# DECLINING TRUST AMIDST DIVERSITY? A NATURAL EXPERIMENT IN LEWISTON, MAINE*

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**Abstract**

This chapter explores a natural experiment of the effect of ethnic diversity on social capital in Lewiston, Maine, a previously homogeneous white city that experienced a rapid in-migration of Somalis in 2001. The case enables analysis of how inter- and intra-group trust and friendship respond to changes in diversity over time and at different geographic scales. At the municipal and regional level, changes in social capital in Lewiston do not differ markedly from comparison groups. At the neighbourhood level, however, living in neighbourhoods that experienced concentrated Somali settlement is associated with differential declines in some forms of trust and in interracial friendship.

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Between February 2001 and July 2002, more than one thousand Somali refugees migrated to Lewiston, Maine from other cities across the United States. In the year 2000, Lewiston – Maine's second largest city at 36,000 residents – was 96 percent non-Hispanic white, with a black population of just over one percent (US Census 2000). By 2010, Lewiston was nine percent black, largely due to continued Somali migration (US Census 2010). What will increasing ethnic diversity in Lewiston mean for local social capital? As this volume attests, recent scholarly findings suggest that amidst diversity, social capital – the human bonds that enable communities to act collectively – may atrophy (e.g. Putnam 2007). Yet most existing studies have two related limitations. First, examining the effects of local racial composition is complicated by self-selection bias. If people choose where they live based on racial composition, researchers cannot differentiate whether residents' social capital varies because of demographic context or because systematically different people choose to live in more or less diverse places. Second, cross-sectional studies that examine uniform geographic units fail to clarify the mechanisms through which diversity affects social capital over time and space. Indeed, we do not know at which scale diversity affects social capital. Is it through face-to-face contact, or more broadly, perhaps through competition over goods at the municipal or regional level?

The case of Lewiston, Maine serves as a natural experiment testing the effect of racial diversity on social capital for residents who were not predisposed to live amidst diversity. Drawing on repeated cross-section data from the Lewiston area in 2000 and 2006, I test this relationship at multiple geographic scales, allowing consideration of the mechanisms through which diversity operates. In multiple levels of carefully paired comparisons at the municipal, regional, and neighbourhood levels, I use a non-longitudinal difference-in-difference method to examine how a sudden influx of racial diversity to a previously homogeneous white place affects long-term, white residents' levels of inter- and intra-group trust and friendship.

On the municipal and regional level, a marked increase in racial diversity is not associated with declines in social capital, though it is associated with some increase in anti-immigrant sentiment. Taking into account patterns of social capital change elsewhere in the United States, the Lewiston area's only

unique social capital change is an increase in interracial friendships. In contrast, on the neighbourhood level, living in the census block groups that experienced the greatest increase in diversity is associated with declines in some forms of trust. Most strikingly, while the Lewiston area as a whole experienced substantial differential increases in interracial friendships, the neighbourhoods where opportunities for interracial contact were most prevalent experienced differential declines in interracial ties. Recent research suggests that inter-group contact may moderate the negative effect of diversity on social capital (Stolle, Soroka, & Johnston 2008; Laurence 2009). The case of Lewiston indicates that those living in closest proximity to rapid increases in racial diversity become less likely to form positive inter-group ties. The findings provide suggestive evidence that, at least in its early stages, the effect of diversity on social capital operates through mechanisms involving face-to-face contact.

## Predictions and Mechanisms

A review of related literature indicates that Lewiston's experience presents conditions where social capital is especially likely to decline. In a quantitative analysis of 172 studies of the relationship between ethnic diversity and social capital, Schaeffer (2014) argues that a negative relationship is more commonly found when ethnic boundaries are highly salient; for instance, when diversity is measured with respect to linguistic diversity, when contextual units of analysis are smaller than the city-level, and with studies in the United States as opposed to other geographic regions. Taking these conditions into account, the rapid in-migration of linguistically and racially distinct Somalis to previously homogeneous Lewiston, amidst the already high relevance of racial boundaries in the United States, presents a "perfect storm" where social capital is highly likely to decline. Moreover, the case of Lewiston allows for examination of geographic scale in the relationship between diversity and social capital, including analysis at the neighbourhood level. Thus, I predict that inter- and intra- group trust will decline in Lewiston, perhaps particularly at the neighbourhood level.

Whereas the literature presents clear predictions with respect to trust, predictions are less clear with respect to interracial friendships. The phenomenon is crucial to study, however, since inter-group contact may mitigate the effect of diversity on social capital (Stolle, Soroka, and Johnston 2008; Laurence 2009). Inter-group friendship is strongly related to opportunity for contact within a geographic area (Briggs 2007; McPherson, Smith-Lovin, and Cook 2001). Indeed, studies of homophily, or the tendency to associate with those like oneself, distinguish between "baseline homophily," which refers to levels of homophily generated by the opportunities for contact within the "potential tie pool," and "in-breeding homophily," which refers to levels of homophily beyond what opportunities within the tie pool would predict (McPherson, Smith-Lovin, and Cook 2001, 419; see also Kalter and Kruse in this volume). Naturally, with an increase in diversity, we would expect to see levels of interracial friendship rise as the pool of potential out-group contacts grows. Indeed, Putnam (2007, ftn 27) notes that at first glance, diversity appears to be positively associated with interracial friendship. Yet higher rates of interracial friendship could merely be the result of increased opportunity for interracial contact in more diverse settings. Controlling for opportunity for contact – that is, the probability that a random draw of contacts from a given area would result in an interracial tie – interracial friendships are in fact more common in less diverse areas. Using the same dataset, Briggs (2007, 278) confirms this relationship, writing "white residents of Los Angeles are far more likely than their counterparts in Maine to have a friend of another race, but not nearly as much as the racial composition differences between the two places would predict."

With these results in mind, I predict that levels of interracial friendship will increase in Lewiston in response to increased opportunity for contact, but I also consider the degree to which the actual increase corresponds to the increase that would be predicted by a random draw amidst greater diversity. If I find increases in interracial friendship in Lewiston, these may be attributable simply to greater opportunity for contact. On the other hand, if interracial friendship rates decrease despite increased opportunity for contact, this finding would suggest that interracial contact was not promoting harmony. In sum, I hypothesize that amid increasing diversity in Lewiston, inter- and intra-racial trust will decline, while inter-racial friendship will increase due to increased opportunity for contact. While these

predictions address the directionality of the relationship between diversity and social capital, they do little to identify the mechanisms through which it operates.

Indeed, we do not yet know at what geographic scale a "treatment" of diversity operates (Oliver and Wong 2003). Does increasing racial diversity affect relations at the neighbourhood level through processes associated with face-to-face contact? Does it affect relations at the municipal level, perhaps through competition over locally distributed goods? Or does it affect relations at a broader regional level, perhaps through labour market competition? As outlined in the introduction to this volume, four primary mechanisms have been proposed to explain the negative relationship between diversity and social capital; namely, coordination problems, threats to social control, out-group biases, and divergent preferences. Mechanisms related to coordination problems and social control are more likely to operate at a geographic scale where face-to-face contact is common, such as the neighbourhood level. Mechanisms related to out-group biases and divergent preferences should operate at any geographic scale where competition among groups can emerge, but perhaps especially at the geographic scale where distribution of goods, whether government resources or jobs, takes place. In the case of Lewiston, if out-group biases or divergent preferences mechanisms were operative, the effect of diversity on social capital could appear at any geographic scale at which competition emerged, though perhaps particularly at the municipal level, where public school funding and other government resources are distributed, or at regional labour market level. On the other hand, for the coordination problems and social control mechanisms to operate, average people from different ethnic groups must be encountering one another regularly. Thus, if these mechanisms were operative, I would expect to see the strongest effect of diversity on social capital not on the municipal or regional level, but on the neighbourhood level, where repeated face-to-face interaction occurs.

## Research Design: Lewiston as a Natural Experiment

While reviews of the literature offer some sense of the conditions under which diversity may result in hunkering down, they also acknowledge that studies of the relationship suffer from methodological weaknesses. As the introduction describes, virtually all studies examining the relationship are cross-sectional, leaving results vulnerable to self-selection bias and complicating claims of causality. Natural experiments, on the other hand, aim to approximate randomized controlled experiments, considered the gold standard in assessing causality. A controlled experiment randomly assigns participants to treatment and control groups, such that they should not differ systematically prior to treatment. Any subsequent differences between groups can be ascribed to the treatment, rather than other factors. A natural experiment, on the other hand, assigns groups to treatment and control conditions "as if at random" (Dunning 2008). Here, I examine change in social capital from 2000 to 2006 among white Americans who have lived in their communities for more than five years. Those who lived in Lewiston over this period constitute a "treatment group" that experienced a change in diversity exogenous to their preferences, thus allowing me to analyse the effect of diversity on social capital in a setting that minimizes self-selection bias.

Justifying the plausibility of a natural experiment requires demonstrating that the treatment and control group are equivalent on observables prior to treatment and detailing why the assignment to treatment and control can be considered "as if" random (Dunning 2008). My knowledge of the Somalis' migration to Lewiston stems from five visits to the city between 2003-2007 during which I conducted 66 interviews with Lewiston residents and new Somali arrivals. The "treatment" of Somali settlement can be considered "as if random" because Somalis arrived in Lewiston through processes exogenous to the preferences of Lewiston residents. Moreover, the reasons Somalis migrated to Lewiston could equally have applied to many other small U.S. cities. Their ultimate choice of Lewiston was essentially happenstance.

Two complementary quests combined to bring more than three thousand Somalis to Lewiston, Maine, beginning in February 2001. Since Somalia dissolved into chaos in 1991, more than a million Somalis have fled the country (UNHCR 2013) and 96,960 have been resettled in the United States (Office

of Refugee Resettlement 2009, U.S. Refugee Admissions Program Annual Reports to Congress, 2010-2011). Placed by the federal government in locations like Atlanta, Georgia, and Columbus, Ohio, some Somalis were disturbed by the prevalence of drugs and gangs and sought a tranquil place where they could raise their children in the Somali, Muslim tradition. At the same time that Somali elders were seeking a new home, Catholic Charities, the refugee resettlement contractor in Maine, sought relief from a serious housing crunch. For years, Portland had welcomed roughly 250 refugees annually. By 2002, Portland's Somali refugee population numbered 356 (Braga 2003). In 2001, Catholic Charities recognized that Lewiston, 45 minutes north, had a vacant stock of affordable housing particularly suitable for large Somali families. Thus, the first Somalis came to Lewiston through the suggestions of social service providers in Portland. Finding favourable conditions, Somali elders then encouraged friends and family across the nation to follow. As extensive interviews confirm, the Somali migration to Lewiston was driven by the recommendations of Catholic Charities workers outside of Lewiston and the preferences of the Somali elders, rather than by the actions of Lewiston authorities or residents.

In addition, the characteristics that attracted the Somalis to Lewiston – its relative safety and tranquillity coupled with abundant vacant housing – were far from unique to Lewiston. Indeed, as I will discuss below, neighbouring Auburn, Maine, bore similar characteristics and did not attract many Somalis. Likewise, Keene, in Cheshire County, New Hampshire, had a similar vacant housing stock situated in proximity to Manchester, the state's centre of refugee resettlement, but did not attract any noticeable number of Somalis over this period. While Auburn and Keene are far from the only towns sharing these characteristics, their existence demonstrates that the Somalis' choice of Lewiston was a matter of contingency, rather than a purposive selection based on characteristics peculiar to Lewiston.

One might wonder, however, whether the Somali settlement in Lewiston is not solely a treatment of diversity, but also a treatment of poverty or associated social ills, thus obscuring the actual relationship between racial diversity and social capital. Counter to that claim, from 2000-2006, poverty and levels of public assistance utilization increased and then returned to levels similar to those prior to the Somalis' arrival (American Community Survey, 2000-2006). Crime rates in Lewiston's Androscoggin County

declined throughout the period (Federal Bureau of Investigation Uniform Crime Reports 2000-2006). Available data strongly suggest that the arrival of a substantial Somali population in Lewiston can be reasonably considered a treatment of diversity, rather than of other socioeconomic changes. Even so, it would be problematic to treat this case as a natural experiment testing the effect of diversity on social capital if other unique changes were taking place in Lewiston that could also be shifting social capital. While I cannot rule out this possibility, Lewiston residents consistently identify the Somali settlement as the "biggest change" in the last decade in interviews even many years after the Somalis' initial arrival. Other than the racial demographic change associated with Somali settlement, little else is going on in Lewiston that makes it substantially different from other small New England cities.

In sum, Lewiston exemplifies a natural experiment in that a sudden racial demographic change was assigned to Lewiston residents through exogenous processes that involved a great deal of contingency. That said, Lewiston does not represent an absolutely archetypal natural experiment. Selection of Lewiston as the "treatment group" cannot be considered entirely random since the Somalis did choose to move there. Likewise, the treatment is applied on the group level – throughout a geographic area – rather than on the individual level. As I shall discuss below, however, neither concern proves insurmountable. Indeed, even if Lewiston is not a perfect natural experiment, some methodologists suggest that comparing geographically proximate, intact comparison groups accurately replicates experimental results (Cook, Shadish, and Wong 2008).

## Methods

The Social Capital Community Survey (SCCS), developed by Robert Putnam and used in his 2007 article, enables analysis of the Lewiston natural experiment. The initial SCCS, conducted in 2000 with a national sample (n = 3003) and 41 community samples, included a 500 person sample in Lewiston's Androscoggin County (AC). In 2006, a second wave of the SCCS included a national sample

(n = 2741) and repeat samples in eleven of the initial 41 communities, including AC.[1] The 2006 SCCS consists of new representative samples from these areas, rather than re-contacting respondents from the 2000 SCCS. In order to capture social capital change among Lewiston residents experiencing a level of diversity they did not choose, my population of interest within the SCCS is non-Hispanic whites who have lived in their communities for more than five years; that is, prior to the in-migration of Somalis. Since my data is non-longitudinal, consisting of separate representative samples of the Lewiston area in 2000 and 2006, my analysis would be vulnerable to self-selection bias if Lewiston had experienced marked exit following the arrival of the Somali population, leaving behind a group that might respond in systematically different ways. Examination of census data, however, suggests that this was not the case. Lewiston did experience a seven percent decline in its white population from 2000-2010; however, this rate of decline actually marked a tapering off of population loss, which began in the 1980s and accelerated in the 1990s. In 1990-2000, prior to the Somalis' arrival in 2001, Lewiston experienced a 13 percent decline in white population. Moreover, as I will discuss later, the census block groups that experienced the most concentrated Somali settlement averaged similar rates of white exit as a comparable group of census block groups that did not experience concentrated Somali settlement. Demographic data suggest that, if anything, white population decline lessened following the Somalis' arrival.

The natural experiment research design also requires that a comparison group be readily identifiable. An ideal comparison group would not be systematically different in 2000 and would share characteristics such that it approximates the counterfactual; that is, what would have happened to Lewiston's social capital in the absence of the Somali migration? To accomplish this task, comparison groups at each level of geographic scale should possess four main similarities to their respective treatment groups. First, the comparison group should be previously homogeneous white prior to 2001, and maintain similarly low levels of diversity through 2006. Second, the comparison group should be similar to Lewiston in terms of the characteristics that brought the Somalis to the city, namely abundant vacant

[1] Respondents were recruited via random-digit dialling achieving an overall AAPOR RR3 response rate of 27.4 percent in 2000 and 19.3 percent in 2006. The AAPOR RR3 response rate in the Androscoggin County sample was 26.8 in 2000 and 25.4 in 2006.

housing, affordable rents, and a small, safe atmosphere. Third, the comparison group should be as similar as possible to Lewiston in terms of its social capital and other characteristics that contribute to changing social capital over time. As such, it would need to be located in the Northeast, and thus subject to similar regional conditions that might affect social capital change; and it would need to share Lewiston's history of recent economic decline and population loss. Finally, the comparison group would need to experience no shocks from 2000-2006 that would set it on a social capital trajectory different from Lewiston. Clearly, identifying an ideal comparison group is a tall order. Since we do not know at what scale a "treatment" of racial diversity operates, I conduct multiple levels of carefully paired analyses at the municipal, regional, and neighbourhood level.

Comparison Groups

To examine changes at the municipal level, neighbouring Auburn, just across the Androscoggin River, provides an ideal foil for Lewiston. Table 1 compares mean scores on key social capital and well-being measures in Lewiston and Auburn in 2000. In t-tests, I find no significant differences in social capital between the two cities before the arrival of the Somali population. In the year 2000, Auburn was demographically similar to Lewiston, although somewhat smaller and wealthier, as Table 2 demonstrates. Like Lewiston, it had a high vacant housing rate and similar rental prices, and was under an hour from the Somali refugee community in Portland. In terms of the reasons Somalis relocated to Lewiston, the towns were not readily differentiable. Interviews strongly suggest that the Somalis' choice of Lewiston over Auburn was not purposive. Moreover, Lewiston and Auburn, known locally as the "Twin Cities," are so closely linked, that apart from the Somali influx, changes over time are likely to be similar across the two towns.

[Tables 1 and 2 about here]

Even so, comparing the cities would be problematic if residents exited Lewiston for Auburn following the Somalis' arrival. While I cannot rule out this possibility, demographic evidence does not

speak in its favour. If white Lewiston residents had departed for Auburn, we would expect to see an uptick in Auburn's white population. Instead, we see Auburn's white population continue the decline that began in the 1990s, with a four percent decline in the decade following the Somalis' arrival. Demographic data also suggest, however, that we cannot consider Auburn entirely "untreated" by diversity. Between 2000-2010, Auburn's black population grew from less than 1 percent to 2 percent (net increase 439). Lewiston's black population grew from 1 percent to 9 percent (net increase 2756). If anything, the small Somali presence in Auburn would understate the effect of diversity on social capital in Lewiston.

Comparing Lewiston and Auburn before and after the Somalis' arrival allows me to consider how an influx of diversity might affect social capital at the municipal level. It remains possible, however, that diversity impacts social capital on a broader geographic scale. Thus, I also look for evidence that the demographic shock in Lewiston affected social capital countywide, by comparing changes in Androscoggin County (AC) to those in other samples in the 2000-2006 SCCS. Unfortunately, finding an ideal comparison group for AC within the SCCS proves impossible.[2] Thus, I evaluate whether AC has experienced unique changes in social capital over this period in a two-step process. First, I compare AC to the national sample, identifying differential changes in social capital. Second, I conduct placebo tests comparing the ten other samples in the 2000 and 2006 survey to the national sample. In so doing, I evaluate whether AC experienced unique changes in social capital with respect to the nation following the Somalis' arrival, or whether other samples experienced similar changes over this period.

Finally, analyses at the municipal and regional level may obscure changes in social capital occurring at a more micro level in Lewiston-Auburn's neighbourhoods. Thus, I compare social capital

[2] Among the ten other samples in the 2000 and 2006 SCCS, most are rejected because of regional differences or because they were not racially homogeneous in 2000. Cheshire County, New Hampshire remains a plausible comparison group, although it cannot be considered entirely "untreated" by diversity over this period, with a doubling of its racial and ethnic minority population over this period to comprise 3 percent of the county. Analysis comparing AC and Cheshire County finds no differential changes in social capital in AC over this period. I do not present these results since, as I shall discuss below, the timing of the interviews in New Hampshire compromises their comparability. Nearly all 2006 interviews in AC occurred before the 2006 immigration rallies and all 2006 New Hampshire interviews occurred in the post-rally period.

change in neighbourhoods that experienced high levels of Somali settlement to those that did not. In order to identify neighbourhoods of concentrated Somali settlement, I rely on the proportion of blacks reported in the 2010 U.S. Census data.[3] According to the 2010 Census, nearly three-quarters of Lewiston-Auburn's black population is clustered in seven of the towns' 42 census block groups, which each have a black population of greater than 10 percent.[4] As Figure 1 displays, six of these seven block groups are located in Lewiston, to the right of the jagged black line representing the Androscoggin River; one is located in Auburn, just to the northwest of the river's border with Lewiston. I classify these seven block groups as those with concentrated Somali settlement. Drawing on fieldwork and demographic analysis that reveals why the Somalis chose to settle in the concentrated block groups, I identify comparison census block groups that fall within the range of the concentrated block groups along three dimensions: median monthly rent, proportion rental housing, and housing vacancy rate. Comparison block groups must also be less than five percent black in 2010, having experienced no notable change in racial diversity from 2000-2010.[5]

[Figure 1 about here.]

As Figure 1 displays, these characteristics apply to five block groups in Auburn's downtown, identified with "CG" (for comparison group) on the map. As Table 2 displays, on average, this comparison group is remarkably similar to the concentrated block groups, save for the latter's marked increase in black population over this time period. As Table 1 attests, in t-tests the concentrated block groups had no significant pre-existing differences in social capital, save for a higher level of interracial friendships in the concentrated block groups prior to the Somalis' arrival. Table 1 also demonstrates that

[3] While not all blacks in the area are Somalis, municipal estimates of the population suggest that roughly 95 percent of local blacks are Somali and not native-parentage African-American (Cullen 2011).
[4] The second wave of the SCCS took place in 2006, so the 2010 data will not perfectly represent the Somali settlement patterns in 2006. Fieldwork in Lewiston suggests that Somali settlement patterns within the region did not change in any notable way from 2006-2010.
[5] Survey respondents are classified by their 2000 census block location, but 2010 block definitions do not differ markedly. Mapping the 2010 proportion black onto the 2000 block definitions includes some residents in the "treatment" group (in the areas labelled "TG" on Figure 1) that actually live amid lower levels of diversity, thus understating the effect of diversity on social capital.

at the neighbourhood level, sample sizes are quite small. Across the two waves of the survey, the sample of long-term white residents in the concentrated block groups is 67, with 48 in the comparison block groups.[6]

Variables and Method of Analysis

I focus my analysis on three sets of dependent variables; namely, those that measure inter-racial trust, intra-racial trust, and inter-racial friendship. In terms of interracial trust, I consider anti-immigrant sentiment, using a question on whether respondents agree that "immigrants are getting too demanding in their push for equal rights." Response categories range from "disagree strongly" to "agree strongly." I also employ a question asking the respondent "how much you trust" blacks, with four response categories ranging from trust "a lot" to "not at all." In terms of intra-racial trust, I employ one similar question asking how much the respondent trusts whites. In response to on-going debates about appropriate trust measures (Uslaner 2010, Sturgis and Smith 2010, Torpe and Lolle 2011), I analyse three measures, including trust in neighbours, generalized social trust, and perceived likelihood of community collective action.[7] Finally, in terms of inter-racial friendship, I examine an index consisting of the number of types of inter-racial ties the respondent has, ranging from zero (no interracial ties) to three (interracial ties with at least one black, Asian, and Hispanic friend). The count of interracial ties measures "racial exposure (or isolation) in friendships" and not the full extent or intensity of interracial relationships within the respondent's network (Briggs 2007, 264).

In all of my analyses, I control for a range of variables that are widely considered to be determinants of social capital and are used in Putnam's (2007) models. At the individual level, I control

[6] All of the comparison neighbourhoods are in Auburn, while most of the "treatment" neighbourhoods are in Lewiston, raising the possibility that the changes in social capital are the result of municipal residence rather than changing levels of racial diversity. To address this possibility, I conduct additional analyses described below that allow me to probe neighbourhood-level change independent of municipal residence.

[7] The first asks to what extent the respondent trusts "people in your neighbourhood." The canonical "generalized trust" question asks "Would you say that most people can be trusted or that you can't be too careful?" The collective action question reads "If public officials asked everyone to conserve water or electricity because of some emergency, how likely is it that people in your community would cooperate?" Five response categories range from "very unlikely" to "very likely."

for gender, age, education, income, homeownership, and length of residence in the community. When comparing the Lewiston area to the national sample, I also control for contextual variables associated with social capital, including the following census tract level variables from the year 2000: population density, percent in same town as five years earlier, percent Bachelor's degree, poverty rate, Herfindahl index of diversity,[8] Gini index of inequality, average commute time, percent renters, and percent citizens.[9] Finally, in comparisons with the national sample and placebo tests, I include a variable corresponding to whether the respondent took the survey after the U.S. public was widely aware of the 2006 immigration rallies. As Hopkins (2010) has demonstrated, the increased salience of immigration over this period contributed to rising anti-immigrant sentiment, particularly in places experiencing immigrant population growth.[10]

To identify differential changes in social capital over this period, I employ a difference-in-difference technique for non-longitudinal data. To identify changes over time, I generated a variable called "wave," which is equal to one when the observation is from 2006. When statistically significant, the coefficient on wave can be interpreted as the change in the dependent variable associated with being a respondent in 2006 as opposed to 2000, controlling for the other explanatory variables. At each level of geographic scale, I interact "wave" with a variable indicating whether the respondent is a resident of the relevant "treatment" group, whether Lewiston at the municipal level, AC at the regional level, or the diverse block groups at the neighbourhood level. The interactive variable can be interpreted as the differential effect of being a resident of the treatment group in 2006 as opposed to 2000, holding all else constant. In this way, the interactive variable identifies cases in which the treatment group has experienced a different social capital trajectory over the period. For continuous dependent variables, I use

[8] Controlling for the year 2000 Herfindahl index allows me to hold constant the effect of baseline diversity on social capital across the different settings, while an interactive variable indicating that the respondent is a resident of AC in 2006 aims to capture the effect of change in diversity resulting from the Somali migration. Including or omitting the Herfindahl index from analyses does not alter the results.

[9] To address methodological issues resulting from analysing variables at the individual and census tract level, I employ clustered standard errors (see Primo, Jacobsmeier & Milyo 2007).

[10] In Lewiston-Auburn, only 14 of 246 interviews took place after news of the rallies broke on the national scene. At the municipal and neighbourhood levels of analysis, including or omitting this variable does not change results and I present them with it omitted. In the national sample, however, 35 percent of interviews took place after news of the rallies was widely known, so in comparisons of AC and the nation and the placebo tests, I include it in analyses.

ordinary least squares; for binary dependent variables, I use probit; and for count dependent variables, I employ poisson regression.[11] Regression results for all levels of analysis are presented in the Appendix.

## Findings

Following Putnam (2007) and others, I predict that a rapid increase in racial diversity in Lewiston will result in declines in inter- and intra-racial trust, as well as increases in inter-racial friendships that can be attributed to increased opportunity for contact. As a first step toward understanding whether social capital indeed changed in response to the Somali migration, I first analyse changes in Lewiston over time, followed by analyses at the municipal, regional, and neighbourhood levels.

### Changes in Lewiston over Time

As Table 3 demonstrates, being a resident of Lewiston in 2006 as opposed to 2000 is associated with lower levels of generalized social trust, increased anti-immigrant sentiment, and increases in interracial friendships (holding gender, age, years of education, income, home ownership, and years of local residence at their means). For instance, all else constant, residence in Lewiston in 2006 is associated with a 15 percentage point decline in the likelihood of agreeing "most people can be trusted" and a 17 percentage point increase in the likelihood of agreeing that "immigrants have grown too demanding." On the other hand, residence in Lewiston in 2006 is also associated with increases in interracial friendship, including an increase of 0.36 interracial ties on the scale from zero to three. Analysis of Lewiston's social capital over time reveals some changes following the Somalis' arrival, but are these variations unique to Lewiston, given its increase in racial diversity?

[Table 3 about here.]

[11] To address concerns related to interaction terms in non-linear models (Ai, Chunrong, & Norton 2003), I checked results using the method described in Norton, Wang & Ai (2004) and employed Clarify (Tomz, Wittenberg, & King 2003) to calculate predicted effects.

Municipal Level Analysis

As compared to Auburn, Lewiston experienced few differential changes in social capital from 2000-2006. All else constant, the only marginally statistically significant change ($p = 0.07$) is that being a Lewiston resident in 2006 is associated with a 12 percentage point differential increase in the likelihood that the respondent strongly agrees that immigrants are growing too demanding. At the municipal level, we do not see evidence of declining social capital. Perhaps, however, a "treatment" of diversity operates at a broader geographic scale and comparing Lewiston to Auburn masks changes in social capital occurring throughout the local region.

Regional Level Analysis

At the regional level, Androscoggin County experienced few differential changes in social capital compared to the nation over this period. All else constant, residents of AC experienced a 7 percentage point differential increase in the likelihood of agreeing strongly that immigrants were too demanding. Other forms of inter- and intra-group trust did not experience differential declines. On the other hand, AC residents in 2006 did display a differential increase in interracial friendship, amounting to 0.22 additional interracial ties, on average. It is tempting to assume that these processes are related to the demographic shock of the Somali arrival, but to be confident in that assertion I need to show these differential changes were unique to AC and not evident in other samples from the SCCS.[12] Figure 2 presents the predicted differential change in anti-immigrant sentiment and interracial friendships associated with being a resident of each sample in 2006, as compared to the national sample, all else constant.

[Figure 2 about here.]

As the left-hand panel of Figure 2 demonstrates, differential increases in anti-immigrant sentiment are not unique to AC. Rochester (RO) and Houston (HO) also experienced differential

[12] The appendix presents regression results from the comparison of AC to the nation. Regression results from the placebo tests comparing each of the other ten 2000-2006 samples to the national sample are available upon request.

increases in anti-immigrant sentiment as compared to the nation over this period, as did New Hampshire (NH) and Cheshire County within NH (CC), though these last two samples were fielded entirely in the post-immigration rally period. While AC experienced the greatest percent change in its ethnic and racial minority population between 2000-2010, Rochester's Monroe County experienced the least, and Houston's Harris County ranks fifth among the eleven samples. Given this pattern, it would be difficult to attribute the differential increase in AC wholly to the Somali migration. In terms of interracial friendships, however, the right-hand panel of Figure 2 demonstrates that AC's pattern of change as compared to the nation was entirely unique. None of the other 2000-2006 SCCS samples experienced a statistically significant differential increase in interracial friendships, with most experiencing directional differential declines.

While AC's increase in inter-racial friendship is unique, is it simply a matter of increased opportunity for contact? If so, we would expect the actual increase in the rate of interracial friendship to be no greater than the increase predicted randomly, given the increase in the out-group tie pool. Briggs' (2007) "random choice model of friendship selection" specifies that the probability of choosing at least one out-group friend can be calculated by the formula $1 - (1 - p)^N$, where p corresponds to the out-group proportion in the given context and N corresponds to the friendship network size. I set N to equal six, the average number of friends in the AC sample. Given AC's two percent ethnic/racial minority population in 2000, a random choice model would predict an 11 percent likelihood of having an interracial friend. In actuality, 51 percent of AC residents report an interracial friendship, a 40 percentage point difference. By 2006, when the AC ethnic/racial minority population amounts to six percent, a random choice model would predict a 31 percent likelihood of having an interracial friend. In reality, 63 percent of AC residents report an interracial tie. Given the four percentage point increase in ethnic minority population in Lewiston between 2000-2006, we would expect to see a 20 percentage point increase in the likelihood of having one interracial friend based on a random draw. In fact, we see a 12 percentage point increase in the likelihood of having one interracial friend. The increase is smaller than what a random opportunity model would predict, but levels of interracial friendship in AC far exceed predicted levels to begin with

and increase even further in the presence of greater diversity. All the same, the increase in interracial friendships in AC over this period should not be interpreted as a flowering of interracial harmony, as the increase could be attributed to increased opportunity for contact.

In sum, five years after the Somalis' arrival in Lewiston, I find little evidence of broad-based change in social capital when comparing the town to a neighbouring town or the county to areas elsewhere in the United States. It remains possible, however, that the neighbourhoods where Somalis concentrated experienced changes in social capital that were obscured in analyses at the municipal and regional level. Thus, I next consider social capital change in neighbourhoods of concentrated Somali settlement, as compared to similar neighbourhoods that did not experience substantial changes in racial diversity over this period.

Neighbourhood Level analysis

Looking first at the average levels of social capital in the concentrated and comparison block groups before and after the arrival of the Somali population, we see a striking pattern in Table 1. In 2000, the diverse neighbourhoods were at least marginally greater in terms of social capital, save for slightly lower trust in blacks and higher anti-immigrant sentiment. In 2006, the relationship almost entirely reverses. While there are few statistically significant differences in simple post-treatment t-tests, average levels of social capital in the comparison group now exceed levels of social capital in the diverse neighbourhoods on almost all measures.

In multivariate analyses, I find that living in the diverse neighbourhoods in 2006 is associated with directional declines in interracial trust, intra-racial trust, trust in neighbours, and generalized social trust, as well as statistically significant declines in perceptions of the likelihood of community cooperation and the number of interracial friendships. In its first panel, Figure 3 displays the predicted probability of saying that neighbours are very likely to cooperate to conserve resources across the two settings in 2000 and 2006. All else constant, living in a concentrated block group in 2006 is associated with a remarkable 41 percentage point differential decline in the likelihood of saying that neighbours are

very likely to cooperate ($p$ = .04). In its second panel, Figure 3 illustrates the predicted count of the types of interracial friendships (a zero to three scale) across the two settings in 2000 and 2006. Holding other variables at their means, being a 2006 respondent in a diverse neighbourhood is associated with a differential decline in interracial friendships of 1.65 ($p$ = .01), despite the fact that these neighbourhoods have the greatest opportunity for interracial contact.[13]

[Figure 3 about here.]

Of course, sample sizes are quite small here and results only rise to the level of statistical significance for two of seven dependent variables. Thus, I momentarily set aside the natural experiment design to instead look across all of Lewiston-Auburn at how the percent black in each block group in 2010 affects change in social capital. I find that a larger black population is associated with statistically significant differential declines in terms of interracial trust, intra-racial trust, and all other trust measures, as well as statistically significant differential declines in interracial friendships (in all, statistically significant declines in all the dependent variables, save for anti-immigrant sentiment).[14] This analysis, examining the full sample across the two towns, is less conducive to making causal claims than the preceding natural experiment design. Nonetheless, in combination, these two analyses suggest that long-term, white residents living in areas of concentrated Somali settlement experienced declines in trust and interracial friendship following the arrival of the Somali population.

[13] All of the comparison block groups are located in Auburn, while all but one of the concentrated block groups is in Lewiston, raising the possibility that the changes in social capital result from factors associated with municipal residence and not just the increase in racial diversity. To address this concern, I relaxed the conditions for what constituted a "control" neighbourhood and ran additional analyses comparing the concentrated block groups to all centre city block groups in Lewiston and Auburn that by 2010 still had a black population of less than five percent. The comparison group for these analyses was thus fifteen centre city block groups, with five in Lewiston. Comparing the centre city neighbourhoods that did not experience marked increases in racial diversity to the concentrated neighbourhoods produced substantively identical results, with the concentrated neighbourhoods experiencing statistically significant differential declines in the likelihood of cooperation and the number of interracial ties. This analysis, in combination with examining how the 2010 percent black in neighbourhoods across both cities affects social capital, suggests that the findings result from residence in a diverse neighbourhood and not whether the respondent lives in Auburn as opposed to Lewiston.

[14] To reduce the possibility that these results stem from increasing socioeconomic disadvantage rather than increasing racial diversity, this analysis controls for block group level median household income and change in median household income from 2000-2010 and employs clustered standard errors.

The results with respect to interracial friendships are particularly robust and striking. The regional analysis demonstrates that residents of AC as a whole experienced differential increases in interracial friendships, which may be attributed to increased opportunity for contact. On the other hand, if we compare those living in highly diverse neighbourhoods to those living in the otherwise similar neighbourhoods that did not diversify, those in the diverse neighbourhoods experienced substantial differential declines. Figure 4 illustrates the actual change in the likelihood of having one non-white friend in the diverse neighbourhoods as compared to the predicted change given a random model of friendship selection. For residents of the diverse neighbourhoods, where opportunity for contact with new Somali residents was greatest, the random model of friendship selection predicts a 54 percentage point increase in the likelihood of having at least one interracial friendship. Despite the increased opportunity for contact, residents of the diverse neighbourhoods reported a 20 percentage point decline in the likelihood of having one interracial friendship. In contrast, residents of the comparison neighbourhoods reported an increase in the likelihood of interracial friendships that exceeded that predicted by the random model. Whereas the random model would have predicted a nine percentage point increase in the likelihood of having an interracial friendship, residents of the comparison group experienced a 26 percentage point increase. Though some evidence suggests that interracial friendships may moderate the negative effect of diversity on social capital (Stolle, Soroka, and Johnston 2008; Laurence 2009), findings from Lewiston suggest that those who live in neighbourhoods experiencing rapid diversification are less likely to form such friendships. Interestingly, however, those in nearby neighbourhoods, including those only just across the river in Auburn, experience an increased likelihood of interracial friendship.

[Figure 4 about here.]

Recent studies have argued that some or even all of the relationship between racial diversity and declining social capital can be explained by socioeconomic disadvantage in racially diverse areas (Laurence 2009, Letki 2008). Yet the more marked declines in social capital in the neighbourhoods that experienced concentrated Somali settlement cannot be attributed to socioeconomic status. First, in

Lewiston and Androscoggin County as a whole, I find no interaction between individual level socioeconomic status and changing levels of social capital following the Somalis' arrival. Second, the comparison group for the diverse neighbourhoods was selected to have similar aggregate socioeconomic characteristics prior to the Somalis' arrival, such that the diverse neighbourhoods were not an area of distinct socioeconomic disadvantage. Finally, between the 2000 and 2010 censuses, both areas experienced declining socioeconomic status, but only the concentrated neighbourhoods experienced increases in racial diversity and declines in social capital.

## Discussion

Drawing on the findings of Putnam (2007) and others, I predicted that following the arrival of a substantial Somali population in previously homogeneous Lewiston, the area would experience declines in its levels of inter- and intra-racial trust, and an increase in interracial friendship. To better understand the mechanisms through which diversity affects social capital, I analysed changes at the municipal, regional, and neighbourhood level. At the municipal and regional level, I find few changes in social capital unique to the Lewiston area. In placebo tests, the only unique change in Androscoggin County is a marked increase in interracial friendships. Given the substantial increase in racial diversity in the county over this period, the actual increase in interracial ties does not exceed what a random model would predict. At the county level, interracial friendships are forming, but these ties could be a sign of increased opportunity for contact, rather than necessarily increased interracial harmony.

At the neighbourhood level, however, the picture is substantially different. The neighbourhoods with the most concentrated Somali settlement experienced differential declines in the perceived likelihood of neighbourhood cooperation, as compared to similar neighbourhoods that did not diversify. Moreover, in contrast to the county-wide increases in interracial friendship, diverse neighbourhoods experienced substantial differential declines. The sample sizes at the neighbourhood level of analysis are quite small,

but an analysis of the full sample in Lewiston-Auburn provides additional support. Living in a block group that experienced higher levels of black settlement over this period is associated with statistically significant differential declines in six of the seven inter- and intra-racial trust and friendship variables.

Taken as a whole, these results both challenge and support findings linking diversity and declining social capital. On the one hand, reviews of the literature suggested that the Somali migration to Lewiston presented a scenario in which social capital was especially likely to decline, given the high salience of ethnic boundaries as a racially, religiously, linguistically, and culturally distinct group arrived in a previously homogeneous white destination. Despite these predictions, at the municipal and regional level we see essentially no relationship between increasing diversity and declining social capital. Since previous studies have found social capital declines amidst diversity at these geographic scales, declines at this level may only become visible over a longer span than five years. Alternatively, perhaps the relationship between diversity and social capital is only activated at a higher threshold of diversity than was present in Lewiston or AC as a whole.

On the other hand, reviews suggested that the strongest negative relationship between diversity and social capital was often found at the neighbourhood level, as the evidence from Lewiston underscores. These findings provide suggestive evidence about which mechanisms may underpin the relationship between diversity and social capital. If we had seen declines in social capital primarily at the municipal or regional level where goods are distributed, it would have provided support for the out-group biases and divergent preferences mechanisms. Instead, the findings of declining social capital at the neighbourhood level provide support for mechanisms that operate at the level of face-to-face contact, namely the coordination problems and social control mechanisms. In a previously homogeneous city that experienced a recent, rapid demographic shock, social capital appears to decline in response to challenges associated with face-to-face contact amid increasing diversity.

The findings also speak to the role of interracial contact in the relationship between diversity and social capital. Stolle and her co-authors (2008) argue that while contextual diversity generally has negative effects on trust, these effects are mitigated by inter-group interactions. The example of Lewiston

suggests that interracial bridges are less likely to form among residents of rapidly diversifying neighbourhoods, but more likely to form among residents of nearby neighbourhoods that are not directly experiencing increasing racial diversity. These findings are actually consonant with Gordon Allport's (1954) contact theory, which argued that interracial contact could result in harmony only in the presence of stringent conditions, including that groups possesses similar status and work toward a shared goal. "Sheer" contact, Allport (1954, 261, 263) wrote, "does not dispel prejudice; it seems more likely to increase it." Those slightly removed from changing racial diversity in Lewiston, can choose the extent of their exposure. The circumstances in which they encounter diversity may thus more closely fit the conditions of the contact theory. Those at the centre of changes in racial diversity, however, do not get to choose their level of interaction. They navigate difference on a day to day basis and, at least in the short-term, they find that contact induces, if not outright animosity, still not harmony and friendship. Qualitative evidence from Lewiston provides further support for the idea that the initial valence of conflict in rapidly diversifying neighbourhoods is negative. Informants spoke of fights among neighbours about different tolerance of noise and contrasting sexual mores in which disagreements quickly become attributed to race.

In combination, these findings suggest important directions for research and policy. First, the findings suggest that geographic scale shapes the impact of diversity on inter- and intra-group relations, a question that warrants further analysis beyond Lewiston. Second, the findings raise the question of the timeframe in which diversity affects social capital. Over time would contacts at the neighbourhood level become more positive, while concerns beyond the neighbourhood became more prevalent? If this pattern of findings proved robust to other settings and longer timeframes, it suggests that policy interventions should be aimed at facilitating positive contact at the neighbourhood level in order to alleviate the challenges of cross-cultural communication.

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[Appendix tables here.]

| | Lewiston | Auburn | Androscoggin County | Nation | Concentrated Blocks | Comparison Blocks |
|---|---|---|---|---|---|---|
| **2000** | | | | | | |
| Generalized Social Trust | 0.56 | 0.63 | 0.57 | 0.55 | 0.67 | 0.57 |
| Trust in Neighbors | 2.27 | 2.41 | ***2.38*** | ***2.47*** | 2.27 | 2.21 |
| Cooperation with Neighbors | 4.13 | 4.29 | 4.27 | 4.38 | 4.50 | 4.13 |
| Intra-racial Trust (Whites) | 2.29 | 2.42 | ***2.36*** | ***2.26*** | 2.50 | 2.50 |
| Anti-immigrant Sentiment | 2.65 | 2.75 | ***2.67*** | ***2.91*** | 2.88 | 2.70 |
| Trust Blacks | 2.28 | 2.39 | ***2.33*** | ***2.17*** | 2.47 | 2.59 |
| Interracial Friendship Count | 0.76 | 0.67 | ***0.80*** | ***1.3*** | ***1.00*** | ***0.55*** |
| N = | 131 | 105 | 363 | 1373 | 33 | 24 |
| **2006** | | | | | | |
| Generalized Social Trust | ***0.44*** | ***0.55*** | 0.53 | 0.53 | 0.41 | 0.46 |
| Trust in Neighbors | 2.34 | 2.35 | 2.42 | 2.49 | 2.24 | 1.92 |
| Cooperation with Neighbors | 4.19 | 4.32 | ***4.28*** | ***4.37*** | 4.12 | 4.21 |
| Intra-racial Trust (Whites) | 2.36 | 2.41 | ***2.42*** | ***2.31*** | 2.34 | 2.38 |
| Anti-immigrant Sentiment | ***3.33*** | ***2.89*** | 3.21 | 3.24 | 3.50 | 3.17 |
| Trust Blacks | 2.25 | 2.32 | ***2.31*** | ***2.24*** | 2.13 | 2.21 |
| Interracial Friendship Count | 1.03 | 1.22 | 1.07 | 1.50 | ***0.68*** | ***1.13*** |
| N = | 144 | 102 | 367 | 1599 | 34 | 24 |

**Table 1. Mean Social Capital among Treatment and Comparison Populations at Municipal, Regional, and Neighborhood Levels.** (Means in bold and italic are those in which the treatment and comparison group are statistically significantly different in two-sided t-tests.) Source: SCCS 2000 and 2006.

| | Lewiston | Auburn | Androscoggin County | Nation | Concentrated Blocks | Comparison Blocks |
|---|---|---|---|---|---|---|
| Median Rent 2000 | $408 | $446 | $433 | $602 | $400 | $411 |
| Vacancy Rate 2000 | 0.07 | 0.08 | 0.09 | 0.09 | 0.11 | 0.10 |
| Rental Rate 2000 | 0.48 | 0.38 | 0.32 | 0.29 | 0.67 | 0.61 |
| Median HH Income 2000 (in 00$) | $29,191 | $35,652 | $35,793 | $41,994 | $23,092 | $24,729 |
| Median HH Income 2010 (in 00$) | $28,353 | $32,139 | $34,316 | $40,060 | $19,684 | $20,422 |
| % Change Median HH Income | -0.03 | -0.10 | -0.04 | -0.05 | -0.16 | -0.16 |
| Population 2000 | 35,690 | 23,203 | 103,793 | 281,421,906 | 11,541 | 5,560 |
| Population 2010 | 36,592 | 23,055 | 107,702 | 308,745,538 | 12,459 | 5,383 |
| % Change Population ‘00-‘10 | 0.02 | -0.01 | 0.04 | 0.09 | 0.07 | -0.03 |
| Percent White 2000 | 0.96 | 0.97 | 0.97 | 0.75 | 0.94 | 0.95 |
| Percent White 2010 | 0.87 | 0.94 | 0.93 | 0.72 | 0.73 | 0.93 |
| Average White % Change ‘00-‘10 | -0.07 | -0.04 | -0.01 | 0.06 | -0.05 | -0.06 |
| Percent Black 2000 | 0.01 | 0.01 | 0.01 | 0.12 | 0.02 | 0.01 |
| Percent Black 2010 | 0.09 | 0.02 | 0.04 | 0.13 | 0.22 | 0.02 |
| Average Black % Change ‘00-‘10 | 7.29 | 3.16 | 4.76 | 0.12 | 77.62 | 1.04 |

**Table 2. Treatment and Comparison Group Socioeconomic and Demographic Characteristics.** Source: U.S. Census 2000, 2010; for 2010 median household income, American Community Survey five-year estimates.


**Figure 1. Lewiston-Auburn Neighborhood Treatment and Comparison Groups.** The treatment group consists of the census block groups with greater than ten percent black population in 2010 and the additional regions labelled "TG," which were part of these census block groups under the 2000 block group definitions used in the SCCS data. The comparison group consists of the census block groups labelled "CG." Map generated using Social Explorer, drawing on U.S. Census 2010 data.

| | 2000 | 2006 | Difference | |
|---|---|---|---|---|
| Proportion agreeing strongly that immigrants too demanding | 0.14 | 0.31 | 0.17 | *** |
| Proportion agreeing most people can be trusted | 0.57 | 0.42 | -0.15 | ** |
| Expected number of interracial friendships | 0.74 | 1.10 | 0.36 | *** |

** $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

**Table 3. Lewiston Social Capital Change 2000-2006**

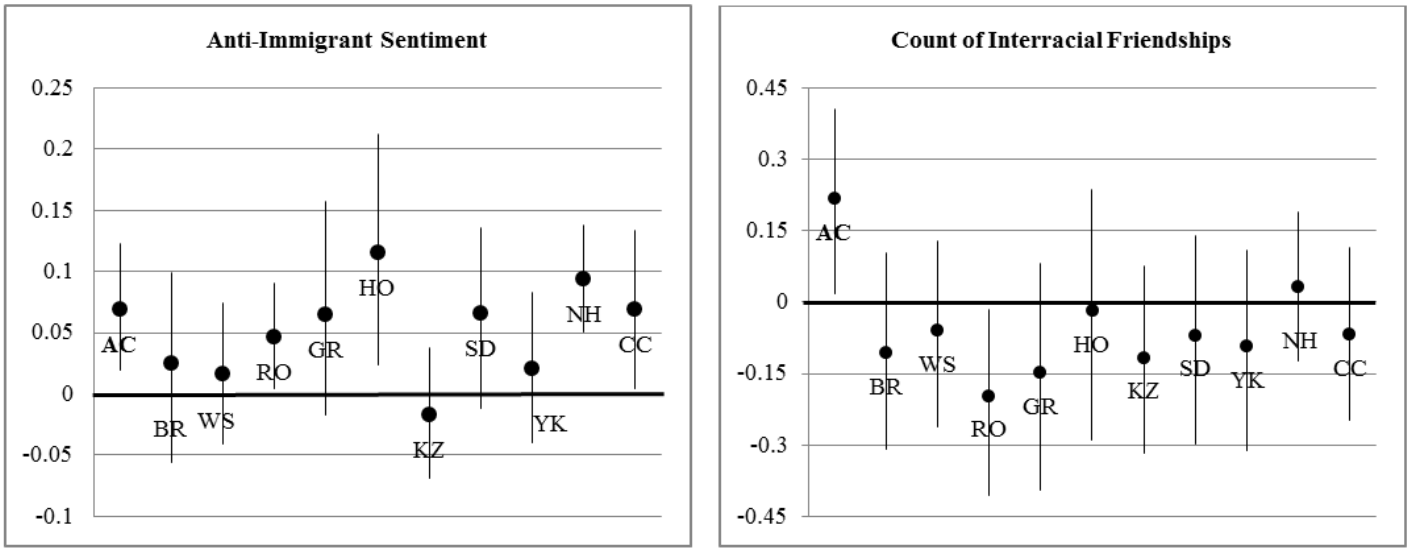


**Figure 2. Differential Change in Social Capital in Androscoggin County Compared to the Nation and Ten Placebo Tests.** Predicted differential change associated with being a resident of the sample in 2006, as compared to the nation. AC = Androscoggin County; BR = Baton Rouge, Louisiana; WS = Winston-Salem, North Carolina; RO = Rochester, New York; GR = Greensboro, North Carolina; HO = Houston, Texas; KZ = Kalamazoo, Michigan; SD = San Diego, California; YK = Yakima, Washington; NH = New Hampshire; CC = Cheshire County, NH.

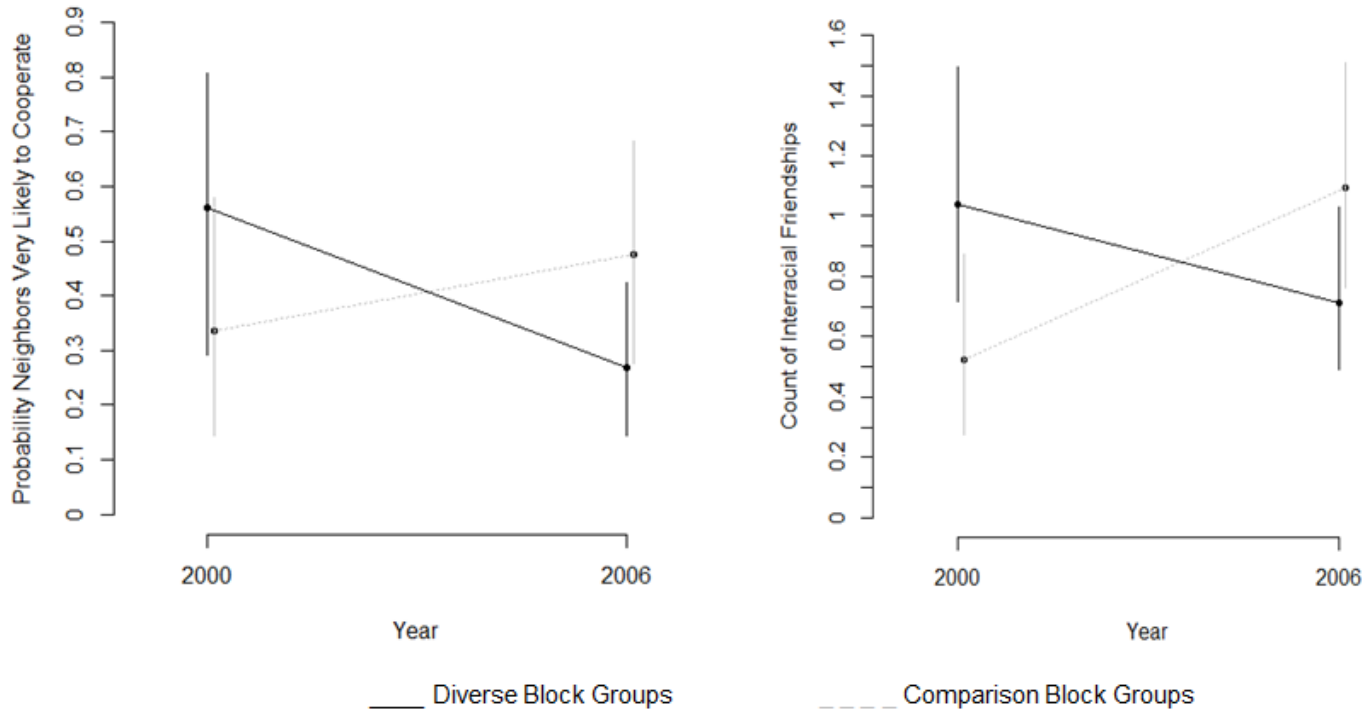


**Figure 3. Predicted Change in Social Capital in Diverse and Comparison Neighborhoods, 2000-2006.**

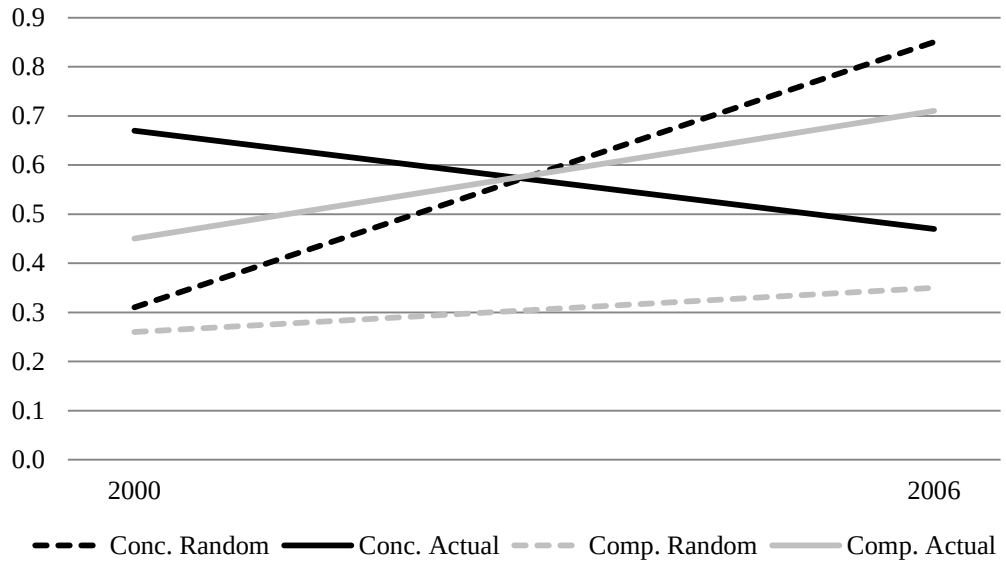


**Figure 4. Change in Interracial Ties Predicted by Random Model, versus Actual Change in Concentrated and Comparison Block Groups.** "Conc." = Concentrated, "Comp." = Comparison.

## Appendix

### Table A1. Lewiston Over Time

| | Trust Blacks | | Anti-Immigrant Sentiment | | Trust Whites | | Trust Neighbors | | General Social Trust | | Cooperate with Neighbors | | Number Interracial Ties (0-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | oprobit | | oprobit | | oprobit | | oprobit | | probit | | oprobit | | poisson | |
| Wave (2006=1) | -0.175 | | 0.610 | *** | -0.007 | | -0.214 | | -0.404 | ** | 0.113 | | 0.355 | *** |
| | (0.165) | | (0.157) | | (0.168) | | (0.173) | | (0.178) | | (0.177) | | (0.127) | |
| Gender (Female=1) | 0.075 | | -0.218 | | 0.075 | | -0.095 | | -0.071 | | -0.175 | | -0.213 | |
| | (0.169) | | (0.151) | | (0.164) | | (0.162) | | (0.173) | | (0.177) | | (0.134) | |
| Age | 0.021 | *** | 0.002 | | 0.022 | *** | 0.022 | *** | 0.008 | | 0.011 | * | -0.003 | |
| | (0.006) | | (0.005) | | (0.006) | | (0.006) | | (0.006) | | (0.007) | | (0.004) | |
| Years of Education | 0.049 | | -0.127 | *** | 0.054 | | 0.092 | *** | 0.122 | *** | 0.048 | | 0.078 | *** |
| | (0.033) | | (0.033) | | (0.034) | | (0.034) | | (0.040) | | (0.038) | | (0.027) | |
| Income | 0.000 | | 0.000 | ** | 0.000 | | 0.000 | | 0.000 | ** | 0.000 | | 0.000 | |
| | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | |
| Homeownership (=1) | 0.006 | | 0.339 | * | -0.004 | | 0.695 | *** | -0.019 | | 0.123 | | -0.349 | ** |
| | (0.185) | | (0.176) | | (0.183) | | (0.173) | | (0.199) | | (0.198) | | (0.144) | |
| Length of residence | -0.096 | | 0.108 | | -0.151 | | -0.193 | ** | -0.073 | | 0.085 | | -0.085 | |
| | (0.090) | | (0.080) | | (0.092) | | (0.089) | | (0.092) | | (0.098) | | (0.065) | |
| Constant / Cut 1 | -0.614 | | -1.784 | | -0.981 | | -0.101 | | -1.781 | ** | -0.310 | | 0.548 | |
| | (0.598) | | (0.611) | | (0.588) | | (0.636) | | (0.694) | | (0.684) | | (0.484) | |
| Cut 2 | -0.155 | | -0.976 | | -0.505 | | 0.501 | | | | 0.340 | | | |
| | (0.621) | | (0.603) | | (0.605) | | (0.658) | | | | (0.699) | | | |
| Cut 3 | 1.635 | | -0.867 | | 1.464 | | 1.655 | | | | 0.373 | | | |
| | (0.632) | | (0.601) | | (0.619) | | (0.668) | | | | (0.702) | | | |
| Cut 4 | | | -0.138 | | | | | | | | 2.041 | | | |
| | | | (0.601) | | | | | | | | (0.718) | | | |
| R-squared | 0.049 | | 0.061 | | 0.053 | | 0.118 | | 0.092 | | 0.030 | | 0.109 | |

**Table A2. Municipal Comparison: Lewiston and Auburn**

| | Trust Blacks | | Anti-Immigrant Sentiment | | Trust Whites | | Trust Neighbors | | General Social Trust | | Cooperate with Neighbors | | Number Interracial Ties (0-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | oprobit | | oprobit | | oprobit | | oprobit | | probit | | oprobit | | poisson | |
| Lewiston*Wave | 0.116 | | 0.401 | * | 0.176 | | -0.193 | | -0.132 | | 0.028 | | -0.203 | |
| | (0.247) | | (0.218) | | (0.248) | | (0.237) | | (0.255) | | (0.267) | | (0.227) | |
| Lewiston | -0.181 | | -0.038 | | -0.242 | | 0.249 | | -0.134 | | -0.161 | | 0.113 | |
| | (0.191) | | (0.156) | | (0.193) | | (0.179) | | (0.185) | | (0.215) | | (0.194) | |
| Wave (2006=1) | -0.209 | | 0.116 | | -0.108 | | 0.011 | | -0.162 | | -0.003 | | 0.588 | *** |
| | (0.192) | | (0.166) | | (0.195) | | (0.174) | | (0.196) | | (0.201) | | (0.178) | |
| Gender (Female=1) | -0.077 | | -0.096 | | -0.061 | | 0.029 | | -0.188 | | -0.031 | | -0.141 | |
| | (0.123) | | (0.111) | | (0.122) | | (0.118) | | (0.130) | | (0.131) | | (0.102) | |
| Age | 0.011 | *** | 0.006 | * | 0.013 | *** | 0.019 | *** | 0.000 | | 0.011 | ** | -0.006 | * |
| | (0.004) | | (0.004) | | (0.004) | | (0.004) | | (0.004) | | (0.004) | | (0.003) | |
| Years of Education | 0.048 | * | -0.125 | *** | 0.045 | * | 0.105 | *** | 0.140 | *** | 0.035 | | 0.065 | *** |
| | (0.024) | | (0.024) | | (0.025) | | (0.026) | | (0.029) | | (0.027) | | (0.021) | |
| Income | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | ** |
| | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | |
| Homeownership (=1) | 0.001 | | 0.183 | | -0.040 | | 0.644 | *** | -0.074 | | 0.157 | | -0.300 | ** |
| | (0.141) | | (0.132) | | (0.139) | | (0.131) | | (0.150) | | (0.149) | | (0.116) | |
| Length of residence | -0.031 | | 0.007 | | -0.032 | | -0.099 | * | 0.035 | | -0.031 | | -0.022 | |
| | (0.060) | | (0.057) | | (0.061) | | (0.058) | | (0.066) | | (0.066) | | (0.049) | |
| Constant / Cut 1 | -1.032 | | -1.908 | | -1.193 | | 0.601 | | -1.743 | *** | -0.963 | | -0.795 | ** |
| | (0.455) | | (0.456) | | (0.463) | | (0.472) | | (0.521) | | (0.560) | | (0.402) | |
| Cut 2 | -0.651 | | -1.122 | | -0.773 | | 1.263 | | | | -0.424 | | -13.054 | |
| | (0.461) | | (0.449) | | (0.462) | | (0.478) | | | | (0.558) | | (3.483) | |
| Cut 3 | 1.099 | | -1.009 | | 1.096 | | 2.456 | | | | -0.361 | | | |
| | (0.455) | | (0.447) | | (0.455) | | (0.490) | | | | (0.556) | | | |
| Cut 4 | | | -0.293 | | | | | | | | 1.292 | | | |
| | | | (0.444) | | | | | | | | (0.550) | | | |
| R-Squared | 0.021 | | 0.043 | | | | 0.106 | | 0.079 | | 0.029 | | | |

**Table A3. Regional Comparison: Androscoggin County and National Sample**

| | Trust Blacks | | Anti-Immigrant Sentiment | | Trust Whites | | Trust Neighbors | | General Social Trust | | Cooperate with Neighbors | | Number Interracial Ties (0-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | oprobit | | oprobit | | oprobit | | oprobit | | probit | | oprobit | | poisson | |
| Androscoggin*Wave | -0.194 | | 0.244 | *** | 0.011 | | 0.007 | | 0.004 | | 0.045 | | 0.187 | ** |
| | (0.129) | | (0.093) | | (0.118) | | (0.100) | | (0.120) | | (0.123) | | (0.090) | |
| Androscoggin County | 0.382 | *** | -0.259 | *** | 0.222 | ** | 0.019 | | 0.055 | | -0.133 | | -0.278 | *** |
| | (0.092) | | (0.075) | | (0.093) | | (0.079) | | (0.071) | | (0.099) | | (0.073) | |
| Wave (2006=1) | 0.103 | * | 0.170 | *** | 0.064 | | -0.017 | | -0.104 | * | -0.084 | | 0.142 | *** |
| | (0.055) | | (0.050) | | (0.056) | | (0.056) | | (0.059) | | (0.064) | | (0.034) | |
| Gender (Female=1) | 0.106 | ** | -0.098 | ** | 0.093 | ** | 0.123 | *** | 0.009 | | 0.148 | *** | -0.074 | ** |
| | (0.043) | | (0.040) | | (0.044) | | (0.044) | | (0.047) | | (0.048) | | (0.029) | |
| Age | 0.011 | *** | 0.007 | *** | 0.013 | *** | 0.012 | *** | 0.006 | *** | 0.011 | *** | -0.005 | *** |
| | (0.002) | | (0.001) | | (0.002) | | (0.002) | | (0.002) | | (0.002) | | (0.001) | |
| Years of Education | 0.042 | *** | -0.111 | *** | 0.025 | *** | 0.062 | *** | 0.092 | *** | 0.026 | ** | 0.042 | *** |
| | (0.009) | | (-0.009) | | (0.009) | | (0.010) | | (0.010) | | (0.011) | | (0.006) | |
| Income | 0.000 | ** | 0.000 | | 0.000 | *** | 0.000 | *** | 0.000 | *** | 0.000 | | 0.000 | *** |
| | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | |
| Homeownership (=1) | 0.028 | | 0.087 | | 0.102 | | 0.385 | *** | 0.073 | | 0.143 | * | -0.074 | * |
| | (0.063) | | (0.060) | | (0.063) | | (0.058) | | (0.070) | | (0.078) | | (0.044) | |
| Length of residence | -0.004 | | 0.050 | ** | 0.042 | * | 0.030 | | 0.020 | | -0.054 | * | -0.035 | ** |
| | (0.023) | | (0.024) | | (0.025) | | (0.024) | | (0.024) | | (0.031) | | (0.016) | |
| Post-rally (= 1) | -0.098 | | 0.213 | *** | -0.109 | * | -0.079 | | -0.072 | | -0.041 | | -0.032 | |
| | (0.066) | | (0.067) | | (0.066) | | (0.068) | | (0.072) | | (0.065) | | (0.041) | |
| Constant / Cut 1 | -0.751 | | -2.081 | | -0.397 | | 0.536 | | -3.091 | *** | -0.742 | | 1.266 | *** |
| | (0.695) | | (0.626) | | (0.677) | | (0.624) | | (0.668) | | (0.725) | | | |
| Cut 2 | 0.040 | | -1.236 | | 0.430 | | 1.197 | | | | -0.191 | | | |
| | (0.689) | | (0.625) | | (0.667) | | (0.623) | | | | (0.723) | | | |
| Cut 3 | 1.931 | | -1.136 | | 2.300 | | 2.358 | | | | -0.127 | | | |
| | (0.689) | | (0.625) | | (0.668) | | (0.624) | | | | (0.722) | | | |
| Cut 4 | 0.030 | | -0.449 | | | | | | | | 1.526 | | | |
| | | | (0.625) | | | | | | | | (0.721) | | | |
| R-Squared | 0.030 | | 0.044 | | 0.033 | | 0.062 | | 0.055 | | 0.024 | | (0.330) | |

Includes census tract level contextual controls for population density, percent in same town as five years earlier, percent Bachelor's degree, poverty rate, a Herfindahl index of diversity, Gini index of inequality, average commute time, percent renters, and percent citizens.

**Table A4. Neighborhood Comparison: Concentrated Block Groups and Comparison Block Groups**

| | Trust Blacks | | Anti-Immigrant Sentiment | | Trust Whites | | Trust Neighbors | | General Social Trust | | Cooperate with Neighbors | | Number Interracial Ties (0-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | oprobit | | oprobit | | oprobit | | oprobit | | probit | | oprobit | | poisson | |
| Concentrated*Wave | 0.079 | | 0.258 | | -0.259 | | -0.258 | | -0.325 | | -1.172 | ** | -1.131 | *** |
| | (0.537) | | (0.478) | | (0.550) | | (0.516) | | (0.543) | | (0.581) | | (0.423) | |
| Concentrated Block Grp. | -0.378 | | -0.090 | | 0.048 | | 0.600 | | 0.122 | | 0.629 | | 0.712 | ** |
| | (0.423) | | (0.303) | | (0.392) | | (0.403) | | (0.393) | | (0.475) | | (0.350) | |
| Wave (2006=1) | -0.987 | ** | 0.282 | | -0.370 | | -0.452 | | -0.392 | | 0.376 | | 0.756 | ** |
| | (0.419) | | (0.385) | | (0.394) | | (0.365) | | (0.406) | | (0.409) | | (0.329) | |
| Gender (Female=1) | -0.508 | | 0.003 | | -0.447 | | 0.125 | | -0.615 | ** | 0.118 | | -0.209 | |
| | (0.332) | | (0.250) | | (0.294) | | (0.270) | | (0.295) | | (0.285) | | (0.226) | |
| Age | 0.019 | ** | -0.008 | | 0.026 | *** | 0.038 | *** | 0.011 | | 0.021 | ** | 0.004 | |
| | (0.009) | | (0.008) | | (0.010) | | (0.009) | | (0.010) | | (0.009) | | (0.006) | |
| Years of Education | 0.127 | * | -0.154 | *** | 0.085 | | 0.120 | * | 0.293 | *** | 0.022 | | 0.047 | |
| | (0.069) | | (0.057) | | (0.066) | | (0.062) | | (0.069) | | (0.064) | | (0.045) | |
| Income | 0.000 | | 0.000 | | 0.000 | | 0.000 | *** | 0.000 | | 0.000 | | 0.000 | |
| | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | |
| Homeownership (=1) | -0.238 | | 0.372 | | -0.393 | | 0.101 | | -0.483 | | 0.397 | | -0.124 | |
| | (0.346) | | (0.282) | | (0.327) | | (0.319) | | (0.338) | | (0.359) | | (0.251) | |
| Length of residence | 0.002 | | 0.153 | | 0.038 | | -0.284 | ** | 0.044 | | -0.093 | | -0.133 | |
| | (0.121) | | (0.108) | | (0.127) | | (0.117) | | (0.132) | | (0.126) | | (0.095) | |
| Constant / Cut 1 | -1.007 | | -2.227 | | -0.811 | | 0.589 | | -3.471 | *** | -0.477 | | -0.852 | |
| | (1.080) | | (0.890) | | (1.020) | | (0.960) | | (0.989) | | (1.124) | | (0.710) | |
| Cut 2 | -0.491 | | -1.436 | | 1.993 | | 1.573 | | | | -0.352 | | | |
| | (1.008) | | (0.873) | | (0.983) | | (0.933) | | | | (1.137) | | | |
| Cut 3 | 1.637 | | -1.352 | | | | 3.002 | | | | -0.243 | | | |
| | (1.045) | | (0.872) | | | | (0.943) | | | | (1.133) | | | |
| Cut 4 | | | -0.672 | | | | | | | | 1.676 | | | |
| | | | (0.861) | | | | | | | | (1.109) | | | |
| R-Squared | 0.119 | | 0.049 | | 0.094 | | 0.185 | | 0.161 | | 0.073 | | 0.055 | |

**Table A5. Effect of 2010 Percent Block Group Black on Social Capital Indicators**

| | Trust Blacks | | Anti-Immigrant Sentiment | | Trust Whites | | Trust Neighbors | | General Social Trust | | Cooperate with Neighbors | | Number Interracial Ties (0-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | oprobit | | oprobit | | oprobit | | oprobit | | probit | | oprobit | | poisson | |
| % Black 2010*Wave | -3.338 | *** | 0.764 | | -2.113 | ** | -2.593 | *** | -3.463 | ** | -2.506 | *** | -2.323 | ** |
| | (0.666) | | (0.733) | | (0.999) | | (0.684) | | (1.440) | | (0.954) | | (0.897) | |
| % Black 2010 | 1.407 | * | 0.306 | | 2.241 | *** | 1.688 | ** | 1.621 | * | 1.294 | | 1.313 | ** |
| | (0.745) | | (1.291) | | (0.786) | | (0.735) | | (0.949) | | (1.313) | | (0.600) | |
| Wave (2006=1) | -0.042 | | 0.433 | *** | 0.077 | | 0.049 | | -0.030 | | 0.034 | | 0.403 | *** |
| | (0.125) | | (0.091) | | (0.134) | | (0.095) | | (0.118) | | (0.119) | | (0.095) | |
| Gender (Female=1) | -0.036 | | -0.106 | | -0.034 | | 0.013 | | -0.193 | ** | 0.069 | | -0.159 | * |
| | (0.099) | | (0.091) | | (0.099) | | (0.090) | | (0.098) | | (0.097) | | (0.090) | |
| Age | 0.012 | *** | 0.006 | ** | 0.017 | *** | 0.014 | *** | 0.002 | | 0.010 | *** | -0.007 | *** |
| | (0.004) | | (0.003) | | (0.004) | | (0.005) | | (0.004) | | (0.003) | | (0.002) | |
| Years of Education | 0.039 | ** | -0.120 | *** | 0.030 | * | 0.095 | *** | 0.129 | *** | 0.049 | ** | 0.049 | *** |
| | (0.018) | | (0.021) | | (0.018) | | (0.026) | | (0.024) | | (0.021) | | (0.016) | |
| Income | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | | 0.000 | ** |
| | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | |
| Homeownership (=1) | 0.049 | | 0.189 | * | 0.047 | | 0.464 | *** | 0.008 | | 0.099 | | -0.165 | |
| | (0.113) | | (0.111) | | (0.120) | | (0.096) | | (0.116) | | (0.170) | | (0.104) | |
| Length of residence | -0.043 | | 0.044 | | -0.048 | | -0.043 | | 0.026 | | -0.025 | | -0.043 | |
| | (0.043) | | (0.050) | | (0.050) | | (0.046) | | (0.048) | | (0.062) | | (0.042) | |
| Median HH Income 2000 | 0.000 | | 0.000 | | 0.000 | | 0.000 | *** | 0.000 | | 0.000 | | 0.000 | |
| | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | | (0.000) | |
| % Ch. Med. HH Inc. | -0.052 | | -0.358 | | 0.131 | | 0.517 | * | -0.071 | | -0.196 | | 0.025 | |
| | (0.274) | | (0.304) | | (0.290) | | (0.311) | | (0.296) | | (0.280) | | (0.276) | |
| Constant / Cut 1 | -1.048 | | -1.705 | | -0.963 | | 0.823 | | -1.991 | *** | -0.510 | | -0.255 | |
| | (0.374) | | (0.330) | | (0.354) | | (0.434) | | (0.433) | | (0.412) | | (0.392) | |
| Cut 2 | -0.596 | | -0.930 | | -0.501 | | 1.412 | | | | 0.010 | | | |
| | (0.382) | | (0.322) | | (0.360) | | (0.439) | | | | (0.392) | | | |
| Cut 3 | 1.163 | | -0.833 | | 1.440 | | 2.632 | | | | 0.051 | | | |
| | (0.370) | | (0.321) | | (0.340) | | (0.464) | | | | (0.391) | | | |
| Cut 4 | | | -0.093 | | | | | | | | 1.596 | | | |
| | | | (0.317) | | | | | | | | (0.386) | | | |
| R-squared | 0.027 | | 0.046 | | 0.033 | | 0.095 | | 0.073 | | 0.028 | | | |