	-.7980113	.1296402
province6	-.5013502	.1942876	-2.58	0.010	-.8821469	-.1205534
province7	.134371	.264722	0.51	0.612	-.3844747	.6532167
province8	.2977882	.2984193	1.00	0.318	-.2871028	.8826792
stratum2	-.0162618	.1940207	-0.08	0.933	-.3965354	.3640119
stratum3	-.1843888	.1845872	-1.00	0.318	-.5461732	.1773955
stratum4	-.0333134	.1747156	-0.19	0.849	-.3757496	.3091229
inc2	-.0047296	.1490878	-0.03	0.975	-.2969364	.2874772
inc3	-.0796273	.1393082	-0.57	0.568	-.3526664	.1934119
inc4	-.0482817	.1371249	-0.35	0.725	-.3170417	.2204783
educ2	.3821671	.1967732	1.94	0.052	-.0035012	.7678355
educ3	.2537631	.2240087	1.13	0.257	-.1852859	.6928121
educ4	.2383858	.2032502	1.17	0.241	-.1599772	.6367489
educ5	.4104938	.2317396	1.77	0.077	-.0437075	.8646951
educ6	.4151466	.2593264	1.60	0.109	-.0931237	.923417
age3	.6532945	.159404	4.10	0.000	.3408685	.9657205
age4	.0693857	.1918483	0.36	0.718	-.3066301	.4454014
beerprice	-.190303	.1748452	-1.09	0.276	-.5329933	.1523873
liqprice	-.0498888	.0425185	-1.17	0.241	-.1332236	.033446
divcadre	.8743772	.3770302	2.32	0.020	.1354116	1.613343
_cons	.3797394	.3914079	0.97	0.332	-.3874059	1.146885

Table 19: First Stage Regression

Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß fatherhh

Pseudo R2						
0.0389						
dalc	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.1952682	.1857188	-1.05	0.293	-.5592704	.1687341
province3	.6736529	.2399201	2.81	0.005	.2034182	1.143888
province4	.2316368	.2393621	0.97	0.333	-.2375043	.7007779
province5	-.416514	.2234655	-1.86	0.062	-.8544984	.0214704
province6	-.5974497	.1895166	-3.15	0.002	-.9688955	-.226004
province7	.0891927	.2590443	0.34	0.731	-.4185248	.5969102
province8	.2060623	.2899207	0.71	0.477	-.3621718	.7742965
stratum2	.0004212	.1866919	0.00	0.998	-.3654882	.3663305
stratum3	-.1622932	.1787886	-0.91	0.364	-.5127123	.188126
stratum4	-.0082987	.1694287	-0.05	0.961	-.3403729	.3237754
inc2	.0202951	.1472845	0.14	0.890	-.2683772	.3089674
inc3	-.0869836	.1371285	-0.63	0.526	-.3557506	.1817833
inc4	-.0266905	.1341716	-0.20	0.842	-.2896619	.236281
educ2	.4278334	.1941255	2.20	0.028	.0473544	.8083124
educ3	.3163936	.2206584	1.43	0.152	-.116089	.7488761
educ4	.3069775	.2006947	1.53	0.126	-.086377	.7003319
educ5	.5222597	.2281487	2.29	0.022	.0750965	.9694229
educ6	.4656253	.253792	1.83	0.067	-.0317979	.9630485
age3	.4588573	.1799549	2.55	0.011	.1061522	.8115625
age4	-.1552256	.2212033	-0.70	0.483	-.588776	.2783249
beerprice	-.1667759	.1698975	-0.98	0.326	-.4997689	.1662172
liqprice	-.0365147	.0423729	-0.86	0.389	-.1195639	.0465346
fatherhh	-.2923307	.123188	-2.37	0.018	-.5337747	-.0508867
_cons	.5233375	.4030952	1.30	0.194	-.2667145	1.31339

Table 20: First Stage Regression

Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß motherhh

Pseudo R2						
0.0390						
dalc	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.1649786	.1864693	-0.88	0.376	-.5304517	.2004945
province3	.6686715	.2405487	2.78	0.005	.1972046	1.140138
province4	.2576799	.2397776	1.07	0.283	-.2122755	.7276354
province5	-.4155702	.2237292	-1.86	0.063	-.8540714	.022931
province6	-.5980669	.1898435	-3.15	0.002	-.9701533	-.2259804
province7	.1334383	.2589899	0.52	0.606	-.3741725	.6410491
province8	.2273647	.2892025	0.79	0.432	-.3394618	.7941913
stratum2	-.0299973	.1862341	-0.16	0.872	-.3950095	.3350148
stratum3	-.1470784	.1780105	-0.83	0.409	-.4959725	.2018157
stratum4	-.0333991	.1681289	-0.20	0.843	-.3629257	.2961275
inc2	.0210673	.1479621	0.14	0.887	-.268933	.3110676
inc3	-.0969086	.1374573	-0.71	0.481	-.36632	.1725028
inc4	-.0348092	.1347141	-0.26	0.796	-.298844	.2292256
educ2	.4073387	.1960174	2.08	0.038	.0231517	.7915257
educ3	.2759335	.2223551	1.24	0.215	-.1598746	.7117415
educ4	.2883603	.2026141	1.42	0.155	-.108756	.6854766
educ5	.4956347	.2302547	2.15	0.031	.0443438	.9469257
educ6	.4453619	.2547005	1.75	0.080	-.053842	.9445657
age3	.3981135	.1799418	2.21	0.027	.0454341	.750793
age4	-.2509486	.2244711	-1.12	0.264	-.6909039	.1890066
beerprice	-.1756136	.1709853	-1.03	0.304	-.5107386	.1595113
liqprice	-.0401476	.0424861	-0.94	0.345	-.1234188	.0431235
motherhh	-.3629186	.133801	-2.71	0.007	-.6251638	-.1006734
_cons	.6620009	.4036586	1.64	0.101	-.1291554	1.453157

Table 21: First Stage Regression

Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß collfish

Pseudo R2						
0.0387						
dalc	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.1787211	.1850679	-0.97	0.334	-.5414476	.1840053
province3	.6974318	.2368503	2.94	0.003	.2332136	1.16165
province4	.2039085	.2404883	0.85	0.396	-.2674399	.6752568
province5	-.4102709	.2230572	-1.84	0.066	-.847455	.0269132
province6	-.5673948	.1899654	-2.99	0.003	-.9397201	-.1950695
province7	.0850464	.2610133	0.33	0.745	-.4265303	.596623
province8	.2436951	.290131	0.84	0.401	-.3249512	.8123414
stratum2	.011308	.1851068	0.06	0.951	-.3514947	.3741107
stratum3	-.1601174	.1782993	-0.90	0.369	-.5095775	.1893427
stratum4	-.000315	.1670761	-0.00	0.998	-.3277781	.3271481
inc2	.0311112	.1470085	0.21	0.832	-.2570201	.3192426
inc3	-.0725321	.1368023	-0.53	0.596	-.3406598	.1955955
inc4	-.0142718	.1339638	-0.11	0.915	-.276836	.2482924
educ2	.4008231	.1933556	2.07	0.038	.0218532	.7797931
educ3	.3048326	.2197051	1.39	0.165	-.1257815	.7354466
educ4	.2906536	.199339	1.46	0.145	-.1000435	.6813508
educ5	.4754993	.2266387	2.10	0.036	.0312956	.919703
educ6	.4513584	.2535856	1.78	0.075	-.0456602	.9483771
age3	.635273	.156507	4.06	0.000	.3285248	.9420211
age4	.0946758	.1876975	0.50	0.614	-.2732046	.4625563
beerprice	-.1905198	.1716776	-1.11	0.267	-.5270018	.1459621
liqprice	-.0382958	.0418979	-0.91	0.361	-.1204141	.0438225
collfish	1.169139	.5649751	2.07	0.039	.0618087	2.27647
_cons	.312621	.3842898	0.81	0.416	-.4405731	1.065815

Table 22: First Stage Regression

Dalc = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß dicadre + ß divcadre + ß fatherhh + ß motherhh + ß collfarm + ß collfarman + ß collfish

Pseudo R2	**Wald Chi test for Social Group Variables Only**	**P-Value for Social Group Variables Only**				
0.0436	16.14	0.0239				
dalc	**Coef.**	**Robust Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
province2	-.1513723	.1918596	-0.79	0.430	-.5274103	.2246657
province3	.7137441	.2421657	2.95	0.003	.239108	1.18838
province4	.1814454	.2574997	0.70	0.481	-.3232447	.6861355
province5	-.3001067	.241222	-1.24	0.213	-.7728932	.1726798
province6	-.5324256	.1956408	-2.72	0.006	-.9158746	-.1489766
province7	.1147149	.2686587	0.43	0.669	-.4118465	.6412763
province8	.2718894	.2993002	0.91	0.364	-.3147281	.858507
stratum2	-.0884565	.1992318	-0.44	0.657	-.4789436	.3020306
stratum3	-.1762605	.1855196	-0.95	0.342	-.5398722	.1873512
stratum4	-.2499875	.2220807	-1.13	0.260	-.6852577	.1852827
inc2	-.0467296	.1513384	-0.31	0.757	-.3433475	.2498883
inc3	-.1228497	.1419207	-0.87	0.387	-.4010091	.1553097
inc4	-.0678201	.1389967	-0.49	0.626	-.3402487	.2046085
educ2	.3786965	.1996331	1.90	0.058	-.0125772	.7699702
educ3	.20716	.2272681	0.91	0.362	-.2382773	.6525972
educ4	.2450707	.2071079	1.18	0.237	-.1608533	.6509946
educ5	.4486004	.2369584	1.89	0.058	-.0158295	.9130302
educ6	.4404026	.268644	1.64	0.101	-.0861301	.9669352
age3	.4397545	.1902804	2.31	0.021	.0668119	.8126972
age4	-.2108997	.2377882	-0.89	0.375	-.6769561	.2551567
beerprice	-.1572517	.1767744	-0.89	0.374	-.5037233	.1892198
liqprice	-.0452771	.0446618	-1.01	0.311	-.1328125	.0422584
dicadre	-.0117725	.2098886	-0.06	0.955	-.4231466	.3996015
divcadre	.7566341	.3794413	1.99	0.046	.0129429	1.500325
fatherhh	-.1167991	.1427093	-0.82	0.413	-.3965041	.162906
motherhh	-.2847113	.1576985	-1.81	0.071	-.5937946	.024372
collfarm	.1758476	.1690408	1.04	0.298	-.1554662	.5071615
collfarman	.0323587	.1472852	0.22	0.826	-.256315	.3210324
collfish	1.023034	.5881623	1.74	0.082	-.1297426	2.175811
_cons	.6584432	.4198303	1.57	0.117	-.164409	1.481295

Table 23: First Stage Regression

Alcamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß fatherhh

R-squared	**Root MSE**					
0.0866	13.955					
alcamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	-3.428794	1.722356	-1.99	0.047	-6.811006	-.0465814
province3	4.297557	2.709422	1.59	0.113	-1.022969	9.618083
province4	-6.094555	1.877928	-3.25	0.001	-9.782265	-2.406845
province5	-5.224784	2.463676	-2.12	0.034	-10.06274	-.3868329
province6	1.446808	3.10725	0.47	0.642	-4.654937	7.548554
province7	-2.659712	3.059193	-0.87	0.385	-8.667089	3.347665
province8	.835258	2.218498	0.38	0.707	-3.521234	5.19175
stratum2	3.33486	2.11168	1.58	0.115	-.8118729	7.481593
stratum3	2.42411	1.811244	1.34	0.181	-1.132653	5.980873
stratum4	4.505147	1.885383	2.39	0.017	.802795	8.207498
inc2	-1.015005	1.91537	-0.53	0.596	-4.776242	2.746232
inc3	-1.469931	1.581791	-0.93	0.353	-4.576114	1.636252
inc4	-1.641049	1.421933	-1.15	0.249	-4.433317	1.151219
educ2	-1.784576	2.874402	-0.62	0.535	-7.429076	3.859924
educ3	-1.408452	3.183712	-0.44	0.658	-7.660349	4.843444
educ4	-1.642124	2.732903	-0.60	0.548	-7.008759	3.724512
educ5	-1.958416	2.740346	-0.71	0.475	-7.339668	3.422836
educ6	-5.841502	2.94328	-1.98	0.048	-11.62126	-.0617446
age3	2.239503	1.831068	1.22	0.222	-1.356189	5.835195
age4	3.483607	2.387793	1.46	0.145	-1.205332	8.172547
beerprice	-.7870219	2.104715	-0.37	0.709	-4.920077	3.346033
liqprice	-.7025797	.440696	-1.59	0.111	-1.56798	.1628206
fatherhh	-2.470975	1.25661	-1.97	0.050	-4.938597	-.0033536
_cons	13.34883	4.732081	2.82	0.005	4.056386	22.64128

Table 24: First Stage Regression

Alcamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß collfarman

R-squared	**Root MSE**					
0.0877	13.933					
alcamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	-2.934445	1.66718	-1.76	0.079	-6.208289	.3393987
province3	4.058281	2.684607	1.51	0.131	-1.213484	9.330045
province4	-4.46066	1.790773	-2.49	0.013	-7.977203	-.9441176
province5	-5.000946	2.466617	-2.03	0.043	-9.844645	-.1572469
province6	1.986949	3.069255	0.65	0.518	-4.040149	8.014047
province7	-1.671384	3.10485	-0.54	0.591	-7.768381	4.425612
province8	1.827787	2.198115	0.83	0.406	-2.488654	6.144228
stratum2	4.494089	2.133877	2.11	0.036	.303792	8.684385
stratum3	2.512159	1.813392	1.39	0.166	-1.048801	6.073119
stratum4	6.728562	2.191839	3.07	0.002	2.424446	11.03268
inc2	-.5818709	1.88117	-0.31	0.757	-4.275925	3.112184
inc3	-1.344283	1.567091	-0.86	0.391	-4.421581	1.733015
inc4	-1.213292	1.408599	-0.86	0.389	-3.97936	1.552776
educ2	-1.534561	2.832157	-0.54	0.588	-7.096071	4.02695
educ3	-1.163488	3.162589	-0.37	0.713	-7.373867	5.04689
educ4	-1.488391	2.67583	-0.56	0.578	-6.742921	3.766139
educ5	-1.937592	2.685811	-0.72	0.471	-7.211723	3.336538
educ6	-5.513051	2.911835	-1.89	0.059	-11.23102	.2049225
age3	3.837865	1.48186	2.59	0.010	.9279355	6.747795
age4	5.306486	1.886146	2.81	0.005	1.60266	9.010312
beerprice	-.775747	2.122763	-0.37	0.715	-4.944218	3.392724
liqprice	-.9438803	.4484743	-2.10	0.036	-1.82455	-.063211
collfarman	-2.978782	1.797619	-1.66	0.098	-6.508769	.5512043
_cons	11.00276	4.447255	2.47	0.014	2.269684	19.73584

Table 25: First Stage Regression

Alcamt = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß divcadre + ß fatherhh + ß motherhh + ß collfarm + ß collfarman + ß collfish

R-squared	**Root MSE**	**Wald Chi Test for Social Group Variables Only**	**P-Value for Social Group Variables Only**			
0.0856	14.259	0.83	0.5608			
alcamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	-3.206913	1.764471	-1.82	0.070	-6.672121	.2582951
province3	4.281129	2.848847	1.50	0.133	-1.313664	9.875921
province4	-4.609576	1.959607	-2.35	0.019	-8.458008	-.7611449
province5	-4.966293	3.826616	-1.30	0.195	-12.48131	2.548721
province6	1.289282	3.122626	0.41	0.680	-4.843181	7.421744
province7	-1.901843	3.250424	-0.59	0.559	-8.285285	4.4816
province8	.770101	2.306383	0.33	0.739	-3.759357	5.299559
stratum2	4.145189	2.277072	1.82	0.069	-.3267059	8.617085
stratum3	2.2394	1.883934	1.19	0.235	-1.460419	5.939219
stratum4	6.099698	2.633599	2.32	0.021	.9276273	11.27177
inc2	-.7757178	1.962127	-0.40	0.693	-4.629099	3.077663
inc3	-1.419839	1.636112	-0.87	0.386	-4.632966	1.793287
inc4	-1.584036	1.50445	-1.05	0.293	-4.538595	1.370524
educ2	-1.620384	2.886418	-0.56	0.575	-7.288961	4.048194
educ3	-1.286076	3.273064	-0.39	0.695	-7.71398	5.141827
educ4	-1.301898	2.762924	-0.47	0.638	-6.727949	4.124154
educ5	-1.812368	2.775895	-0.65	0.514	-7.263893	3.639157
educ6	-5.359968	3.074252	-1.74	0.082	-11.39743	.6774935
age3	2.361319	1.899684	1.24	0.214	-1.369432	6.092069
age4	3.742739	2.519737	1.49	0.138	-1.205721	8.691199
beerprice	-.5280749	2.220684	-0.24	0.812	-4.889231	3.833081
liqprice	-.8071951	.4678467	-1.73	0.085	-1.72599	.1115996
dicadre	.9911574	2.255017	0.44	0.660	-3.437425	5.41974
divcadre	-.2374955	2.127005	-0.11	0.911	-4.414678	3.939687
fatherhh	-2.371968	1.745268	-1.36	0.175	-5.799465	1.055528
motherhh	.028009	1.580432	0.02	0.986	-3.075769	3.131787
collfarm	.1114368	2.239625	0.05	0.960	-4.286917	4.50979
collfarman	-2.953469	1.930296	-1.53	0.127	-6.744338	.8374001
collfish	-2.012896	2.184471	-0.92	0.357	-6.302935	2.277143
_cons	12.93751	4.911404	2.63	0.009	3.292105	22.58292

Table 26: First Stage Regression

Alcamt (15 or more drinks per week) = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß motherhh

R-squared	**Root MSE**					
0.1685	16.623					
alcamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	.1210048	5.421818	0.02	0.982	-10.59142	10.83343
province3	.9237868	3.622858	0.25	0.799	-6.234251	8.081825
province4	-10.02763	4.898517	-2.05	0.042	-19.70611	-.3491442
province5	-15.43024	7.00318	-2.20	0.029	-29.26712	-1.593367
province6	5.398273	7.238751	0.75	0.457	-8.904043	19.70059
province7	2.515393	8.319549	0.30	0.763	-13.92236	18.95315
province8	-1.322207	6.739319	-0.20	0.845	-14.63775	11.99333
stratum2	.9639464	7.358032	0.13	0.896	-13.57404	15.50194
stratum3	2.56905	5.920964	0.43	0.665	-9.129585	14.26769
stratum4	.990686	5.833861	0.17	0.865	-10.53585	12.51722
inc2	-4.041546	5.142184	-0.79	0.433	-14.20147	6.118375
inc3	-5.660692	3.453159	-1.64	0.103	-12.48344	1.162056
inc4	-8.997776	3.717722	-2.42	0.017	-16.34325	-1.652306
educ2	-2.087246	6.233101	-0.33	0.738	-14.4026	10.22811
educ3	.3650629	7.500543	0.05	0.961	-14.4545	15.18463
educ4	-4.048834	6.469437	-0.63	0.532	-16.83114	8.733472
educ5	-7.775162	6.757264	-1.15	0.252	-21.12616	5.575833
educ6	-17.483	9.49502	-1.84	0.068	-36.24325	1.277249
age3	-5.809571	6.648143	-0.87	0.384	-18.94496	7.325823
age4	-6.193253	8.032369	-0.77	0.442	-22.0636	9.677093
beerprice	1.739776	5.709409	0.30	0.761	-9.540867	13.02042
liqprice	.9926268	1.651069	0.60	0.549	-2.269553	4.254806
motherhh	-4.897392	2.93215	-1.67	0.097	-10.69073	.8959469
_cons	40.98689	15.53309	2.64	0.009	10.29664	71.67715

Table 27: First Stage Regression

Alcamt (15 or more drinks per week) = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + ß collfish

R-squared	**Root MSE**					
0.1639	16.729					
alcamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	.9015183	5.593057	0.16	0.872	-10.14983	11.95287
province3	.6917901	3.645364	0.19	0.850	-6.511103	7.894683
province4	-9.217808	5.074416	-1.82	0.071	-19.24437	.8087574
province5	-16.1357	6.961729	-2.32	0.022	-29.89141	-2.37998
province6	6.969048	7.279276	0.96	0.340	-7.414111	21.35221
province7	5.863707	8.87494	0.66	0.510	-11.67233	23.39975
province8	1.11611	6.537146	0.17	0.865	-11.80067	14.03289
stratum2	1.390764	7.530444	0.18	0.854	-13.48868	16.27021
stratum3	3.464722	5.924337	0.58	0.560	-8.241207	15.17065
stratum4	3.050099	5.732108	0.53	0.595	-8.276004	14.3762
inc2	-3.576734	5.273369	-0.68	0.499	-13.99641	6.842943
inc3	-5.477262	3.423854	-1.60	0.112	-12.24247	1.287949
inc4	-9.196792	3.75489	-2.45	0.015	-16.6161	-1.777486
educ2	-2.234252	6.205712	-0.36	0.719	-14.49615	10.02765
educ3	.508505	7.622755	0.07	0.947	-14.55334	15.57035
educ4	-4.052502	6.41042	-0.63	0.528	-16.71889	8.61388
educ5	-9.094886	6.831809	-1.33	0.185	-22.59389	4.404122
educ6	-17.25877	9.503441	-1.82	0.071	-36.03667	1.51913
age3	-1.366486	6.335287	-0.22	0.830	-13.88441	11.15144
age4	-.9434535	7.372874	-0.13	0.898	-15.51155	13.62465
beerprice	-.2305125	5.949631	-0.04	0.969	-11.98642	11.52539
liqprice	1.182514	1.669418	0.71	0.480	-2.116099	4.481126
collfish	-7.884525	3.602575	-2.19	0.030	-15.00287	-.7661769
_cons	36.24413	14.8767	2.44	0.016	6.849183	65.63909

Table 28: First Stage Regression

Alcamt (15 or more drinks per week) = ß province1+ ß province2 + ß province3 + ß province4 + ß province5 + ß province6 + ß province7 + ß province8 + ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6 + ß age3 + ß age4 + ß liqprice + ß beerprice + + ß beerprice + ß divcadre + ß fatherhh + ß motherhh + ß collfarm + ß collfarman + ß collfish

R-squared	**Root MSE**	**Wald Chi test for Social Group Variables Only**	**P-Value for Social Group Variables Only**			
0.2001	16.775	1.45	0.1902			
alcamt	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
province2	2.689113	5.68834	0.47	0.637	-8.551122	13.92935
province3	1.059447	3.873112	0.27	0.785	-6.593874	8.712767
province4	-5.511133	5.716014	-0.96	0.337	-16.80605	5.783785
province5	-15.92449	8.672878	-1.84	0.068	-33.06221	1.213231
province6	6.357302	8.058319	0.79	0.431	-9.566042	22.28065
province7	5.648804	8.911697	0.63	0.527	-11.96083	23.25843
province8	1.748212	6.378945	0.27	0.784	-10.85667	14.35309
stratum2	3.485858	7.754274	0.45	0.654	-11.83669	18.80841
stratum3	3.278652	5.997111	0.55	0.585	-8.571719	15.12902
stratum4	6.307242	7.064669	0.89	0.373	-7.652637	20.26712
inc2	-3.094635	5.324707	-0.58	0.562	-13.61632	7.427055
inc3	-5.679831	3.5895	-1.58	0.116	-12.77273	1.413069
inc4	-8.784843	3.855195	-2.28	0.024	-16.40276	-1.166927
educ2	-1.684027	6.567901	-0.26	0.798	-14.66229	11.29423
educ3	.3118086	8.068256	0.04	0.969	-15.63117	16.25479
educ4	-2.781382	6.709967	-0.41	0.679	-16.04036	10.4776
educ5	-7.355157	7.187562	-1.02	0.308	-21.55787	6.84756
educ6	-16.19021	10.31826	-1.57	0.119	-36.57922	4.198806
age3	-4.739644	6.722843	-0.71	0.482	-18.02407	8.544782
age4	-5.820088	8.497163	-0.68	0.494	-22.61059	10.97042
beerprice	.8857032	6.356511	0.14	0.889	-11.67485	13.44625
liqprice	.6509212	1.69775	0.38	0.702	-2.703856	4.005698
dicadre	-2.464009	4.98799	-0.49	0.622	-12.32034	7.392324
divcadre	-4.626725	4.71545	-0.98	0.328	-13.94452	4.691066
fatherhh	-3.675171	4.065722	-0.90	0.367	-11.70909	4.358749
motherhh	-2.958117	3.576851	-0.83	0.410	-10.02602	4.109788
collfarm	-3.685145	4.985728	-0.74	0.461	-13.53701	6.16672
collfarman	-4.064876	3.60437	-1.13	0.261	-11.18716	3.057407
collfish	-7.212874	3.641382	-1.98	0.049	-14.40829	-.0174562
_cons	40.65545	16.50751	2.46	0.015	8.036392	73.27451

Table 29: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt; social group variable: dicadre

R-squared	**Root MSE**					
0.0962	.7877					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0260599	.0083495	-3.12	0.002	-.0424342	-.0096856
stratum2	-.1864581	.0623013	-2.99	0.003	-.3086378	-.0642784
stratum3	-.1092781	.0686791	-1.59	0.112	-.2439653	.0254091
stratum4	-.1370491	.0602134	-2.28	0.023	-.2551341	-.0189641
inc2	-.0172602	.0471053	-0.37	0.714	-.1096389	.0751185
inc3	.001024	.0454431	0.02	0.982	-.088095	.0901429
inc4	-.0286157	.0401559	-0.71	0.476	-.1073657	.0501343
age3	.1615226	.042339	3.81	0.000	.0784911	.244554
age4	.6411165	.0677646	9.46	0.000	.5082227	.7740102
educ2	.0378155	.0891726	0.42	0.672	-.1370617	.2126927
educ3	-.0158098	.0934198	-0.17	0.866	-.1990162	.1673966
educ4	-.0776524	.0843427	-0.92	0.357	-.2430575	.0877527
educ5	-.1055762	.0871319	-1.21	0.226	-.2764513	.0652989
educ6	-.0949482	.1142409	-0.83	0.406	-.3189869	.1290904

Table 30: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, social group variable: divcadre

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0962	.78922					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.027535	.0082463	-3.34	0.001	-.0437072	-.0113629
stratum2	-.1701026	.0656179	-2.59	0.010	-.298788	-.0414173
stratum3	-.0976861	.0720437	-1.36	0.175	-.2389733	.0436011
stratum4	-.1276085	.0630011	-2.03	0.043	-.251162	-.004055
inc2	-.0204274	.0466838	-0.44	0.662	-.1119805	.0711257
inc3	.0054285	.0455362	0.12	0.905	-.083874	.0947311
inc4	-.0200124	.0412656	-0.48	0.628	-.1009396	.0609148
age3	.1657862	.0421572	3.93	0.000	.0831103	.2484621
age4	.6496632	.0689333	9.42	0.000	.5144758	.7848505
educ2	.0347124	.0895251	0.39	0.698	-.1408579	.2102828
educ3	-.0161222	.0943129	-0.17	0.864	-.2010821	.1688377
educ4	-.0788527	.0847989	-0.93	0.353	-.2451544	.087449
educ5	-.0974827	.0877097	-1.11	0.267	-.269493	.0745276
educ6	-.1267415	.1164702	-1.09	0.277	-.3551548	.1016719
_cons	5.61156	.1542915	36.37	0.000	5.308974	5.914146

Table 31: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, social group variable: fatherhh

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0937	.80218					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.016236	.0079072	-2.05	0.040	-.0317427	-.0007292
stratum2	-.1902682	.0621273	-3.06	0.002	-.3121061	-.0684303
stratum3	-.1080488	.0683617	-1.58	0.114	-.242113	.0260155
stratum4	-.1316918	.0602497	-2.19	0.029	-.2498475	-.0135361
inc2	-.0320766	.0479129	-0.67	0.503	-.1260387	.0618854
inc3	-.0054498	.0454622	-0.12	0.905	-.0946059	.0837062
inc4	-.0301996	.0405303	-0.75	0.456	-.1096836	.0492843
age3	.1231766	.0398834	3.09	0.002	.0449612	.201392
age4	.6167281	.0658044	9.37	0.000	.487679	.7457771
educ2	.0099612	.0928808	0.11	0.915	-.1721874	.1921099
educ3	-.0405399	.0970369	-0.42	0.676	-.2308391	.1497593
educ4	-.0933094	.0866118	-1.08	0.281	-.263164	.0765451
educ5	-.1233634	.0894502	-1.38	0.168	-.2987843	.0520575
educ6	-.0795197	.1126116	-0.71	0.480	-.3003623	.1413229
_cons	5.498734	.1445285	38.05	0.000	5.215299	5.782169

Table 32: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, social group variable: motherhh

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0939	.79526					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0179723	.0082268	-2.18	0.029	-.0341059	-.0018387
stratum2	-.1710545	.0614853	-2.78	0.005	-.2916338	-.0504751
stratum3	-.0971458	.0673687	-1.44	0.149	-.2292632	.0349715
stratum4	-.1160038	.0588955	-1.97	0.049	-.2315042	-.0005033
inc2	-.03556	.0478149	-0.74	0.457	-.1293302	.0582103
inc3	-.0151365	.0453644	-0.33	0.739	-.1041009	.0738279
inc4	-.0393031	.0396662	-0.99	0.322	-.1170929	.0384867
age3	.1279656	.0411889	3.11	0.002	.0471898	.2087414
age4	.6221393	.0660233	9.42	0.000	.4926606	.751618
educ2	.0139554	.0932665	0.15	0.881	-.1689503	.196861
educ3	-.0321398	.0976444	-0.33	0.742	-.223631	.1593514
educ4	-.0838248	.0867932	-0.97	0.334	-.2540356	.086386
educ5	-.1088927	.0896843	-1.21	0.225	-.2847733	.0669879
educ6	-.0676106	.1119743	-0.60	0.546	-.2872043	.1519831
_cons	5.5006	.1438417	38.24	0.000	5.218511	5.782689

Table 33: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, social group variable: collfarm

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0940	.80093					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0198725	.0077399	-2.57	0.010	-.0350512	-.0046938
stratum2	-.1866846	.0616374	-3.03	0.002	-.3075616	-.0658075
stratum3	-.1071222	.0681368	-1.57	0.116	-.2407451	.0265007
stratum4	-.1298242	.0600543	-2.16	0.031	-.2475967	-.0120517
inc2	-.0296689	.0476646	-0.62	0.534	-.1231439	.0638062
inc3	-.0063484	.0453671	-0.14	0.889	-.0953178	.082621
inc4	-.0323603	.0402466	-0.80	0.421	-.1112879	.0465673
age3	.137694	.0400091	3.44	0.001	.0592321	.2161559
age4	.6267072	.0664081	9.44	0.000	.4964745	.75694
educ2	.0165597	.0925469	0.18	0.858	-.1649338	.1980533
educ3	-.0330954	.0968424	-0.34	0.733	-.2230129	.1568222
educ4	-.0899464	.086296	-1.04	0.297	-.2591815	.0792886
educ5	-.1193827	.0891479	-1.34	0.181	-.2942105	.0554451
educ6	-.0860207	.1102118	-0.78	0.435	-.3021568	.1301155
_cons	5.538569	.1425779	38.85	0.000	5.258959	5.818178

Table 34: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, social group variable: collfarman

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0944	. 80078					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0225032	.0086537	-2.60	0.009	-.039474	-.0055324
stratum2	-.1817126	.0622366	-2.92	0.004	-.3037648	-.0596605
stratum3	-.1065839	.0682231	-1.56	0.118	-.2403762	.0272084
stratum4	-.1277018	.0601175	-2.12	0.034	-.2455982	-.0098054
inc2	-.0281479	.0478385	-0.59	0.556	-.1219639	.065668
inc3	-.0056568	.0453578	-0.12	0.901	-.0946079	.0832944
inc4	-.0321423	.0402343	-0.80	0.424	-.1110456	.0467611
age3	.1463205	.042051	3.48	0.001	.0638543	.2287867
age4	.6334847	.0667182	9.49	0.000	.5026437	.7643257
educ2	.0191683	.0927588	0.21	0.836	-.1627409	.2010775
educ3	-.0312529	.0969598	-0.32	0.747	-.2214007	.1588948
educ4	-.0899919	.0862475	-1.04	0.297	-.2591317	.079148
educ5	-.1182055	.0891331	-1.33	0.185	-.2930042	.0565933
educ6	-.0938887	.112164	-0.84	0.403	-.3138535	.126076
_cons	5.57007	.1489854	37.39	0.000	5.277895	5.862245

Table 35: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, social group variable: collfish

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0941	. 80116					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0214781	.0086059	-2.50	0.013	-.0383551	-.004601
stratum2	-.1839293	.062223	-2.96	0.003	-.3059547	-.0619038
stratum3	-.1072409	.068228	-1.57	0.116	-.2410428	.026561
stratum4	-.128576	.0600825	-2.14	0.032	-.2464038	-.0107482
inc2	-.0277787	.0480611	-0.58	0.563	-.1220312	.0664739
inc3	-.0058294	.045371	-0.13	0.898	-.0948064	.0831476
inc4	-.0316967	.0402258	-0.79	0.431	-.1105835	.0471902
age3	.1407592	.0413651	3.40	0.001	.0596382	.2218802
age4	.6286747	.0663999	9.47	0.000	.498458	.7588915
educ2	.0176863	.0928594	0.19	0.849	-.1644201	.1997928
educ3	-.0329392	.0970613	-0.34	0.734	-.223286	.1574075
educ4	-.0904518	.0862724	-1.05	0.295	-.2596406	.078737
educ5	-.1193559	.0891638	-1.34	0.181	-.2942149	.0555032
educ6	-.091272	.1121261	-0.81	0.416	-.3111624	.1286183
_cons	5.560366	.148849	37.36	0.000	5.268459	5.852274

Table 36: Second Stage Regression, y pred from first stage regression with dependent variable: cigamt, all social group variables

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.0944	.78511					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0176638	.0067602	-2.61	0.009	-.0309216	-.0044061
stratum2	-.1669765	.0641645	-2.60	0.009	-.2928123	-.0411407
stratum3	-.0872763	.0712134	-1.23	0.221	-.2269361	.0523835
stratum4	-.1171327	.0615465	-1.90	0.057	-.2378342	.0035688
inc2	-.0310893	.0469868	-0.66	0.508	-.1232372	.0610587
inc3	-.0058221	.0459181	-0.13	0.899	-.095874	.0842298
inc4	-.0277686	.0407805	-0.68	0.496	-.1077451	.0522079
age3	.1264328	.0386827	3.27	0.001	.0505704	.2022952
age4	.6221279	.0673642	9.24	0.000	.490017	.7542387
educ2	.027665	.0898188	0.31	0.758	-.1484827	.2038127
educ3	-.0189906	.094764	-0.20	0.841	-.2048366	.1668553
educ4	-.0711863	.0851672	-0.84	0.403	-.2382114	.0958388
educ5	-.0908364	.088122	-1.03	0.303	-.2636564	.0819836
educ6	-.0841229	.1140858	-0.74	0.461	-.3078617	.1396159
_cons	5.477531	.1428428	38.35	0.000	5.197396	5.757667

Table 37: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: dicadre

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1064	.79452					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.003627	.0050931	-0.71	0.476	-.0136165	.0063626
stratum2	-.1900931	.0674219	-2.82	0.005	-.3223345	-.0578517
stratum3	-.0969453	.0701615	-1.38	0.167	-.2345602	.0406695
stratum4	-.0806314	.0679982	-1.19	0.236	-.2140032	.0527404
inc2	-.08686	.0548218	-1.58	0.113	-.1943877	.0206677
inc3	-.0634978	.0491178	-1.29	0.196	-.1598374	.0328419
inc4	-.0441416	.0461007	-0.96	0.338	-.1345636	.0462804
age3	.0921822	.0375133	2.46	0.014	.0186036	.1657608
age4	.6254995	.0781873	8.00	0.000	.4721428	.7788562
educ2	-.0468248	.1168731	-0.40	0.689	-.2760599	.1824103
educ3	-.1474605	.1185066	-1.24	0.214	-.3798996	.0849787
educ4	-.1556574	.1092444	-1.42	0.154	-.3699296	.0586148
educ5	-.2094956	.1111979	-1.88	0.060	-.4275995	.0086082
educ6	-.1560009	.1230296	-1.27	0.205	-.3973113	.0853096
_cons	5.375206	.1308391	41.08	0.000	5.118578	5.631834

Table 38: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: divcadre

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1059	.79881					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0040545	.0052116	-0.78	0.437	-.0142766	.0061677
stratum2	-.1765774	.069895	-2.53	0.012	-.313672	-.0394827
stratum3	-.0862164	.0729898	-1.18	0.238	-.2293812	.0569485
stratum4	-.0705305	.0699921	-1.01	0.314	-.2078156	.0667546
inc2	-.0847871	.0550339	-1.54	0.124	-.1927327	.0231584
inc3	-.0603802	.0498435	-1.21	0.226	-.1581451	.0373848
inc4	-.0357104	.0476546	-0.75	0.454	-.129182	.0577611
age3	.0955627	.0384329	2.49	0.013	.0201789	.1709465
age4	.6361929	.0806526	7.89	0.000	.4779978	.7943879
educ2	-.0434554	.1170767	-0.37	0.711	-.2730939	.1861832
educ3	-.1440305	.1194132	-1.21	0.228	-.378252	.0901909
educ4	-.1532208	.1095069	-1.40	0.162	-.3680117	.0615701
educ5	-.2032492	.1115894	-1.82	0.069	-.4221248	.0156264
educ6	-.1757902	.1241208	-1.42	0.157	-.4192455	.0676651
_cons	5.361414	.1326754	40.41	0.000	5.101179	5.621648

Table 39: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: fatherhh

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1075	.81182					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0010423	.0048224	-0.22	0.829	-.010501	.0084165
stratum2	-.1920696	.0666821	-2.88	0.004	-.3228595	-.0612796
stratum3	-.1043527	.069632	-1.50	0.134	-.2409286	.0322231
stratum4	-.0864283	.0667511	-1.29	0.196	-.2173537	.044497
inc2	-.096303	.055438	-1.74	0.083	-.2050389	.0124328
inc3	-.0673754	.0488167	-1.38	0.168	-.1631243	.0283734
inc4	-.0435984	.0465778	-0.94	0.349	-.134956	.0477591
age3	.0826781	.0364588	2.27	0.023	.0111679	.1541882
age4	.6223552	.0765113	8.13	0.000	.4722863	.7724241
educ2	-.0872267	.1231264	-0.71	0.479	-.3287263	.1542729
educ3	-.1878411	.1241448	-1.51	0.130	-.4313381	.055656
educ4	-.1946393	.1146252	-1.70	0.090	-.4194646	.030186
educ5	-.244355	.1159458	-2.11	0.035	-.4717707	-.0169393
educ6	-.1856936	.1269069	-1.46	0.144	-.4346083	.0632211
_cons	5.397485	.1333876	40.46	0.000	5.135859	5.659111

Table 40: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: motherhh

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1051	.812					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0013137	.0050488	-0.26	0.795	-.0112165	.0085891
stratum2	-.1881937	.0676919	-2.78	0.005	-.3209649	-.0554226
stratum3	-.099068	.0700477	-1.41	0.157	-.2364597	.0383238
stratum4	-.0851329	.0676813	-1.26	0.209	-.2178833	.0476175
inc2	-.1020665	.0554697	-1.84	0.066	-.210865	.006732
inc3	-.0712952	.0490535	-1.45	0.146	-.1675091	.0249186
inc4	-.0438479	.0466916	-0.94	0.348	-.135429	.0477333
age3	.0846351	.0373529	2.27	0.024	.011371	.1578992
age4	.6172939	.0775302	7.96	0.000	.4652259	.769362
educ2	-.0748389	.1234995	-0.61	0.545	-.3170713	.1673936
educ3	-.1817917	.1244548	-1.46	0.144	-.4258978	.0623145
educ4	-.1858592	.1150924	-1.61	0.107	-.4116018	.0398833
educ5	-.234958	.1164238	-2.02	0.044	-.4633121	-.0066039
educ6	-.1771236	.1271101	-1.39	0.164	-.4264378	.0721906
_cons	5.3894	.133515	40.37	0.000	5.127523	5.651277

Table 41: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: collfarm

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1072	.81075					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0025323	.005243	-0.48	0.629	-.0128159	.0077513
stratum2	-.1900805	.0673988	-2.82	0.005	-.3222759	-.057885
stratum3	-.0997169	.0697484	-1.43	0.153	-.236521	.0370871
stratum4	-.0785224	.0675788	-1.16	0.245	-.211071	.0540261
inc2	-.0975803	.0552817	-1.77	0.078	-.2060095	.0108489
inc3	-.0719866	.0487579	-1.48	0.140	-.1676199	.0236467
inc4	-.0482606	.0462121	-1.04	0.296	-.1389007	.0423794
age3	.0893872	.0373156	2.40	0.017	.0161965	.1625778
age4	.6290443	.0771455	8.15	0.000	.4777316	.7803571
educ2	-.0807787	.1217749	-0.66	0.507	-.3196271	.1580697
educ3	-.1812985	.1230091	-1.47	0.141	-.4225676	.0599706
educ4	-.1884063	.113335	-1.66	0.097	-.4107007	.0338881
educ5	-.2389691	.1145561	-2.09	0.037	-.4636587	-.0142795
educ6	-.1841877	.1248566	-1.48	0.140	-.4290807	.0607053
_cons	5.399489	.1317816	40.97	0.000	5.141013	5.657964

Table 42: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: collfarman

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1075	.81061					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0050739	.0047015	-1.08	0.281	-.0142953	.0041475
stratum2	-.1768691	.0676696	-2.61	0.009	-.3095958	-.0441425
stratum3	-.0921895	.0695741	-1.33	0.185	-.2286517	.0442727
stratum4	-.0646607	.0681614	-0.95	0.343	-.1983519	.0690306
inc2	-.0990573	.0555353	-1.78	0.075	-.2079839	.0098693
inc3	-.0755028	.0487767	-1.55	0.122	-.1711731	.0201676
inc4	-.0503849	.0461256	-1.09	0.275	-.1408554	.0400856
age3	.1004885	.0362756	2.77	0.006	.0293378	.1716392
age4	.643379	.0755891	8.51	0.000	.495119	.791639
educ2	-.0842759	.1221243	-0.69	0.490	-.3238097	.1552579
educ3	-.1850865	.1231149	-1.50	0.133	-.4265632	.0563902
educ4	-.191546	.1136127	-1.69	0.092	-.4143852	.0312931
educ5	-.2433699	.1147787	-2.12	0.034	-.4684961	-.0182437
educ6	-.195694	.1249008	-1.57	0.117	-.4406735	.0492855
_cons	5.413333	.1317195	41.10	0.000	5.154979	5.671686

Table 43: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, social group variable: collfish

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1071	.81113					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0031639	.0053229	-0.59	0.552	-.0136041	.0072764
stratum2	-.187323	.0674187	-2.78	0.006	-.3195576	-.0550884
stratum3	-.0980703	.0698108	-1.40	0.160	-.2349968	.0388561
stratum4	-.0750732	.0678567	-1.11	0.269	-.2081669	.0580206
inc2	-.0979573	.0554303	-1.77	0.077	-.2066779	.0107633
inc3	-.0728324	.0487767	-1.49	0.136	-.1685028	.0228379
inc4	-.0490621	.0462236	-1.06	0.289	-.1397247	.0416006
age3	.0913882	.0369472	2.47	0.013	.0189202	.1638562
age4	.6318919	.0769817	8.21	0.000	.4809004	.7828833
educ2	-.0816892	.1218322	-0.67	0.503	-.3206501	.1572717
educ3	-.1821418	.1230979	-1.48	0.139	-.4235853	.0593017
educ4	-.1892241	.1133746	-1.67	0.095	-.4115963	.0331481
educ5	-.2402761	.1146258	-2.10	0.036	-.4651024	-.0154497
educ6	-.187336	.1250836	-1.50	0.134	-.4326742	.0580021
_cons	5.403917	.1321457	40.89	0.000	5.144727	5.663107

Table 44: Second Stage Regression, y pred from first stage regression with dependent variable: alcamt, all social group variables

Health = ß Y Pred +ß stratum2 + ß stratum3 + ß stratum4 + ß inc2 + ß inc3+ ß age3 + ß age4 + ß educ2 + ß educ3 + ß educ4 + ß educ5 + ß educ6

R-squared	**Root MSE**					
0.1035	.80113					
health	**Coef.**	**Robust Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Y Pred	-.0043278	.0045533	-0.95	0.342	-.0132589	.0046032
stratum2	-.1665849	.0705591	-2.36	0.018	-.3049831	-.0281866
stratum3	-.0806062	.0732341	-1.10	0.271	-.2242512	.0630388
stratum4	-.0698127	.0701763	-0.99	0.320	-.2074599	.0678346
inc2	-.0898387	.0557956	-1.61	0.108	-.199279	.0196015
inc3	-.061332	.0503247	-1.22	0.223	-.1600414	.0373774
inc4	-.0336648	.0480346	-0.70	0.484	-.1278822	.0605526
age3	.0968495	.0374612	2.59	0.010	.0233712	.1703278
age4	.6324089	.0788423	8.02	0.000	.4777637	.7870541
educ2	-.0398516	.1190265	-0.33	0.738	-.2733162	.1936129
educ3	-.1474476	.1209699	-1.22	0.223	-.384724	.0898288
educ4	-.1513899	.1111907	-1.36	0.174	-.3694848	.0667051
educ5	-.2015968	.1133753	-1.78	0.076	-.4239768	.0207832
educ6	-.1750743	.1257381	-1.39	0.164	-.4217033	.0715547
_cons	5.360015	.1341103	39.97	0.000	5.096964	5.623065