Built Environment and its Effects on Social Cohesion and Adolescent Alcohol Use

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For almost a century, the Chicago School and its followers have focused on neighborhoods and their effects on various outcomes, including deviance. Starting with Shaw and McKay (1969), there has been a substantial focus on the social capital and control that takes place within neighborhoods. The current paper focuses on how this neighborhood social cohesion and control is built. It examines how the physical built environment as well as the local institutions within an area affect how individuals interact. It then goes on to examine whether this social control then affects whether adolescents drink alcohol.

Social Disorganization and Concentrated Poverty

The main impetus to study the built environment as a root of social cohesion and control comes from social disorganization theory (Shaw and McKay 1969) and Wilson's concepts surrounding *The Truly Disadvantaged* (1987). The theory proposes that socially disorganized areas are characterized by high economic deprivation, population heterogeneity, and elevated levels of residential turnover. The residents in these areas have difficulty recognizing their common values and goals as well as maintaining social control within their neighborhood. The theory also suggests that the local institutions play a pivotal role in the lack of shared values (Kornhauser 1978). Socially disorganized communities often lack stabilizing organizations, like stores, parks, libraries, and recreation centers (Peterson, Krivo, and Harris 2000). Businesses may find it difficult to make profits in disadvantaged areas and larger regions may disinvest in the public spaces that residents need to share common goals. Importantly, poor individuals also do not have the power and to fight the creation of destabilizing institutions, like bars and check-cashing services (Peterson et al. 2000). Therefore, these neighborhoods experience a dearth of basic institutions that help create jobs and services that foster social cohesion and control but have a glut of other negative organizations.

Wilson's (1987; 1991) studies of concentrated poverty also offer important insights into the role of local institutions and their effects on social cohesion, control and deviance. He contends that industries changed during the 1970s and 1980s, causing cities and their populations to feel sharp, negative ramifications, such as shifts from goods-based business to services-based trades, as well as a growth in technology, movement from lower-wage to higher-wage jobs, and rising inequality. While all of the economic restructuring was taking place, he also asserted that working- and middle-class black families were moving to the suburbs, producing less stability in their old, urban neighborhoods. With the out-migration and changing economic scene in the city, he argued that concentrated poverty grew, creating a black underclass. The underclass is largely socially isolated from forms of mainstream society. With the out-migration, local institutions in these areas became few and far between, along with their ability to socialize residents into mainstream culture. Therefore, he saw this lack of institutions as a key reason why poverty leads to lack of social control and later to deviant behavior.

There is a debate as to whether the hypothesis is correct. Some evidence supports the idea that poverty and local institutions are inversely related while other research finds opposing conclusions. Messner and Rosenfeld (1997) draw on a police officer's observation of Englewood, an impoverished area of Chicago, to show that the area lacks basic stores and restaurants that middle-class people take for granted. This officer also notes that the kids have nothing to do, implying that this may affect crime rates. Ethnographic research, from Philadelphia, also support the notion that deprivation and deinstitutionalization are closely linked (Anderson 1999). Most studies have examined a single type of institution. For example, research shows that impoverished areas are much less likely to have child care centers (Queralt and Witte 1998; Siegel and Loman 1991). Other studies conclude that financial institutions vary in these

neighborhoods, in that, "payday lenders" are more common but general banks are less common (Pollard 1996; Graves 2003). Lastly, Morland, Wing, Diez Roux and Poole (2002) find that there are more grocery stores and restaurants in areas with higher median house value. Small and colleagues' research (2005; 2006) finds that as poverty increases, on average, the number of establishments increases as well. This relationship does vary greatly by city though. In fact, the relationship is stronger when the neighborhood is nestled within cities with better economics and in the South and West. Their research suggests that this may be due to the fact that they examined multiple different resources at once, unlike most of the other studies. It is clear that there is still much to study when examining Wilson's hypotheses.

Local Institutions

Peterson et al.'s (2000) research offers a further in depth investigation into the reasons why local institutions matter for crime. Their research suggests that places, like recreation centers and libraries, provide areas where residents can see each other in a public space. This in turn helps to create networks that help to build social capital as well as provide social control. Additionally, these institutions may deliver activities that facilitate the realization of common goals and values. They also contend that businesses provide employment opportunities, which keep individuals to a regular work schedule. Economic enterprises also present residents with another place to assemble and see each other. Further, businesses connect the neighborhood with more macro-level resources, like regional or state governments and business associations. This provides the community with more opportunities to gain resources that may help with crime control. Lastly, the presence of business in a community may show outsiders that the area is thriving and worth moving into. Therefore, economic institutions may help with mobility into the neighborhood. While their research suggests that these institutions reduce crime through possible

growth in social controls, their study does not fully test these hypotheses. They are more concerned with macro-level factors, like economic deprivation and residential instability.

Other past research regarding the effect local institutions on problem behaviors and feelings of community in neighborhoods can generally be split into two focuses: those on the role of basic institutions and those focused on role of bars/taverns. Using ethnographic methods, research finds that beauty salons and "mom and pop" shops (Sanchez-Jankowski 2008), grocery stores and clinics (Yen and Kaplan 1999), and childcare centers (Small 2006) are important stabilizing institutions in disadvantaged areas, which offer a communal atmosphere and a place to gather. Additionally, Sampson, Raudenbush, and Earls (1997) contend that neighborhood institutions provide a place for neighbors to develop social control and feelings of collective efficacy that in turn reduce deviant behaviors. Similarly, Sampson, Morenoff, and Earls (1999) find that there is a positive relationship between neighborhood institutions, including youth centers, mental health services, after-school programs, crime prevention programs, and block groups, and social control of children. Lastly, Peterson et al. (2000) find that certain institutions, specifically recreation centers, may reduce crime, but they also note the importance in preventing destabilizing institutions, like bars, to move into the area.

Bars and liquor stores are especially common in impoverished neighborhoods, and therefore offer the possibility of especially negative effects in these areas (Morland et al. 2002). Peterson et al. (2000) offer two perspectives on why the presence of alcohol establishments may lead to heightened crime. First, they suggest that bars are places where individuals spend time with non-traditional role models as well as become intoxicated, which can exacerbate problem behaviors. Additionally, they indicate that the presence of bars and alcohol outlets in a neighborhood may be an indication that the residents are unable to gain the political power to

stop the establishments from moving in. Their own research does suggest that bars and taverns do have significant effects on crime. Duncan, Duncan, and Stryker (2002) also find that more alcohol selling venues increases drug and alcohol arrests.

Adolescent Alcohol Use

To date there are limited studies on the effects of local institutions and adolescent alcohol use despite the prevalence of drinking. Duncan et al. (2002) offer a study of alcohol retail stores in one city in the Pacific Northwest. They conclude that more stores leads to less social cohesion in the neighborhoods. This lack of cohesion increases perceptions of alcohol and drug being problematic in the area, which in turn increases juvenile alcohol and drug arrests. Snedker, Herting, and Walton (2013) use data from the Seattle metropolitan area and find levels of adolescent drinking are lower in areas with more public health clinics, net of disadvantage. The current study adds to local institutions literature by examining alcohol use as an outcome. Of all the various substances that adolescents use, alcohol continues to have the highest prevalence levels (Johnston, O'Malley, Bachman, and Schulenberg 2013). Based on this high use rate, as well as the negative health outcomes, it is important to study its possible predictors.

Neighborhood Design

Drawing on urban geography, this study also includes other measures of neighborhood design. Local institutions are only one aspect of the city and how it's built. Therefore, this paper examines how other aspects of the built environment affect social cohesion. An important strand of the literature focuses on the built environment and its effects on fear of crime (Foster, Giles-Corti, and Knuiman 2010; Foster and Giles-Corti 2008, Foster, Knuiman, Villanueva, Wood, Christian, and Giles-Corti 2014). It suggests that good neighborhood design can lower fear due to increased informal social control. Foster et al. (2010) suggests that this occurs through

fostering public engagement, facilitating movement throughout the neighborhood and providing guardians. Therefore this paper also examines street connectivity and population density as other forms of design that may affect social cohesion and then alcohol use.

This study focuses on three main research questions. First, do factors of neighborhood design affect adolescent alcohol use? These include the number of local institutions within the neighborhood, the street connectivity, and the population density. I hypothesize that more institutions within a neighborhood will lead to less adolescent alcohol use. I also postulate that neighborhoods with more street connectivity and higher density will decrease alcohol use. Second, is this relationship mediated by the neighborhood social cohesion? I believe that more increased institutions, street connectivity and density will increase neighborhood social cohesion because individuals will be more likely to network and feel interrelated. These feelings of cohesion will then produce social control which will decrease adolescent alcohol use. Third, does social cohesion moderate the relationship between neighborhood design and alcohol use? I hypothesize that neighborhoods with more institutions, street connectivity, and population density will have even lower levels of alcohol use when they are more cohesive.

Data

This study uses Waves I and II of the National Longitudinal Study of Adolescent Health (ADD Health) to test hypotheses. Add Health is based on a random stratified sample that generalizes to all school-attending adolescents in the United States (University of North Carolina). Currently, the survey contains four waves of data of which this study uses Wave I and Wave II. Wave I was collected between 1994 and 1995, while the adolescents were in 7th to 12th grades. Wave II was collected a year later in 1996. Wave I contains interviews of children in-school, of school administrators, and of children and parents at-home. Schools were stratified

into clusters based on region, level of urbanization, school size, school type, percent white, percent black, grade span, and curriculum. After selecting 145 middle, junior high, and high schools, 90,118 students were interviewed along with 144 school administrators. After a 45-minute in-person, paper questionnaire at school, the school provided a roster of all students enrolled in order to interview the children at home. Students were stratified based on age and sex. Over-samples were taken in order to study ethnicity, social networks, disabilities, and my focus, siblings. In the end, 20,745 children were interviewed by CAPI/ACASI in their homes. Children were eligible for the over-samples based on the information garnered from the at school interview. Neighborhood and community level variables come from the U.S. Census.

The current study also uses the Obesity and Neighborhood Environment Files that are appended onto the Add Health data. Using spatial analysis techniques, these data link the respondent's residential address to neighborhood level data. These data include physical, social, and economic factors of the respondent's neighborhood. They were measured at Wave I and Wave III, of which, the current project uses Wave I. The variables come from many sources, including StreetMap 2000, the 1990 U.S. Census, and the Dun & Bradstreet Corporation.

This study will focus on 12,836 of the respondents originally interviewed at Wave I. For the purpose of this analysis, I only use respondents that have valid answers for all of the variables. Therefore, the data went through a process of listwise deletion. Additionally, respondents were dropped when they were missing neighborhood ID variables. A total of 671 respondents were therefore eliminated from the analytic sample.

Measures

Dependent Variable

Adolescent alcohol use is measured using one question from the Wave II interview. Adolescents were asked, "During the past 12 months, on how many days did you drink alcohol?"

Responses for this measure included 1=every day or almost every day, 2=3 to 5 days a week, 3=1 or 2 days a week, 4=2 or 3 days a month, 5=once a month or less (3-12 times in the past 12 months), 6=1 or 2 days in the past 12 months, and 7=never. Research has suggested that the effects of alcohol use are nonlinear (Crosnoe et al. 2004; Chassin et al. 1999) so the current study created a dichotomous variable, as has been done in other studies (Crosnoe and Riegle-Crumb 2007). Those who responded that they had drunk alcohol within the past 12 months were given a 1, while everyone else was given a 0.

Focal Independent Variables

      Neighborhood institutions were used from the ONE dataset. The measures were constructed by Dun and Bradstreet Corporation. Each variable includes a count of the institutions within 1, 3, 5, and 8.05 km (5 miles) of the respondent's home address. The locations were coded based on company names and their trades. The current study uses measures of parks, schools, and youth organizations within 1 km of the respondent's home. Parks include establishments of amusement, recreation, or that include park in their name. Schools include kindergartens, elementary, secondary, and high schools, as well as colleges and universities. Youth organizations include places like youth camps, YMCAs and boy and girl scout organizations. Based on the distribution of the variables, each was given a ceiling value. Therefore, parks is measured from 0-1 or more, schools 0-9 or more, and youth organizations 0 to 2 or more. *Street connectivity* is measured by the ratio of the count of three way intersections to the total service area. This is the same measure as used in Foster et al. (2010). This measure was created by Environmental Systems Research Institute in Redlands, CA. It is a variable from their StreetMap 2000 product that was created from roads data from Geographic Data Technology. *Population density* is based on two different variables from the 1990 U.S. Census

block group information. It is the ratio of the population to the area. The block group population

and the area are measured within 1, 3, 5, and 8.05 km of each Wave I respondent.

Neighborhood Variables

Social cohesion is a scale constructed based upon a measure used by Harding (2009).

This measure is captured from questions during the first wave interviews regarding their

neighborhoods. Respondents are asked to indicate whether the following statements are true or

false: "You know most of the people in your neighborhood," "In the past month, you have

stopped on the street to talk with someone who lives in your neighborhood," and "People in this

neighborhood look out for each other." Responses are dichotomized with "true" coded as "1" and

"false" coded as "0." The scale is a sum of the responses to these three variables with a higher

score indicating higher levels of social cohesion (Cronbach's α=0.5858).

Neighborhood advantage is a standardized mean scale of the neighborhood-level

proportion of the population age 25 and older with a bachelor's degree or higher, proportion of

population age 16 and older employed in a management or professional occupation, and

proportion of families with a reported income of $50,000 and higher over the past 12 months

(Cronbach's α=0.90).

Control Variables

Male (Wave I) is a dummy variable of whether the respondent indicated he/she was male

or female. *Individual race/ethnicity* (Wave I) is measured based whether the respondent's

answers to the following questions: "are you of Hispanic or Latino origin?" and "what is your

race?" Response options included indicated he/she is white, black or African American,

Asian/Pacific Islander, American Indian/Native American, or other race. The created categories

are mutually exclusive and include white, black, and Hispanic after sample exclusions. Priority

was given to those indicating that they were of Hispanic or Latino origin. *Age* (Wave I) is a continuous measure in years. *Family structure* (Wave I) is a dummy variable reflecting whether the respondent lives with two-biological parents (coded 1) or any other family type (coded 0), including step-parents, single-parents, or other family structures. *Family socioeconomic status* is a measure constructed based on the occupation and education of the respondent's mother and father at Wave I, as has been previously done by Bearman and Moody (2004). Each of the variables for education and occupation were recoded from their raw state to five point scales (low to high). The ten point scale is based on the sum of both of the five point scales of education and occupation. It is created for both the respondent's mother and father and the maximum value is taken for the SES measure.

This paper will use hierarchical logistic modeling to examine how the built environment affects adolescent alcohol use. This type of modeling is needed to the dichotomous nature of the dependent variable as well as to account for the multilevel nature of the data. In order to determine which measure of resources and population density should be used, I will run an interaction of the social control variable and the distances predicting alcohol use. This should give me a better idea of whether more proximate resources matter for alcohol use or whether farther away ones are important as well. The first models will include each of the built environment characteristics, resources, street connectivity, and population density, to predict alcohol use. The second model will include all of the resources together to see if their results hold, net of each other. The third model will add social cohesion variables to examine if there are reduced effects of the environment characteristics. Next, the control variables, and then neighborhood advantage, will be added to examine whether the relationships hold even when

accounting for the neighborhood resource level. Lastly, I will examine whether there are interactions between social cohesion and the local institutions.

Analyses

Descriptive Statistics

Table 1 shows the descriptive statistics for the sample. Over 18 percent of adolescents indicated having drank alcohol in the last twelve months. On average, most respondents did not live within 1km of a park, but did live that close to almost two schools. Additionally, most adolescents did not live within 1km of a youth organization. Over half of the sample is white, while about 20% are black and 16.9% are Hispanic. On a scale from 1 to 10, respondents' family socioeconomic backgrounds measure about a 5, indicating that on average, they come from middle-class families. On average, respondents are just over fifteen-years-old, and the majority come from two-biological parent households. Lastly, when examining the neighborhood advantage measures, we see that around a quarter of the tracts are composed of people in managerial positions, college-educated individuals, and families who earn $50,000 or more.

The first model shows the bivariate relationships between each of the independent variables and adolescent alcohol use. Each of the three local institutions, parks, schools, and youth organizations, are all correlated with lower adolescent alcohol use. Increased numbers of 3+ intersections and higher population density also decreases adolescent alcohol use.

Multivariate Analyses

Model 2 examines the effects of the local institutions. This model shows that increased parks and schools within a 1km distance from the adolescent's home leads to decreased adolescent alcohol use. When including all three institutions together, youth organizations no longer has a significant effect on the odds of alcohol use. Model 3 adds in the other factors of

neighborhood design. When accounting for intersections and population density, the effects of schools is reduced to non-significance. The likelihood of alcohol use is increased when an area has less 3-way intersections. Model 4 examines whether neighborhood social cohesion mediates the relationship between the institutions and environmental characteristics and alcohol use. Interestingly, increased social cohesion raises the likelihood of adolescent alcohol use, and its inclusion does not decrease the effects of parks and intersections. Model 5 includes other variables that may account for the focal relationships. As previous literature has shown, black adolescents have significantly lower odds of drinking alcohol than whites. Similarly, other races drink significantly less than white adolescents. Males' odds of drinking are significantly higher than females. Individuals from higher SES family backgrounds and two biological parent households. When accounting for these variables, there are some suppression effects. The effects of population density and neighborhood social cohesion both become stronger. Model 6 adds neighborhood advantage to conclude whether the relationships between local institutions and built environment and alcohol use are due to the neighborhood context. Increased neighborhood advantage leads to increased odds of alcohol use. Otherwise, there are similar relationships as in the previous model. The next two models examine whether there is a significant interaction between social cohesion and the local institutions. Model 7 suggests a marginal interaction between social cohesion and the number of schools in the area. Model 8 shows that there is a significant interaction between youth organizations and social cohesion. A model was also run to examine the effect of parks and social cohesion, but there was no significant relationship. Figures 1 and 2 show plots of the interactions. Each plot and interaction suggests that as areas become more cohesive, the positive effect of the institutions is lowered. This means that generally institutions lower alcohol use, but when neighborhoods are tightly knit, this effect is

smaller than when the neighbors do not interact and know each other. This is the opposite of hypothesized.

Discussion

The goal of the current study was to examine the relationship between a neighborhood's design, including their local institutions, street connectivity, and population density, and adolescent alcohol use and to test hypotheses presented by prior research on the subject (Peterson, Krivo, and Harris 2000). The first hypothesis tested was that there would be a significant negative relationship between local institutions and the likelihood of adolescent alcohol use. This hypothesis was partially supported. At the bivariate level, each of the institutions predicts lower levels of drinking. When examining the effects in later models, increased parks in the area decreased alcohol use. Interestingly, results suggest that highly connected street layouts significantly lower alcohol use as does having a more dense population. The next hypotheses stated that social cohesion would mediate the relationship between the built environment and alcohol use. These hypotheses were also not supported by the results of these models. For the most part, the effects remained the same when including social cohesion in the model. The effect of social cohesion was significant though, showing that more cohesion actually increases the likelihood of adolescent alcohol use.

Lastly, there were significant interactions between schools and youth organizations and social cohesion. The interactions found that higher levels of social cohesion impede the positive effect that these institutions have on adolescent alcohol use. While at first thought, this may be surprising, there is evidence to suggest that tight-knit areas sometimes lack the ability to control their community. For example, Browning, Feinberg, and Dietz (2004) find evidence of what they call negotiated coexistence. This means that in some areas, cohesion can actually be

negative. Offenders may actually be protected from strict forms of social control because they are embedded within networks within their neighborhoods. They find support of this theory in that areas the violence lowering effects of collective efficacy are actually reduced when people experience high levels of interaction and strong networks. Similarly, Pattillo's (1998) ethnographic research suggests that dense networks have the effect of crime reduction through social control, but in certain areas, these networks also include criminals themselves. Her study shows evidence of simultaneously positive and negative effects of cohesive and strongly networked neighborhoods. Adolescents in neighborhoods with higher levels of social cohesion may not benefit as strongly from institutions due to either increased exposure to delinquency or the lack of social control. These results illustrate that there can be a downside to social capital and close bonds.

As with any research, there are limitations to the current study. While Add Health does have the specific advantage of including both neighborhood and individual-level variables, the data do lack in certain areas. A more extensive measure of social cohesion would be ideal to examine its possible mediating effects. Measures regarding the local institutions could also benefit from including more forms of institutions such as healthcare centers or libraries. Additionally, prior research suggests the importance of alcohol outlets in the area so this would be another useful measure. Further, this study uses only three measures of the neighborhood design. In the future, I would like to examine other aspects of the physical environment. I would particularly be interested in the presence of sidewalks and how they may or may not affect the neighborhood's ability to come together and control the behaviors taking place. I also would like to see whether the positive effects of street connectivity and parks remain for other types of outcomes. There is reason to believe that adolescent alcohol use works in different ways than

other more rare behaviors, like violence, due to its normativity. Lastly, in the future, I would like to apply this to a single city to see how it plays out in specific cities and settings.

Understanding how context influences individual behavior has become more prominent in recent research. This research illustrates that context matters for explaining differences in levels of deviant behavior. The current study sought to examine how the presence of local institutions, such as schools and public facilities, as well as street connectivity and population density affects adolescent drinking patterns. Although the hypotheses were not supported, the results still have implications for understanding how local institutions, along with factors like social cohesion, play a role in shaping adolescent alcohol use. The results also illustrate that more research is necessary to fully understand this relationship.

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Table 1. Descriptive Statistics (N=12,836)

| Variable	Mean/Proportion	Standard Error	Range
Alcohol Use	0.185		0-1
Local Institutions			
Parks within 1km	0.009	0.093	0-1
Schools within 1km	1.852	2.359	0-9
Youth Organizations within 1km	0.219	0.521	0-2
Built Environment			
3-way Intersections within 1km	30.498	23.264	0-168.07
Population Density within 1km	0.002	0.002	0.000-0.030
Social Cohesion	2.214	0.977	0-3
Race/Ethnicity			
White	0.551		0-1
Black	0.204		0-1
Hispanic	0.169		0-1
Other	0.076		0-1
Gender			
Male	0.487		0-1
Female	0.513		0-1
Family SES	5.552	2.672	1-10
Age	15.358	1.599	11-21
Two Biological Parent Household	0.545		0-1
Neighborhood Advantage	-0.0001	0.008	-1.766-3.932
Proportion employed in managerial and professional specialty occupations	0.225	0.001	0-0.712
Proportion aged 25+ with college degree or more	0.227	0.001	0-0.778
Proportion families with income $50,000 or more	0.274	0.00	0-0.883

Table 2. Hierarchical Logistic Models Predicting Adolescent Alcohol Use

Variables	Zero-order Model Coef.	Model 2 Coef.	Model 3 Coef.	Model 4 Coef.	Model 5 Coef.	Model 6 Coef.
Parks	-0.811*	-0.748*	-0.766*	-0.767*	-0.624†	-0.626†
	(0.365)	(0.366)	(0.366)	(0.366)	(0.369)	(0.369)
Schools	-0.039**	-0.032*	-0.002	-0.002	0.005	0.002
	(0.013)	(0.014)	(0.016)	(0.016)	(0.016)	(0.016)
Youth Organizations	-0.128*	-0.088	-0.040	-0.038	-0.027	-0.026
	(0.056)	(0.058)	(0.059)	(0.059)	(0.060)	(0.060)
Intersections	-0.008***		-0.007***	-0.007***	-0.006***	-0.006**
	(0.002)		(0.002)	(0.002)	(0.002)	(0.002)

Population Density	-56.084**		-22.719	-21.402	-44.509*	-40.912*
	(16.600)		(18.122)	(18.120)	(18.653)	(18.592)
Neighborhood Social Cohesion	0.087***			0.085**	0.124***	0.126***
	(0.025)			(0.025)	(0.026)	(0.026)
Black	-0.516***				-0.686***	-0.660***
	(0.078)				(0.086)	(0.086)
Hispanic	0.284***				-0.014	0.004
	(0.072)				(0.084)	(0.085)
Other	-0.788***				-0.907***	-0.895***
	(0.118)				(0.126)	(0.126)
Male	0.433***				0.376***	0.377***
	(0.047)				(0.048)	(0.048)
Family SES	0.010				0.028**	0.021*
	(0.009)				(0.010)	(0.010)
Age	0.307***				0.309***	0.310***
	(0.016)				(0.016)	(0.016)
Two Biological Parent Household	-0.209***				-0.264***	-0.267***
	(0.048)				(0.050)	(0.050)
Neighborhood Advantage	0.138***					0.105**
	(0.032)					(0.034)
Schools*Social Cohesion						
Youth Organizations*Social Cohesion						
Intercept		-1.677***	-1.526***	-1.719***	-6.545***	-6.524***
		(0.089)	(0.094)	(0.111)	(0.296)	(0.297)

All models include variables to account for sampling design: geographic area, school size, school urbanicity, school type, an

*p<0.05, *p<0.01, *p<0.001

**Figure 1. Effect of Social Cohesion on the Relationship between Schools and Predicted Li
(N=12,836)**
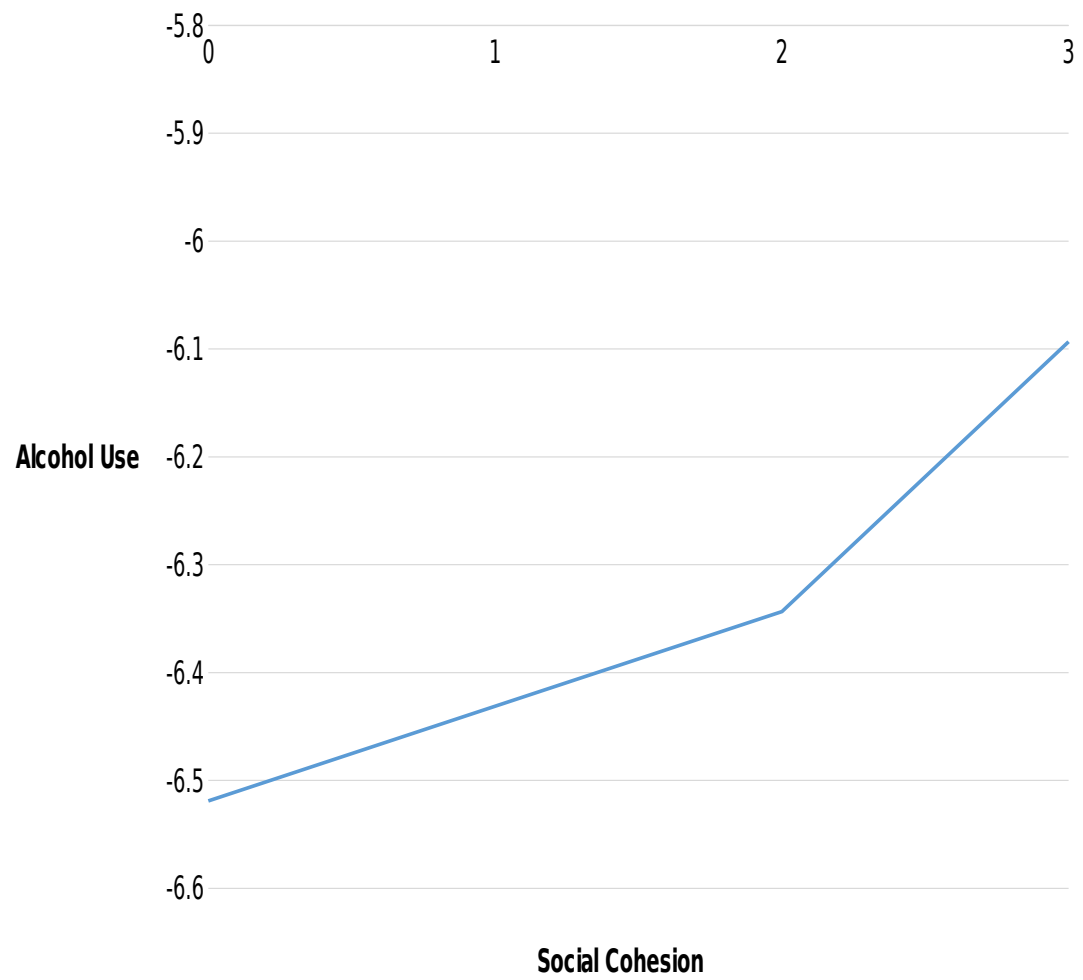
Figure 2. Effect of Social Cohesion on the Relationship between Youth Organizations and Predicted Likelih