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**Socializing Interactions and  
Social Attitude Formation**

**Abdul Munasib**

Assistant Professor of Economics  
Department of Economics and Legal Studies in Business  
Oklahoma State University  
343 Business Building  
Stillwater, OK 74078-4011  
Phone (405) 744-8763  
Fax (405) 744-5180  
e-mail [munasib@okstate.edu](mailto:munasib@okstate.edu)

**Devesh Roy**

Research Fellow  
Markets, Trade, and Institutions Division  
International Food Policy Research Institute (IFPRI)  
2033 K. St., N.W.  
Washington, DC, 20006-1002 U.S.A.  
Phones (202) 862-5691  
Fax (202) 467-4439  
e-mail [d.roy@cgiar.org](mailto:d.roy@cgiar.org)

Department of Economics  
Oklahoma State University  
Stillwater, Oklahoma

339 BUS, Stillwater, OK 74078, Ph 405-744-5110, Fax 405-744-5180  
Harounan Kazianga [harounan.kazianga@okstate.edu](mailto:harounan.kazianga@okstate.edu)  
Abdul Munasib [munasib@okstate.edu](mailto:munasib@okstate.edu)

# Socializing Interactions and Social Attitude Formation

## Abstract

Social attitudes (beliefs) are increasingly being recognized as factors that are important in determination of the outcomes that interests economists. In the United States as Glaeser and Ward (2006) have shown, the differences in beliefs on social issues such as acceptability of legal abortion or homosexuality exhibit remarkable differences and vary widely across space. Ansolabehere et al. (2006) using the red state (republicans) blue state (democrat) distinction show that differences across these regions among voters was much more prominent in terms of moral (social) issues than economic issues in the 1970s and 1980s. What could explain the differences in beliefs across space? One possibility that can explain the observed patterns of distribution of social attitudes could be the effect of local socializing interactions. If the views of the people are conditioned mostly by those around them as Glaeser and Ward (2006) have argued then the observed patterns of social attitudes could be a result of the nature of socializing interactions. In this paper, we investigate the role of socializing interactions in determining social attitudes in American communities. Using data on social attitudes and socializing interactions at the community level, we show that local interactions do affect the formation of social attitudes significantly. Moreover, the effect varies across the type of socializing interactions. Memberships in non-religious organizations and interaction with friends have an effect towards more libertarian social attitudes (agreeable to euthanasia, abortion, homosexuality and greater tolerance towards marginalized groups). Interactions with family have the opposite effect towards the formation of social attitudes. Our estimation uses a range of economic, social and demographic controls at the cluster level. We interpret our results drawing from the social psychology literature where the interactions that bring contacts with individuals with certain attributes (such as homosexuality) or with individuals with certain views about individual attributes (i.e. having a more favorable view about homosexuals) leads to more agreeable positions. The types of interactions differ in the possibilities that they contain in terms of allowing such contacts.

**Key Words:** Social attitude, social networks, socializing interaction, contact hypothesis, sorting

**JEL Classification:** D85, R, R11, Z13

## I. Introduction

Mainstream economics has increasingly started valuing the role of social attitudes in the outcomes that interests economists. Though the debate on the moral versus economic issues as determinants of election outcomes in the United States has become mainstream in the literature (Glaeser and Ward 2006 , Ansolabehere et al 2006), the purport of social attitudes extends far beyond political economy. Various outcomes that essentially matter to economists are jointly determined by social attitudes along with choices based on optimization by agents over a menu of goods. Consider for example, the issue of female education (more so in developing countries). The price of education and expected returns from education are accepted as standard determinants of outcomes but it is hard to argue that these outcomes are independent of the underlying social attitudes of the agents. Similarly, the attitudes towards gun control in the United States could affect the gun law and thus affect the outcomes for gun and the gaming industry.

There has been much discussion on the hypothesis by Levitt and Donohue (1999) that legalizing abortion affected crimes in the U.S. by preventing birth of unwanted babies who were more likely to grow into criminals. Though legalization of abortion in the 1970s was not established to be an outcome of majority social attitudes but if one took the chain of reasoning where social attitude towards abortion determines the constituency for pro or anti abortion policies, this can be conjectured to lead to policy outcomes as Levitt and Donohue (1999) propose. Alternatively, the effect of social attitudes on economic outcomes is often straightforward and not necessarily mediated through the policy change it entails. For instance, Gerland (2004) shows that HIV-AIDS prevention strategies in Malawi is a function of the social attitudes of the populace.

Even though it is widely recognized that social attitudes play important roles in the determination of outcomes economists study, a relatively scant literature on the formation of such attitudes exists. It is reasonable to conceive of the social attitude formation as partly determined by initial conditions and subsequently affected by some flow variables. Glaeser and Ward (2006) allude to such flow variables in the formation of social attitudes. They point out that America is a country with remarkable geographic diversity in its habits and beliefs where people in different states have wildly different views about religion, homosexuality, AIDS, and military policy, as well as wildly different consumption patterns. Further, they argue that,

*“People in different states in the United States have been exposed to quite similar evidence through national media outlets, but they have reached radically different conclusions, and continue to hold these conclusions despite being aware that others disagree. This disagreement requires either different prior beliefs or some other deviation from Bayesian reasoning. One natural alternative model is that people base opinions mostly on the views of those around them. As such, local interactions are critical, and these provide plenty of possibility for wide geographic variation (as in Glaeser, Sacerdote and Scheinkman, 1996; Murphy and Shleifer, 2004).”*

In this paper we focus on the role of local interactions in the formation of beliefs or social attitudes. Depending upon what kind of beliefs that agents get exposed to during the course of social interactions, different attitudinal effects are likely. Surprisingly, even though the significance of social interactions in formation of social attitudes is commonly recognized, the empirical literature mapping this effect does not exist even for the United States where the data for such an analysis exists and is widely accessible. There are several inputs into the formation of social attitudes that jointly determine the outcome, hence isolating the impact of local interactions per se is empirically challenging. Moreover, social interactions are not homogenous from the point of affecting social attitudes mainly because of the menu of beliefs and attitudes that they offer to an individual. For example, interactions in a church certainly offer exposure to different set of beliefs than that in a recreation club.

There does not exist an established economic theory that relates to this differentiated effect on the formation of social attitudes based on the nature of social interactions. The basis for such a theorizing comes from social psychology viz. the contact hypothesis, first developed by Allport (1954). Based on contact hypothesis, within-group or inter-personal interactions (labeled as contacts) result in reduction of prejudice about one of the groups or the individual if it exists prior to contact. Thus, knowing a homosexual person closely (or knowing someone who knows a homosexual person closely) should lead to a greater tolerance about homosexuals. According to social psychologists, this happens by revealing an essential similarity that undermines hostile inter-group attitudes and beliefs.

We draw upon the contact hypothesis to offer an interpretation to our estimated correlations between socializing interactions and social attitudes. Dividing the social interactions based on the homogeneity in attitudes that they entail, we also estimate the correlations between

different types of socializing interactions and social attitudes. Interactions with family are likely to be among people with more homogeneity in beliefs compared to interactions that arise through memberships in a non-religious organization. As a result, those who socialize mostly among relatives are less likely to come in contact with a variety of people or opinions compared to those who socialize in non-religious organizations which allow exposures to diversity (in both people and opinions).

Using geographical cluster based information from the Generalized Social Survey (GSS) and combining with several other data sources, we find evidence that local social interactions do affect social attitudes significantly. Moreover, the nature of the effect is different across types of social interactions. Interactions through memberships in non-religious organizations, in almost all cases of social attitudes, lead to more libertarian attitudes. Interactions with relatives, on the other hand, lead to less libertarian attitude in case of a number of social attitudes.

In the remaining of the paper, we discuss possible connections between social attitude and socializing interactions in section II, the data in section III, empirical methodology in section IV and results in section V. Section VI concludes.

## **II. Social Attitude and Socializing Interactions**

According to Brewer and Brown (1998), the contact hypothesis remains as one of the most long-lived and successful ideas in the history of social psychology. The basic intuition behind the application of the hypothesis in this paper is the following. Hot-button social issues such as abortion, euthanasia or homosexuality define the conditions of a very small proportion of the population. Interacting either with these individuals (a direct interaction) or with those who are closely associated with these individuals (an indirect interaction) require a forum where individuals of different variety come together and exchange their views. Those kinds of forums are not likely to be offered, for the majority of the population, in a gathering where different types of people (or people different types of opinions) cannot come together (e.g., a family gathering).

The prior is that social interactions that involve more *ex ante* potential for heterogeneity in social attitudes lead *ex post* to more libertarian set of attitudes. The reverse is conjectured to be true for interactions that expose individuals to more homogenous set of beliefs. In the contact hypothesis, the reduction of prejudice follows from contact. Thus, those without prejudice are

assumed to have already been in contact. This creates an asymmetry where the possibility of greater contact creates a movement towards more libertarian attitudes for those with non-libertarian prior beliefs but the converse does not hold.

We expect socializing interactions and social attitudes to be correlated due to the following reasons. First, people may sort into different geographical locations based on the social attitudes of the location. Secondly, within the location, people may form groups based on social attitudes. And finally, interactions within the group may mould social attitude due to contact. Our objective is to separate out the causal effect of socializing interaction on social attitude.

As for different types of socializing interactions, consider interactions in non-religious organizations, in a group of friends or with relatives. In case of non-religious organization, the basis for joining such groups do not necessarily hinge on social attitudes; often times there are other reasons that forms the basis for formation of such groups (hiking clubs, for instance, are formed on the basis of shared interests in hiking). Therefore, non-religious organizations have the potential to offer a much diverse contact space. Although homophile in friendship formation is likely to be strong, there can still be some diversity in contact spaces offered by groups of friends and neighbors. Relatives, on the other hand, perhaps provide the least diverse contact space.

Among the determinants of social attitude, first, are two types of socializing interactions: restrictive and broadening. The ‘restrictive’ ones offer limited opportunities for contact with diverse set of people and views while the types of interactions that are ‘broadening’ offer contact with different people and views. Our hypothesis is that the socializing interactions of the second type (broadening interaction) provide the background for the working of the contact hypothesis. Thus, interactions in recreation clubs are more likely to lead to more libertarian or tolerant attitudes. In the interactions of the first type (restrictive interaction) create a limited scope for the contact space. In this case, for example, time spent interacting with family members is less likely to provide a contact space for more accommodating stance on homosexuality.

## II.1. Model

Motivated by the we assume that the evolution of the tolerance level of individual  $i$  in location  $k$ , denoted by  $\tau_{ik}$  is,

$$(1) \quad \tau'_{ik} = g(\tau_{ik}, x_{ik}),$$

where, a prime indicates next periods value and  $x$  denotes the socializing interactions which captures the heterogeneity levels that the individual is exposed to. Thus, tomorrow's tolerance level depends on today's tolerance level and the exposure to heterogeneity, and it is this second argument that captures the contact hypothesis (Bayesian updating). Vector  $x_{ik} = (x_{ik}^j \mid j = 1, \dots, J)$  includes different types of socializing interactions embodying different types of heterogeneity exposures. For instance, if  $x_{ik}^j$  denotes socializing with relatives, and hence low levels of heterogeneity exposure, the marginal impact of  $x_{ik}^j$  could be very different from  $x_{ik}^l$  denoting socializing in organizational activities where heterogeneity exposure is high.

The individual  $i$  in location  $k$  maximizes that instantaneous utility function,

$$(2) \quad u_{ik} = u(x_{ik}, s_{ik}; \theta_{ik}, \rho_k),$$

where,  $s_{ik}$  denotes the side benefit that the individual chooses. Parameters  $\{\theta_{ik}, \rho_k\}$  denoting the individual characteristics and the neighborhood (physical location) characteristics, respectively, determine the feasible set over which the individual optimizes by choosing the  $(x_{ik}, s_{ik})$  bundle.

Thus, for every location  $k$ ,  $\forall \tau \in \mathfrak{R}$ ,  $\delta \in (0,1)$ , the infinite horizon Bellman equation is,

$$(3) \quad V(\tau) = \max_{x_i, s_i} u(x_i, s_i; \theta_i, \rho) + \delta V(g(\tau_i, x_i)).$$

The first order conditions of this problem are,

$$(4) \quad 0 = u_x(x_i, s_i; \theta_i, \rho) + \delta \lambda(g(\tau_i, x_i)) g_x(\tau_i, x_i),$$

$$(5) \quad 0 = u_s(x_i, s_i; \theta_i, \rho),$$

where  $\lambda \equiv (\partial V / \partial \tau)$ . The envelope theorem yields,

$$(6) \quad \lambda(\tau) = \delta \lambda(g(\tau_i, x_i)) g_\tau(\tau_i, x_i).$$

Equation (6) implies,

$$(7) \quad \delta \lambda(g(\tau_i, x_i)) = \lambda(\tau) / g_\tau(\tau_i, x_i).$$

Combining equations (4) and (7) we obtain,

$$(8) \quad 0 = u_x(x_i, s_i; \theta_i, \rho) + \frac{\lambda(\tau) g_x(\tau_i, x_i)}{g_\tau(\tau_i, x_i)}.$$

Equation (6) implies an implicit function,

$$(9) \quad \tau_i = F(x_i, s_i; \theta_i, \rho).$$

With Taylor approximation around the mean we obtain,

$$(10) \quad \bar{\tau}^k = F(\bar{x}^k, \bar{s}^k, \bar{\theta}^k, \rho^k)$$

where,  $\bar{\tau}^k = E(\tau | k)$ ,  $\bar{x}^k = E(x | k)$ ,  $\bar{s}^k = (s_i | k)$ , and  $\bar{\theta}^k = E(\theta_i | k)$  are the conditional means with the reference being the geographical location.

## II.2. Estimation

Before we can introduce econometric specification to attempt an estimation of equation (10) we need to take into account of potential identification problems that usually arise in estimations of social interaction models. Following Manski (1993), we assume that the social attitude of a member of the population is,

$$(1) \quad \tau = \beta_0 + \beta_1 \cdot E(\tau | \rho) + E(z | \rho)' \beta_2 + z' \beta_3 + x' \beta_4 + u,$$

$$(2) \quad E(u | \rho, z) = \rho' \delta.$$

where,  $z = (s, \theta)$ . Superscript  $k$  has been dropped for simplicity. The term  $E(\tau | \rho)$  denote neighborhood level social attitude,  $E(z | \rho)$  denotes neighborhood level population characteristics, and  $u$  denotes unobserved characteristics. The mean regression of  $\tau$  on  $(\rho, z)$  has the linear form,

$$(3) \quad E(\tau | \rho, z) = \beta_0 + \beta_1 \cdot E(\tau | \rho) + E(z | \rho)' \beta_2 + z' \beta_3 + x' \beta_4 + \rho' \delta.$$

Our primary interest is  $\beta_4$  that estimates the direct effects of socializing interaction on social attitude. If parameters  $\beta_1 \neq 0$  and  $\beta_2 \neq 0$ , then they represent *endogenous* and *exogenous* social effects, which are not identified because there may be exogenous factors that determine both  $E(\tau | \rho)$  and  $E(z | \rho)$ . There can also be a correlated effect represented by  $\delta$  where individuals in a group tend to behave similarly because they have some similar characteristics or face similar institutional environment. Note that is  $E(\tau | \rho)$  can in fact be viewed as peer groups effects.

We face the following problem in running individual level regressions. The GSS is a repeated cross section and few individuals were asked both the social attitude and socializing interaction variables. No individual was asked both the tolerance questions (e.g., towards racists and communists) and socializing questions. In a large number of cases (tolerance toward same-sex people, militarists, and some of the key questions on abortion and hot-button political issues)



the number of observations to run individual regressions is not very large (in the neighborhood of 600 observations).

Another issue about estimating (3) is that we do not have information at the neighborhood  $k$  level of the individual. The reason we do things at cluster level is because we do not know each individual's neighborhood and our hypothesis is that socializing interaction in the neighborhood matters for social attitudes. We have information at the cluster which is likely to be too large to be considered an individual's 'surrounding' neighborhood by whose average interaction the individual is affected by. We used the sample over larger locations (such as MSAs) to create cluster level values. So, if  $k$  is a neighborhood in the larger location  $L$ , then the usable information that we have are  $E(\tau | L)$  and  $E(z | L)$ , not  $E(\tau | \rho)$  and  $E(z | \rho)$ . So, the regression that we *can* run is that of average social attitudes across clusters. Taking expectations on both sides of (1) with respect to  $L$  gives us,

$$(4) \quad E(\tau | L) = \beta_0 + \beta_1 E(\tau | L) + E(z | L)' \beta_2 + E(z | L)' \beta_3 + E(x | L)' \beta_4 + \rho' \delta.$$

The assumption in (4) is that  $E(\cdot | L)$  is the best possible proxy for  $E(\cdot | \rho)$ . Rearranging, we obtain,

$$(5) \quad E(\tau | L) = \frac{\beta_0}{1 - \beta_1} + E(z | L)' \frac{\beta_2 + \beta_3}{1 - \beta_1} + E(x | L)' \frac{\beta_4}{1 - \beta_1} + \rho' \frac{\delta}{1 - \beta_1},$$

which indicates a regression of average social attitude on average population characteristics, average socializing interaction and cluster characteristics. However, since  $\beta_1$  is identified in this regression neither is  $\beta_4 / (1 - \beta_1)$ . We simply estimate  $\beta_4 / (1 - \beta_1)$  and do not try to disentangle  $\beta_1$  and  $\beta_4$ .

### III. Data and Summary Statistics

We use data from four sources to study the relationship between social attitudes and socializing behaviors at various geographical clusters throughout the U.S. First, we use the information from the General Social Survey (GSS) 1972-2004 for information regarding social attitudes (attitude towards sexuality, euthanasia, abortion, and tolerance towards marginalized groups) and socializing behaviors (organization memberships, socializing with friend/neighbors, and socializing with relatives). The GSS provides information on socializing behaviors in the geographical clusters only until 1994. For economic information about the clusters we use annual

data from the Bureau of Economic Analysis (BEA). The demographic information (like population density, age profile, etc.) about the clusters comes from the U.S. Census. Information about natural amenities of the locations is obtained from Health Resources and Services Administration.<sup>1</sup>

The GSS (1972-2004) is a repeated cross-section survey conducted annually between 1972 and 1994 (with the exception of 1979, 1981, and 1992), and biennially then onwards. The survey asks individual respondents questions on their social attitudes (Table 1) and identifies either the metropolitan statistical area (MSA) or the county that the individual is residing at the time of the survey. Based on this information from the GSS, we assign each individual to either a county (when the county information is available) or an MSA,<sup>2</sup> and label it as a geographical cluster. We further create four time blocks since for each year that the data was collected the number of respondents was small in many clusters. The reason we have 4 years in a block is because the attitude variables were available the first time in 1973 for four consecutive years. After that it was discontinued for six years before it started again for every survey until 1994. We therefore club the first four years together and for the later periods created 4-year time-blocks. The time blocks are given in Table 1.

From the responses of the individuals in the clusters for each time block, we obtain the cluster level social attitude by a simple average of the responses of all the surveyed individuals. We omit those clusters from the data where the number of respondents was less than 30 to ensure that the data is fairly representative of the population. Information about socializing behaviors is also obtained from the GSS and the same procedure has been used to arrive at the cluster level information.

The GSS survey asks question on several issues that relate to the social attitude of the individuals. These questions include attitudes towards some of the hot-button social issues (namely, euthanasia, homosexuality and abortion), and tolerance towards marginalized groups (namely, anti-religionists, racists, communists, militarists, and homosexuals). Table 2 presents the summary of observations on the different social attitudes. These issues are not necessarily mutually exclusive. For example, consider the attitude towards homosexuals. Those who believe same sex is not wrong are also likely to be tolerant towards homosexuals being allowed to teach

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<sup>1</sup> For detailed information see <http://www.arfsys.com>.

<sup>2</sup> The MSA information we use is that of 2005.

in colleges. At the same time, the implications of the two choices could differ across individuals. Thus, those who attach greatest importance to education could choose to accept homosexuals as teachers even though they do not think same sex is acceptable. Hence, there is value in considering the different social attitudes separately. In the survey, only 14 percent of the respondents feel that same sex is not wrong at all while a much larger 62 percent of the respondents feel that homosexuals should be allowed to teach at college/university.

The questions on social attitudes in some cases are on a wider scale and not necessarily involve binary options. For example, the respondents were given the option whether they agree strongly, agree somewhat, and so on in some cases. We convert all the questions on social attitudes into a binary scale, i.e., whether or not the respondent agrees with a particular question or not. For example, a respondent who agrees strongly or agrees somewhat is treated to be a respondent who agrees. Table 2 presents the summary statistics for the different social attitude variables in the data. For each of the questions, if the respondent agrees with it, we call it a libertarian attitude because it conforms to the basic principle of libertarianism. Thus, as the value of the social attitude variables move from zero to unity, we call it a move towards more libertarian attitude.

Different types of socializing interactions, information about the cluster characteristics (economics information, population density, etc.), their demographic profiles (population heterogeneity in terms of race and age groups), time dummies, and 9 regional indicators, and natural amenities of the location are included as the right-hand-side variables. Table 3 presents a summary of these variables. For these variables also, we used yearly data and then averaged them over each time-block.

We consider three socializing interaction variables. The variable *non-religious organization membership* is the proportion of respondents in the sample who are a member of at least one non-religious organization. The non-religious organizational membership variable includes memberships in a diverse set of organizations, viz., fraternal groups, sports, arts, hobby and political clubs, labor unions, farm organizations and professional society. There is also a residual category i.e. membership in any other organization. The other two socializing

interaction variables are frequency (days per week) of meeting with friends/neighbors and frequency (days per week) of meeting with relatives.<sup>3</sup>

As Figure 1 shows, all the social attitude measures such as attitudes towards euthanasia, abortion, homosexuality, etc., seem to have strong positive correlations of varying degree with socializing interaction in non-religious organizations. While socializing with friends and neighbors do not exhibit any obvious correlation (Figure 2) in most cases, socializing with relatives seems to be negatively relatively correlated with the social attitude variables (Figure 3).

Another variable of interest is the proportion of population that is associated with churches in the community. We use this variable to measure religiosity of the cluster. Figure 4 shows that the social attitude measures are strongly negatively correlated with religiosity.

The top 5 clusters that have the most libertarian social attitude towards abortion are the clusters on the coasts, viz. Washington, DC, El Dorado - Alpine, CA, Boston, MA, Los Angeles-Long Beach, CA and San Francisco - Oakland - San Jose, CA. The clusters that have the least libertarian attitude towards abortion are Vernon Parish, LA, Crenshaw, AL, Phillips, KS, Hale County, TX and Jackson, MS. In the top five clusters with agreeable attitude towards abortion, the membership in non-religious organization is substantially higher than the clusters with least agreeable attitude. For example, in San Francisco-Oakland, 76 percent of the respondents are members of non-religious organization, the highest in the sample and the cluster also has the most respondents who feel abortion for any reason should be allowed (67 percent). The cluster has merely 20 percent of the respondents who are members of a church.

In the clusters with least favorable attitude towards abortion, the highest membership in non-religious organizations occurs in Phillips, KS, where a very high percentage (66 percent) of respondents are members of non-religious organization but only 8 percent of the total respondents agree that abortion for any reason is acceptable. Interestingly, the same cluster also has a very high rate of church membership (52 percent). This reinforces our belief that an assessment of the role of non-religious socializing interactions cannot be done independent of religious interactions but conditional on it.

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<sup>3</sup> The original variables in GSS take values from {0,1, . . .,6} where, 6 = almost daily, 5 = several times a week, 4 = several times a month, 3 = once a month, 2 = several times a year, 1 = once a year, 0=never. In this paper these variables have been converted to 'number of meetings a year' with the following assumptions: 6 = 365 times a year, 5 = 156 times a year (i.e. 3 times a week), 4 = 60 times a year (5 times a month), 3 = 12 times a year, 2 = 6 times a year, 1 = once a year, 0 = never. Experiments with different assumptions such as 6 = 312 times a year (i.e. 6 times a week), 5 = 104 times a year (i.e. 2 times a week) and so on do not change the results in any significant way.

#### IV. Empirical Methodology

We aim to establish causal effects of socializing interaction variables on the social attitude variables. We estimate these effects with a single equation linear GMM for each of the attitude measures. Our identification strategy involves using valid instruments that are constructed using higher order moments of the endogenous socializing interaction variables.

Consider the model,

$$(2) \quad SA_i^r = \mathbf{X}_i \beta^r + u_i,$$

where,  $SA_i^r$  denotes the average of the  $r$ -th social attitude in cluster  $i$ , and  $u_i$  is the error term. The matrix  $\mathbf{X}_i$  includes three types of variables: (a) socializing interactions variables – the level of interaction in non-religious organization measured as the proportion of population in cluster  $i$  with membership in at least one non-religious organization ( $NR_i$ ), and the average number of days spent interacting with friends<sup>4</sup> and relatives (denoted by  $FR_i$  and  $REL_i$ , respectively), (b) religiosity – the average membership of the church in cluster  $i$  ( $CH_i$ ), and (c) other cluster level ‘control’ variables.

Socializing interaction variables  $NR_i$ ,  $FR_i$  and  $REL_i$  are endogenous. We used higher order moments of each of these variables as instruments (Lewbel, 1997). Let  $Z_i$  denote these instruments such that  $E(Z_i u_i) = 0$ . Then, a GMM estimator for  $\beta^r$  is  $\hat{\beta}_{GMM}^r$  where,

$$(3) \quad \hat{\beta}_{GMM}^r = \arg \min_{\hat{\beta}^r} N \cdot g(\hat{\beta}^r)' W g(\hat{\beta}^r),$$

where,  $g(\hat{\beta}^r) = \frac{1}{N} \sum_1^N Z_i' (y_i - \mathbf{X}_i \hat{\beta}^r)$ , and  $W$  is the optimal weighting matrix.

The primary reason why the socializing interaction variables could be endogenous is sorting: Individuals may choose locations based on the average social attitudes of the location itself, and, even within a location, individuals may also sort into different social groups based on their own social attitudes. Unable to find valid instruments outside the model, we relied on Lewbel’s (1997) method where the characteristics of the data are exploited to obtain instruments. We used the third and fifth centered moments of each of the socializing interaction variables as

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<sup>4</sup> It includes neighbors who are friends.

instruments (Lewbel, 1997).<sup>5</sup> Weak instrument tests and overidentification tests are reported in Tables 4 through 9 for each regression.

Our cluster level control variables include, first, demographic (population density, race composition and age profile) and economic characteristics (per capita income and job availability and economic structure with proportion of farm jobs). Secondly, to account for generalized (across clusters) time varying effects, we include time dummies for the four time blocks created. Thirdly, to control for region specificities, we include nine regional dummies (with New England as the omitted category) and two natural amenities variables (a natural amenities summary score and average January temperature). Thus, we control for several observed cluster level characteristics that could be correlated with socializing interactions as well as formation of social attitudes.

The coefficients of the socializing interaction variables could be biased as the framework cannot control for unobserved characteristics of the clusters. If some of these unobserved characteristics are such that they affect social attitudes as well as the level and type of socializing interactions then their coefficients could be capturing the effect of these omitted variables. Since we control for regional fixed effects, the omitted variable bias will be of concern to us only when it is cluster specific. Cluster independent time varying fixed effects are also included in the specification in the form of time dummies.

A fixed effect estimation with cluster and time fixed effects would be able to control for potential cluster-specific time invariant unobservables. We do have data on social attitudes and socializing interactions of the clusters over time, but it is limited and does not allow for a sufficiently large panel to allow for fixed effects estimation. There are only 50 clusters that have repeated observations over time. Additionally, and more importantly, the dataset does not show significant variation over time: in case of all the social attitudes in the sample, the within cluster variations over time are substantially lower than the across cluster variations. This is not surprising since social attitudes within a cluster change slowly owing to migration and substantial structural changes. In this dataset, we observe social attitudes of a cluster for at most a 20 year window (1973 to 1994). To observe variation over time within the same cluster will require information sufficiently apart in time. Thus, instead of using the small sample with much lower variation over time, the approach we take is to exploit the cross-cluster variations by using

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<sup>5</sup> See Millimet and Osang (2005) as an application of this approach.

a pooled cross-section over time but including an extensive set of time-varying control variables to limit the omitted variable biases.

## V. Results

In the Tables 4 through 9 we report the single equation GMM estimates of the effects of different types of socializing interactions on different social attitude measures. In Table 4, the social attitudes are the hot button social issues: euthanasia, same-sex marriage and abortion. In Tables 5 through 9, we report regressions of attitudes towards marginalized groups anti-religionists, racists, communists, militarists, communists, and homosexuals, respectively. The tables also report overidentification test and weak instrument test results. The instruments pass the overidentification test in all but two regressions and the weak instrument test in all eighteen regressions.

We are interested in the impact of socializing interactions on the formation of the social attitudes. The results indicate two main points. First, socializing interactions within the clusters do have a significant effect on the social attitudes of the clusters. Glaeser and Ward (2006) while discussing the political geography in the United States argue that people in different states have been exposed to quite similar evidence through national media outlets but they have reached radically different conclusions about the hot-button social issues and continue to hold these conclusions despite being aware that others disagree. Glaeser and Ward (2006) allude to (as possibly explaining these differences across space) is the one where people base their opinions mostly on the views of those around them (the socializing interaction at the cluster level in our case). In this sense, the evidence that several social attitudes are significantly determined by the socializing interactions supports the Glaeser and Ward (2006) conjecture. Social psychologists have long identified socializing interactions as a strong determinant of the attitudes that people carry (Blumer 1936, Lottes and Kuriloff 1994 and Eugene and Friedkin 2006). Our results help establish this point by showing that socializing interactions do have a significant impact on social attitudes.

Second, across a wide array of social attitudes, we observe a discernable pattern. We find a clear distinction in the direction of the impact across the categories of socializing interactions. In seventeen out of eighteen cases, the coefficient of interactions in the form of non-religious organizations is strongly positively significant (i.e., a strong pro-libertarian impact). Interactions

with friends and neighbors have somewhat smaller but significant positive coefficients in only a few regressions (positive significant in four and negative significant in one). Coefficient of interactions with relatives is significant in almost half the regressions, but whether it is significant or not, it is negative in all the regressions. That the effects vary across the categories of socializing interactions are a novel finding although its roots are embedded again in the domain of social psychology. As discussed above, socializing interactions are differentiated in terms of the exposure to views and interacting parties that they offer. The effects follow from the logic of the contact hypothesis in the social psychology literature. All those interactions where the individual is exposed to different social attitudes, the effect of such interactions is likely to lead towards more libertarian attitudes.

## **VI. Conclusions**

In this paper, we explore the effects of socializing interactions on the formation of social attitudes among American communities. Exploiting variations across geographical clusters we find that socializing interactions do have a significant impact on the formation of social attitudes. More importantly, the nature of the effect of socializing interactions on social attitudes varies across the types of interactions considered. Broadly, interactions in non-religious organizations lead to more libertarian attitudes and interactions within family and relative lead to less libertarian attitudes.

We interpret this difference across the types of socializing interactions in terms of the contact space that they offer which affect attitude formation. Drawing upon the concept from social psychology literature, contact with individuals and exposure to opinions and ideas that are more accommodating about certain issues (like homosexuality) can result in a movement towards more libertarian attitudes. The broadening types of socializing interactions in non-religious organizations provide such a contact space.

Economists have increasingly acknowledged the importance of social attitudes in determining outcomes. This paper provides the first rigorous analysis for the determination of social attitudes. Socializing interactions are individual choices and thereby are not directly policy driven. However, creating opportunities for certain types of socializing interactions to occur is indeed a policy variable. In several developing countries, certain interactions that could lead to more libertarian attitudes are infeasible (for example owing to limited number of recreation



clubs). In such a scenario, policies that create such opportunities could have multi-dimensional impacts. The dominance of religious interactions in several developing countries could lead to certain attitudes that could be inhibiting for example from a gender perspective (like female education). The social value of creating opportunities for types of socializing interactions in those contexts cannot be understated.

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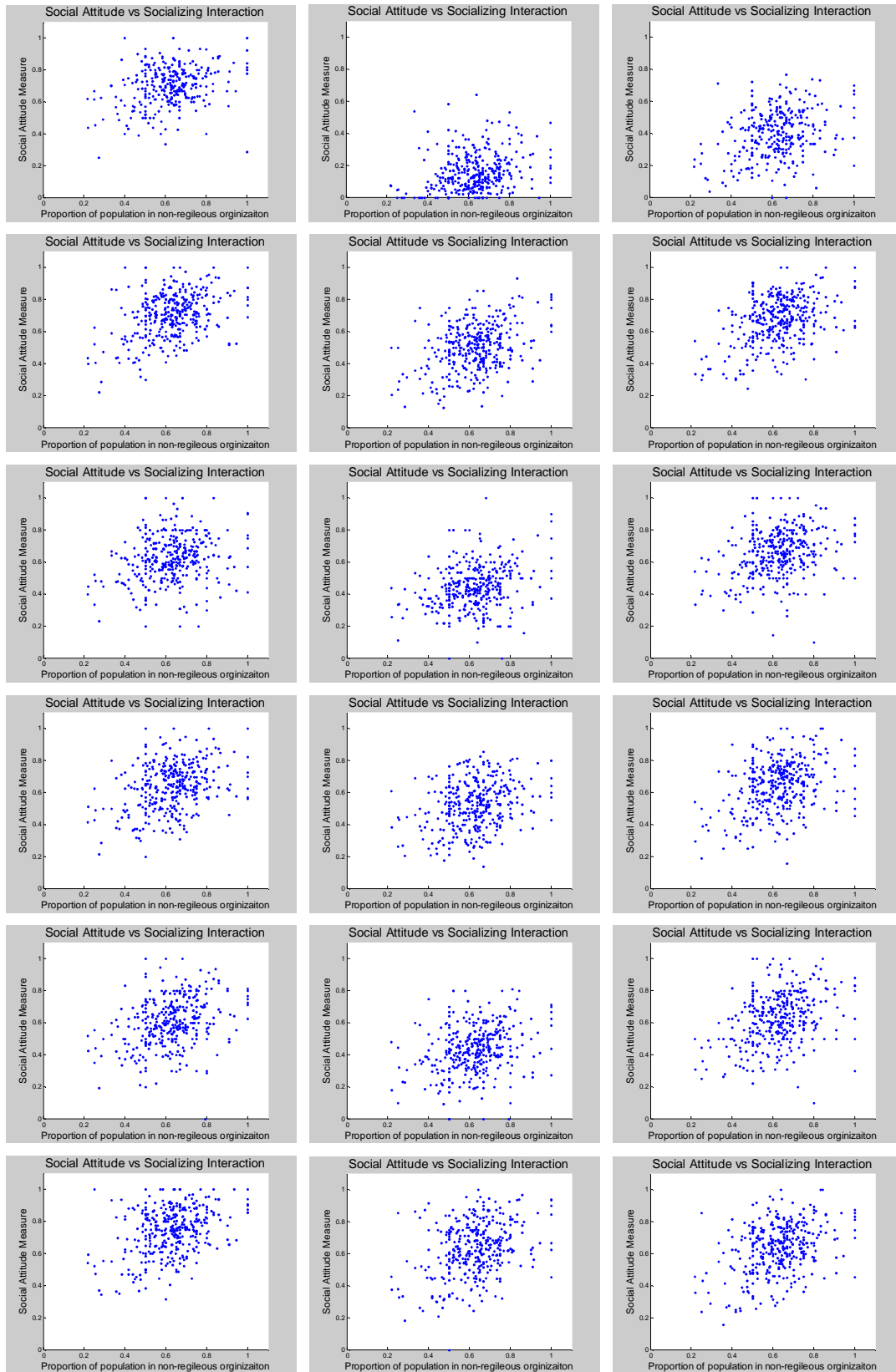


Figure 1: Scatter Plots of Social Attitudes against Proportion of Population Who are Members of Non-religious Organizations

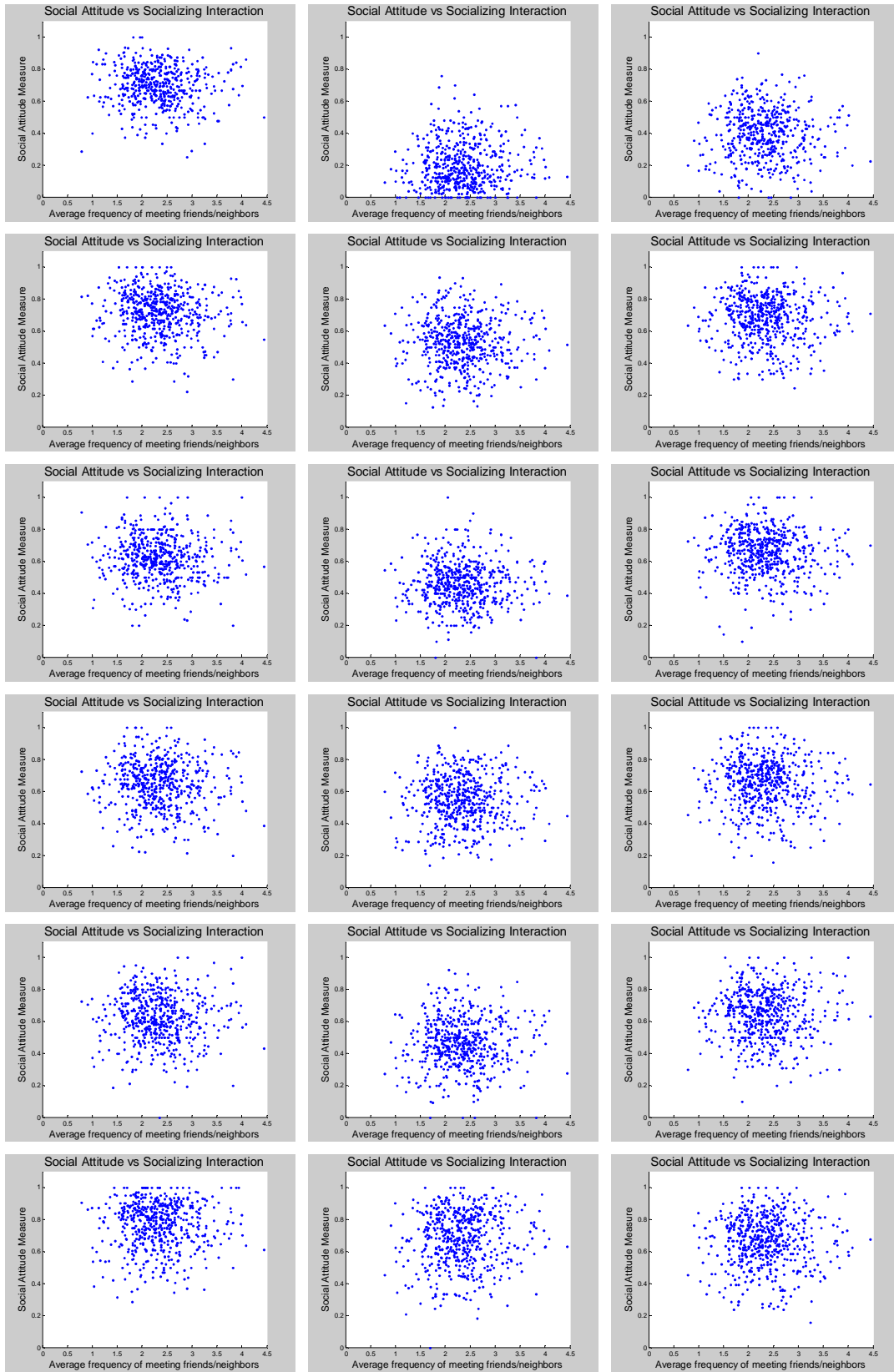


Figure 2: Scatter Plots of Social Attitudes against Frequency of Meeting Friends and Neighbors

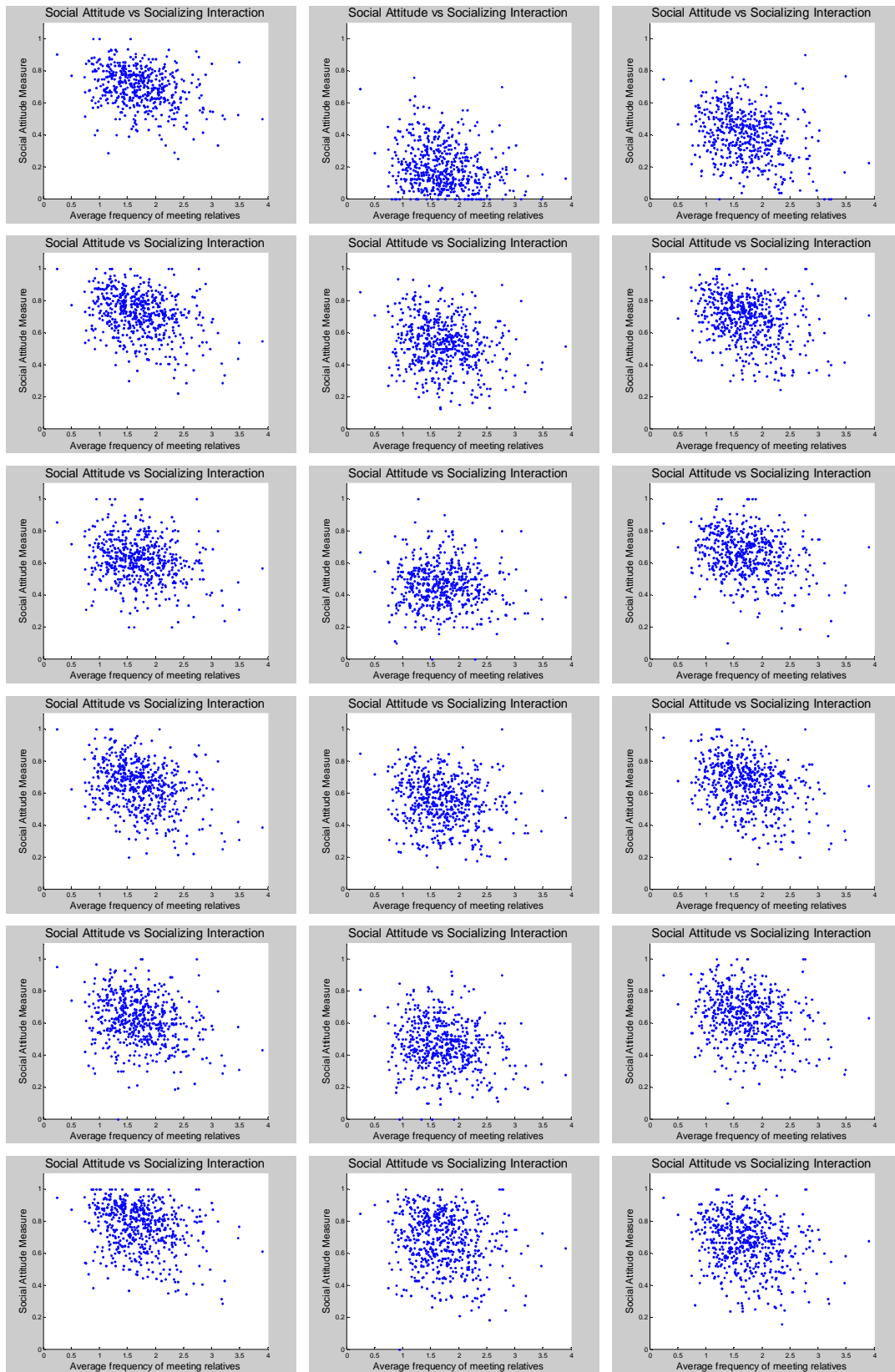


Figure 3: Scatter Plots of Social Attitudes against Frequency of Meeting Relatives

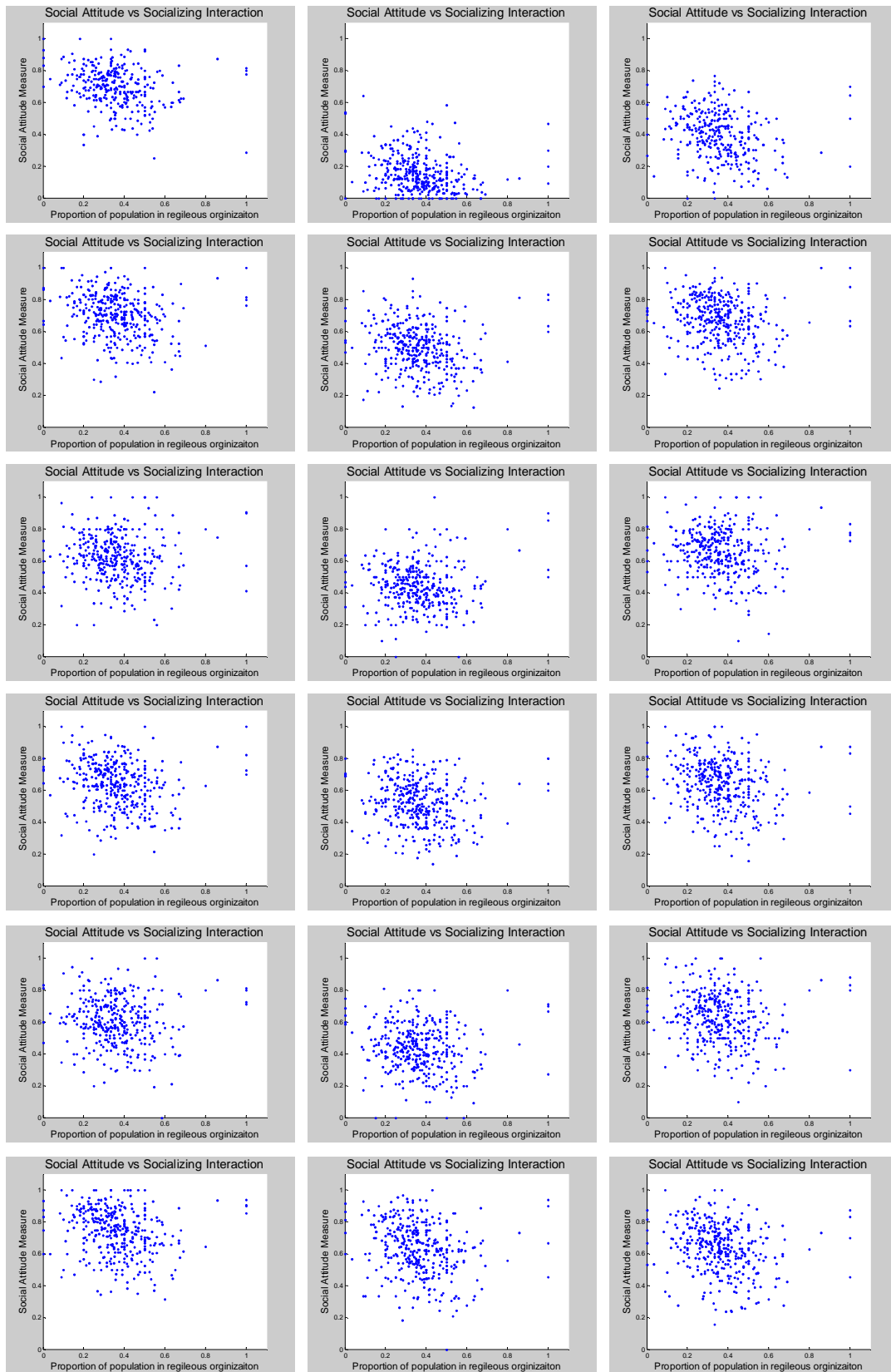


Figure 4: Scatter Plots of Social Attitudes against Proportion of Population who are Members of Religious Organizations



## Tables

**Table 1: Time blocks in the data**

Time-block	1	2	3	4
Years	1973, 1974, 1975, 1976	1983, 1984, 1985, 1986	1987, 1988, 1989, 1990	1991, (survey not conducted in 1992), 1993, 1994

**Table 2: The Social Attitude Variables (Dependent Variables)**

	N	Mean	Std.	Min	Max
<u>Hot button social issues</u>					
Allowing incurable patients to die	173	0.68	0.11	0.40	0.89
Same sex not wrong at all	219	0.14	0.10	0.00	0.48
Abortion not wrong if the woman wants it for any reason	173	0.39	0.14	0.04	0.74
<u>Tolerance towards anti-religionists</u>					
Allow anti-religionists to speak	219	0.70	0.13	0.29	0.97
Allow anti-religionists to teach at college/university	219	0.49	0.14	0.13	0.77
Allow anti-religionist books in library	219	0.66	0.15	0.24	0.91
<u>Tolerance towards racists</u>					
Allow racists to speak	218	0.63	0.13	0.20	1.00
Allow racists to teach at college/ university	218	0.45	0.13	0.00	1.00
Allow racist books in library	218	0.65	0.15	0.10	1.00
<u>Tolerance towards communists</u>					
Allow communists to speak	219	0.64	0.13	0.29	0.95
Allow communists to teach at college/ university	219	0.51	0.14	0.14	0.81
Allow communist books in library	219	0.63	0.15	0.25	0.95
<u>Tolerance towards militarists</u>					
Allow militarists to speak	218	0.60	0.15	0.00	1.00
Allow militarists to teach at college/ university	218	0.43	0.14	0.00	0.80
Allow militarist books in library	218	0.62	0.15	0.10	1.00
<u>Tolerance towards homosexuals</u>					
Allow homosexuals to speak	219	0.73	0.13	0.32	0.97
Allow homosexuals to teach at college/ university	219	0.62	0.16	0.18	0.97
Allow homosexual books in library	219	0.62	0.15	0.24	0.94

Note: Each case is asks for a binary response {1= agree with the statement, 0= do not agree with the statement}. After aggregating over the sample for each cluster we arrive at the cluster level that simply represents the proportion of population in the cluster who agree with the statement.

**Table 3: Right-hand-side Variables**

	<b>N</b>	<b>Mean</b>	<b>Std.</b>	<b>Min</b>	<b>Max</b>
<b>Socializing interaction variables</b>					
Number of non-religious organization memberships	219	0.62	0.12	0.22	0.91
Number of days/week visits friends/ neighbors	219	2.36	0.51	1.15	4.00
Number of days/week visits relatives	219	1.72	0.44	0.73	3.17
<b>Religiosity</b>					
Proportion of population members of churches	219	0.37	0.12	0.10	0.80
<b>Economic and demographic variables</b>					
Density of population (1000 per sq miles)	219	0.62	1.12	0.00	7.96
Per capita personal income (\$10,000)	219	2.29	0.52	0.96	3.83
Number of per capita jobs	219	0.44	0.10	0.19	0.72
Proportion of farms jobs	219	0.04	0.06	0.00	0.37
Homeownership rates	218	0.69	0.09	0.37	0.85
Proportion of whites	219	0.82	0.14	0.27	1.00
Proportion of blacks	219	0.12	0.11	0.00	0.56
Proportion of population 0 to 19 years of age	219	0.31	0.04	0.19	0.46
Proportion of population 20 to 34 years of age	219	0.25	0.04	0.12	0.41
Proportion of population 35 to 49 years of age	219	0.19	0.03	0.12	0.25
Proportion of population 50 to 64 years of age	219	0.14	0.02	0.06	0.21
Proportion of population 65 years and above	219	0.12	0.04	0.06	0.31
<b>Time blocks (dummies)</b>					
Time block: 1973-1976	219	0.21	0.41	0.00	1.00
Time block: 1983-1986	219	0.26	0.44	0.00	1.00
Time block: 1987-1990	219	0.37	0.48	0.00	1.00
Time block: 1991-1994	219	0.17	0.38	0.00	1.00
<b>Regional dummies and local amenities etc.</b>					
New England	219	0.05	0.23	0.00	1.00
Mid Atlantic	219	0.11	0.31	0.00	1.00
East North Central	219	0.18	0.38	0.00	1.00
West North Central	219	0.11	0.31	0.00	1.00
South Atlantic	219	0.19	0.39	0.00	1.00
East South Central	219	0.08	0.27	0.00	1.00
West South Central	219	0.11	0.31	0.00	1.00
Mountain	219	0.05	0.22	0.00	1.00
Pacific	219	0.12	0.33	0.00	1.00
January temperature z-score	219	0.23	1.07	-2.37	2.77
Natural amenities score	219	0.78	3.05	-5.18	10.33

**Table 4: GMM Estimates of the Effects of Socializing Interactions on Attitudes towards Euthanasia, Abortion, and Same Sex**

Variable label	Allowing incurable patients to die		Same sex not wrong		Support abortion for any reason	
	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>
Proportion of population non-religious org members	0.203	<b>0.014</b>	0.153	<b>0.005</b>	0.396	<b>0.000</b>
Number of days/week visits friends and neighbors	0.051	<b>0.000</b>	0.018	<b>0.097</b>	-0.004	0.818
Number of days/week visits relatives	-0.041	<b>0.066</b>	-0.036	<b>0.015</b>	-0.040	<b>0.040</b>
Proportion of population members of churches	-0.100	0.132	-0.142	<b>0.010</b>	-0.190	<b>0.020</b>
Proportion of whites	0.052	0.395	-0.275	0.001	-0.238	0.000
Proportion of blacks	-0.041	0.692	-0.160	0.074	-0.159	0.053
Proportion of population 20 to 34 years of age	0.209	0.690	0.502	0.288	0.637	0.284
Proportion of population 35 to 49 years of age	-0.365	0.583	0.904	0.062	2.885	0.000
Proportion of population 50 to 64 years of age	1.628	0.192	-0.366	0.572	-1.108	0.336
Proportion of population 65 years and above	-0.380	0.561	0.346	0.421	0.948	0.103
Density of population (1000 per sq miles)	-0.006	0.226	-0.007	0.172	0.001	0.887
Per capita personal income (\$10,000)	0.067	0.085	0.001	0.964	0.055	0.046
Number of per capital jobs	-0.145	0.250	0.061	0.485	-0.292	0.021
Proportion of farms jobs	-0.303	0.102	0.098	0.325	-0.253	0.042
Proportion of population owner occupiers	-0.048	0.582	-0.074	0.251	-0.236	0.004
Time cluster: 1983-1986 (dummy)	-0.073	0.109	-0.060	0.025	0.088	0.026
Time cluster: 1987-1990 (dummy)	-0.017	0.550	-0.098	0.001	0.049	0.037
Time cluster: 1991-1994 (dummy)	---	---	-0.059	0.139	---	---
Mid Atlantic (dummy)	-0.050	0.023	0.022	0.487	-0.008	0.856
East North Central (dummy)	-0.026	0.314	-0.022	0.506	-0.020	0.674
West North Central (dummy)	-0.049	0.106	-0.042	0.243	-0.036	0.455
South Atlantic (dummy)	-0.006	0.801	-0.054	0.146	0.007	0.878
East South Central (dummy)	-0.020	0.617	-0.076	0.056	-0.036	0.503
West South Central (dummy)	-0.025	0.424	-0.103	0.005	-0.038	0.439
Mountain (dummy)	0.037	0.263	-0.046	0.238	-0.065	0.204
Pacific (dummy)	-0.009	0.872	-0.058	0.208	-0.054	0.296
January temperature z-score	-0.008	0.478	-0.010	0.390	-0.010	0.328
Natural amenities score	0.003	0.621	0.005	0.358	0.006	0.228
Constant	0.364	0.178	0.205	0.379	-0.045	0.863
Number of observations	146		215		182	
Underidentification test (Kleibergen-Paap rk LM statistic), Chi-sq(4)	29.7560	0.0000	28.7680	0.0000	28.7200	0.0000
Hansen J statistic (overidentification test of all instruments), Chi-sq(3)	2.8930	0.4084	5.0700	0.1668	1.8750	0.5987
Weak identification test (Kleibergen-Paap rk Wald F statistic)	23.1630		43.8460		25.2280	

**Table 5: GMM Estimates of the Effects of Socializing Interactions on Attitudes towards Anti-religionists**

Variable label	Allow anti-religionists to speak		Allow anti-religionists to teach at college/univ		Allow anti-religionist books in library	
	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>
Proportion of population non-religious org members	0.400	<b>0.000</b>	0.345	<b>0.000</b>	0.424	<b>0.000</b>
Number of days/week visits friends and neighbors	-0.007	0.525	0.020	0.113	0.007	0.616
Number of days/week visits relatives	-0.012	0.443	-0.025	0.219	-0.038	<b>0.041</b>
Proportion of population members of churches	-0.289	<b>0.000</b>	-0.279	<b>0.000</b>	-0.265	<b>0.001</b>
Proportion of whites	0.111	0.271	0.065	0.528	0.247	0.071
Proportion of blacks	0.090	0.370	0.080	0.452	0.203	0.157
Proportion of population 20 to 34 years of age	-0.592	0.259	-0.606	0.251	-1.238	0.076
Proportion of population 35 to 49 years of age	-1.131	0.102	-0.320	0.677	-0.210	0.766
Proportion of population 50 to 64 years of age	-0.679	0.477	-1.722	0.060	-1.511	0.193
Proportion of population 65 years and above	-0.775	0.101	-0.496	0.400	-0.924	0.149
Density of population (1000 per sq miles)	-0.006	0.279	-0.006	0.265	0.001	0.837
Per capita personal income (\$10,000)	0.079	0.018	0.075	0.017	0.054	0.046
Number of per capital jobs	-0.018	0.893	-0.084	0.568	0.146	0.398
Proportion of farms jobs	-0.249	0.045	-0.315	0.066	-0.205	0.252
Proportion of population owner occupiers	0.169	0.100	0.060	0.484	0.041	0.725
Time cluster: 1983-1986 (dummy)	0.008	0.819	-0.009	0.817	0.002	0.962
Time cluster: 1987-1990 (dummy)	0.041	0.321	-0.007	0.882	0.009	0.854
Time cluster: 1991-1994 (dummy)	0.091	0.113	0.029	0.680	0.045	0.539
Mid Atlantic (dummy)	0.026	0.432	0.001	0.983	0.055	0.165
East North Central (dummy)	-0.001	0.964	-0.030	0.449	0.035	0.260
West North Central (dummy)	-0.048	0.044	-0.074	0.034	0.022	0.481
South Atlantic (dummy)	0.000	0.990	-0.042	0.309	-0.018	0.676
East South Central (dummy)	-0.047	0.259	-0.081	0.077	-0.026	0.614
West South Central (dummy)	-0.031	0.371	-0.065	0.109	-0.064	0.150
Mountain (dummy)	0.028	0.566	0.022	0.657	0.003	0.953
Pacific (dummy)	0.103	0.013	0.000	0.995	-0.002	0.969
January temperature z-score	-0.010	0.467	-0.013	0.381	-0.008	0.668
Natural amenities score	-0.005	0.362	-0.001	0.867	0.010	0.117
Constant	0.731	0.011	0.693	0.006	0.752	0.029
Number of observations	218		213		216	
Underidentification test (Kleibergen-Paap rk LM statistic), Chi-sq(4)	29.3110	0.0000	28.2190	0.0000	28.9510	0.0000
Hansen J statistic (overidentification test of all instruments), Chi-sq(3)	<b>10.1280</b>	<b>0.0175</b>	5.9610	0.1135	5.1150	0.1636
Weak identification test (Kleibergen-Paap rk Wald F statistic)	42.8880		42.5890		43.9710	

**Table 6: GMM Estimates of the Effects of Socializing Interactions on Attitudes towards Racists**

Variable label	Allow racists to speak		Allow racists to teach at college/univ		Allow racist books in library	
	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>
Proportion of population non-religious org members	0.136	<b>0.053</b>	0.168	<b>0.023</b>	0.262	<b>0.002</b>
Number of days/week visits friends and neighbors	-0.003	0.833	0.008	0.524	-0.016	0.242
Number of days/week visits relatives	0.014	0.414	0.022	0.235	-0.016	0.359
Proportion of population members of churches	-0.217	<b>0.011</b>	-0.124	0.123	-0.067	0.389
Proportion of whites	-0.031	0.634	-0.090	0.188	0.144	0.043
Proportion of blacks	0.024	0.776	-0.043	0.580	0.098	0.374
Proportion of population 20 to 34 years of age	0.535	0.182	0.799	0.041	0.221	0.708
Proportion of population 35 to 49 years of age	-0.023	0.974	-0.520	0.402	1.361	0.035
Proportion of population 50 to 64 years of age	0.602	0.354	1.139	0.226	-0.955	0.313
Proportion of population 65 years and above	0.251	0.576	0.462	0.402	0.565	0.307
Density of population (1000 per sq miles)	-0.011	0.013	-0.018	0.001	0.010	0.084
Per capita personal income (\$10,000)	0.021	0.380	0.038	0.184	-0.008	0.764
Number of per capital jobs	0.143	0.292	0.052	0.679	0.182	0.157
Proportion of farms jobs	0.026	0.826	-0.161	0.178	0.217	0.171
Proportion of population owner occupiers	0.155	0.019	0.148	0.035	0.017	0.836
Time cluster: 1983-1986 (dummy)	-0.079	0.027	-0.050	0.163	-0.009	0.826
Time cluster: 1987-1990 (dummy)	-0.039	0.101	-0.021	0.350	-0.008	0.731
Time cluster: 1991-1994 (dummy)	---	---	---	---	---	---
Mid Atlantic (dummy)	0.021	0.516	0.012	0.547	-0.023	0.371
East North Central (dummy)	0.002	0.937	-0.013	0.576	-0.021	0.355
West North Central (dummy)	-0.020	0.540	-0.039	0.101	-0.039	0.208
South Atlantic (dummy)	0.028	0.514	-0.019	0.610	-0.071	0.057
East South Central (dummy)	-0.050	0.295	-0.049	0.204	-0.108	0.020
West South Central (dummy)	-0.018	0.643	0.014	0.706	-0.061	0.102
Mountain (dummy)	0.085	0.023	0.045	0.100	-0.016	0.647
Pacific (dummy)	0.143	0.001	0.055	0.170	-0.002	0.956
January temperature z-score	-0.021	0.088	-0.031	0.015	-0.005	0.728
Natural amenities score	-0.006	0.179	0.001	0.835	0.004	0.374
Constant	0.184	0.379	-0.068	0.758	0.135	0.629
Number of observations	171		169		171	
Underidentification test (Kleibergen-Paap rk LM statistic), Chi-sq(4)	27.4530	0.0000	27.9680	0.0000	27.5840	0.0000
Hansen J statistic (overidentification test of all instruments), Chi-sq(3)	3.8270	0.2807	1.6530	0.6474	2.2050	0.5310
Weak identification test (Kleibergen-Paap rk Wald F statistic)	23.3970		22.9260		23.4280	

**Table 7: GMM Estimates of the Effects of Socializing Interactions on Attitudes towards Communists**

Variable label	Allow communists to speak		Allow communists to teach at college/univ		Allow communist books in library	
	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>
Proportion of population non-religious org members	0.229	<b>0.002</b>	0.107	0.137	0.334	<b>0.000</b>
Number of days/week visits friends and neighbors	0.003	0.829	0.001	0.937	-0.009	0.508
Number of days/week visits relatives	-0.024	0.157	-0.034	0.122	-0.038	<b>0.033</b>
Proportion of population members of churches	-0.182	<b>0.016</b>	-0.100	0.194	-0.262	<b>0.002</b>
Proportion of whites	-0.006	0.945	0.052	0.560	0.175	0.073
Proportion of blacks	0.071	0.390	0.106	0.318	0.104	0.324
Proportion of population 20 to 34 years of age	0.102	0.841	-0.015	0.982	-0.752	0.162
Proportion of population 35 to 49 years of age	0.851	0.319	1.266	0.146	-0.085	0.909
Proportion of population 50 to 64 years of age	-2.611	0.007	-2.719	0.011	-1.502	0.219
Proportion of population 65 years and above	0.831	0.157	0.753	0.244	-0.548	0.386
Density of population (1000 per sq miles)	-0.013	0.014	-0.007	0.273	-0.001	0.892
Per capita personal income (\$10,000)	0.058	0.029	0.022	0.464	0.043	0.112
Number of per capital jobs	0.041	0.764	0.168	0.294	0.163	0.243
Proportion of farms jobs	-0.211	0.203	-0.133	0.472	-0.152	0.384
Proportion of population owner occupiers	0.057	0.530	0.076	0.452	0.047	0.605
Time cluster: 1983-1986 (dummy)	-0.119	0.001	-0.080	0.058	-0.037	0.376
Time cluster: 1987-1990 (dummy)	-0.150	0.002	-0.102	0.069	-0.046	0.390
Time cluster: 1991-1994 (dummy)	-0.094	0.186	-0.034	0.672	0.028	0.717
Mid Atlantic (dummy)	0.026	0.462	0.040	0.382	0.057	0.162
East North Central (dummy)	-0.025	0.356	-0.032	0.453	0.026	0.441
West North Central (dummy)	-0.080	0.013	-0.078	0.084	-0.005	0.894
South Atlantic (dummy)	-0.080	0.031	-0.085	0.076	-0.015	0.711
East South Central (dummy)	-0.107	0.007	-0.114	0.032	-0.048	0.297
West South Central (dummy)	-0.090	0.008	-0.075	0.115	-0.050	0.216
Mountain (dummy)	-0.038	0.313	-0.039	0.485	-0.019	0.726
Pacific (dummy)	0.023	0.587	-0.014	0.823	0.035	0.507
January temperature z-score	-0.015	0.261	-0.019	0.211	-0.011	0.482
Natural amenities score	-0.003	0.520	0.000	0.960	0.003	0.626
Constant	0.641	0.014	0.474	0.110	0.750	0.006
Number of observations	215		209		214	
Underidentification test (Kleibergen-Paap rk LM statistic), Chi-sq(4)	28.8170	0.0000	27.2320	0.0000	28.3960	0.0000
Hansen J statistic (overidentification test of all instruments), Chi-sq(3)	1.9490	0.5831	0.8600	0.8351	3.6510	0.3017
Weak identification test (Kleibergen-Paap rk Wald F statistic)	43.7050		43.5360		44.7920	

**Table 8: GMM Estimates of the Effects of Socializing Interactions on Attitudes towards Militarists**

Variable label	Allow militarists to speak		Allow militarists to teach at college/univ		Allow militarist books in library	
	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>
Proportion of population non-religious org members	0.206	<b>0.001</b>	0.287	<b>0.000</b>	0.329	<b>0.000</b>
Number of days/week visits friends and neighbors	-0.028	<b>0.038</b>	-0.006	0.634	-0.017	0.295
Number of days/week visits relatives	-0.042	<b>0.042</b>	-0.001	0.960	-0.009	0.685
Proportion of population members of churches	-0.123	0.162	-0.189	<b>0.038</b>	-0.229	<b>0.012</b>
Proportion of whites	-0.005	0.954	-0.071	0.364	0.059	0.433
Proportion of blacks	0.028	0.782	0.038	0.612	0.077	0.504
Proportion of population 20 to 34 years of age	0.324	0.507	0.193	0.679	0.096	0.867
Proportion of population 35 to 49 years of age	0.757	0.272	0.361	0.607	1.703	0.026
Proportion of population 50 to 64 years of age	-2.496	0.006	-1.748	0.118	-3.396	0.002
Proportion of population 65 years and above	0.989	0.098	0.597	0.324	1.599	0.010
Density of population (1000 per sq miles)	-0.005	0.329	-0.011	0.027	0.004	0.553
Per capita personal income (\$10,000)	0.035	0.142	0.051	0.046	0.004	0.881
Number of per capital jobs	0.106	0.409	-0.039	0.797	0.113	0.415
Proportion of farms jobs	-0.206	0.218	-0.295	0.130	-0.493	0.024
Proportion of population owner occupiers	-0.026	0.796	0.120	0.149	-0.037	0.769
Time cluster: 1983-1986 (dummy)	-0.019	0.648	-0.003	0.952	0.034	0.454
Time cluster: 1987-1990 (dummy)	-0.056	0.023	-0.048	0.094	-0.033	0.246
Time cluster: 1991-1994 (dummy)	---	---	---	---	---	---
Mid Atlantic (dummy)	-0.022	0.622	-0.032	0.540	0.019	0.590
East North Central (dummy)	-0.032	0.456	-0.042	0.379	0.014	0.689
West North Central (dummy)	-0.071	0.054	-0.060	0.213	0.005	0.889
South Atlantic (dummy)	-0.058	0.227	-0.072	0.203	-0.007	0.867
East South Central (dummy)	-0.058	0.249	-0.042	0.482	0.018	0.724
West South Central (dummy)	-0.033	0.518	-0.019	0.733	0.006	0.866
Mountain (dummy)	0.036	0.448	0.031	0.585	0.080	0.048
Pacific (dummy)	0.071	0.240	0.042	0.543	0.078	0.128
January temperature z-score	-0.008	0.587	-0.009	0.503	-0.015	0.299
Natural amenities score	-0.009	0.107	-0.007	0.265	-0.002	0.718
Constant	0.587	0.023	0.315	0.170	0.355	0.242
Number of observations	173		168		168	
Underidentification test (Kleibergen-Paap rk LM statistic), Chi-sq(4)	27.8800	0.0000	27.6150	0.0000	26.9930	0.0000
Hansen J statistic (overidentification test of all instruments), Chi-sq(3)	2.5190	0.4718	3.8080	0.2829	1.5470	0.6716
Weak identification test (Kleibergen-Paap rk Wald F statistic)	23.1400		23.0920		23.6370	

**Table 9: GMM Estimates of the Effects of Socializing Interactions on Attitudes towards Homosexuals**

Variable label	Allow homosexuals to speak		Allow homosexuals to teach at college/univ		Allow homosexual books in library	
	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>	<i>est</i>	<i>p-value</i>
Proportion of population non-religious org members	0.392	<b>0.000</b>	0.416	<b>0.000</b>	0.395	<b>0.000</b>
Number of days/week visits friends and neighbors	0.022	<b>0.109</b>	0.044	<b>0.005</b>	0.007	0.662
Number of days/week visits relatives	-0.034	<b>0.018</b>	-0.063	<b>0.004</b>	-0.018	0.291
Proportion of population members of churches	-0.204	<b>0.001</b>	-0.309	<b>0.000</b>	-0.258	<b>0.001</b>
Proportion of whites	0.038	0.631	-0.087	0.407	0.031	0.750
Proportion of blacks	0.153	0.070	0.026	0.806	0.005	0.967
Proportion of population 20 to 34 years of age	-0.181	0.731	-0.076	0.908	-0.953	0.183
Proportion of population 35 to 49 years of age	0.334	0.559	0.076	0.924	-0.026	0.969
Proportion of population 50 to 64 years of age	-0.559	0.551	-0.272	0.792	-1.745	0.107
Proportion of population 65 years and above	-0.127	0.789	-0.533	0.419	-0.521	0.395
Density of population (1000 per sq miles)	-0.005	0.232	-0.012	0.013	-0.001	0.893
Per capita personal income (\$10,000)	0.066	0.009	0.086	0.004	0.085	0.001
Number of per capital jobs	-0.010	0.931	-0.113	0.398	0.116	0.348
Proportion of farms jobs	-0.245	0.091	-0.219	0.152	-0.241	0.122
Proportion of population owner occupiers	0.111	0.178	0.099	0.283	0.059	0.501
Time cluster: 1983-1986 (dummy)	-0.020	0.486	0.017	0.689	-0.034	0.420
Time cluster: 1987-1990 (dummy)	-0.002	0.958	0.005	0.933	-0.051	0.319
Time cluster: 1991-1994 (dummy)	0.071	0.177	0.084	0.254	0.012	0.868
Mid Atlantic (dummy)	0.006	0.871	0.022	0.630	0.102	0.008
East North Central (dummy)	0.001	0.979	-0.007	0.884	0.053	0.100
West North Central (dummy)	-0.049	0.187	-0.039	0.409	0.044	0.235
South Atlantic (dummy)	-0.024	0.550	-0.070	0.159	0.053	0.194
East South Central (dummy)	-0.065	0.182	-0.076	0.186	0.024	0.650
West South Central (dummy)	-0.016	0.717	-0.057	0.283	-0.021	0.628
Mountain (dummy)	-0.028	0.503	-0.052	0.380	0.007	0.884
Pacific (dummy)	0.018	0.668	-0.064	0.270	0.042	0.391
January temperature z-score	-0.029	0.010	-0.027	0.060	-0.020	0.212
Natural amenities score	0.005	0.247	0.009	0.124	0.005	0.424
Constant	0.391	0.153	0.471	0.145	0.711	0.027
Number of observations	211		215		217	
Underidentification test (Kleibergen-Paap rk LM statistic), Chi-sq(4)	27.7100	0.0000	27.6740	0.0000	28.7290	0.0000
Hansen J statistic (overidentification test of all instruments), Chi-sq(3)	<b>6.6510</b>	<b>0.0839</b>	6.0030	0.1115	3.1250	0.3727
Weak identification test (Kleibergen-Paap rk Wald F statistic)	42.8120		45.3310		44.3960	