

Willingness to Fund Public Education in a Rural, Retirement Destination County

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Retiree recruitment is a burgeoning economic development strategy among rural communities despite uncertainty over whether later-life migrants will bring with them “Gray Gold” in the form of economic development or “Gray Peril” in the form of a reduced willingness to support the provision of local public services such as education. The results of a survey regarding support for a hypothetical increase in education funding in a rural, retirement destination county in Tennessee indicates that residents who migrated to the county at or after retirement were not less, but more, supportive of local education funding than other residents. The results also suggest that this support was motivated by both altruism and self-interest. Previous experience in higher-funding jurisdictions was also a key factor in explaining migrant willingness to support increased expenditures. Finally, as a check on the validity of the survey instrument, a comparison is made between the aggregate survey results and the results of three county-wide referenda on school funding.

Introduction

Rural communities are increasingly focusing on retiree recruitment as a means of economic development (Murphy, 2005; Reeder, 1998; Vestal, 2006). The “Baby Boomer” generation currently reaching retirement age makes an attractive target as it accounts for over 28 percent of the U.S. population (U.S. Census Bureau, 2006) and has accumulated substantial savings due to its historically high incomes (Congressional Budget Office, 2004). For example, an estimated 400,000 retirees each year—with an average of \$320,000 to spend on a new home—will choose to relocate beyond their state borders over the next two decades (Howell, 2006). The South and West continue to be popular destinations for these migrants (He & Schachter, 2003), although more are choosing to locate in areas outside traditional retirement areas in Florida and Arizona (Vestal,

2006). Tennessee, for example, is experiencing substantial later-life migration and ranked seventh nationally in net migration of people aged 65 or older from 1995 to 2000 (He & Schachter, 2003). One factor driving Tennessee’s increasing popularity as a retirement destination is the “half-back” phenomenon; later-life migrants from the Northeast and Midwest who originally moved to Florida change their minds and move half-way back.

However, the migration of retirees into rural communities has raised concerns over the continued provision of local public services in these communities. For some services, the concern is one of congestion. Namely, would an influx of retirees increase demand for public services and limit the access of long time residents to these services? For other services, the concern is over the effect later-life migration might have on the level of the service provided. Education provides perhaps the best example of the latter. Would later-life migrants, with little or no connection to the local public school system, oppose increased or continued funding of the system to either reduce their tax burden or increase the provision of public services which offer them more direct benefits?

Scrutiny of these concerns in the academic literature is approaching its fourth decade and shows no signs of abating. To the contrary, the flood of Baby Boomers currently reaching retirement age and the increasing interest in pursuing retirees as a means towards economic development

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suggests that there is a growing audience for this research among policymakers and academics. Retiree recruitment is particularly appealing to local governments because it has the potential to increase property and sales tax revenues (“Gray Gold”) without engendering equivalent increases in education expenditures, which typically command the largest share of local government expenditures.¹ However, while attracting later-life migrants is likely to increase a community’s ability to fund education, its effect on willingness to fund education is less clear. Without school-age children, retirees may lack sufficient motivation to support public education funding (“Gray Peril”). However, childless households may support education funding out of altruism (e.g., Plutzer & Berkman, 2005; Ponza, Duncan, Corcoran, & Groskind, 1988), or even self-interest if they believe that the quality of local schools will be capitalized into their home values (Brunner & Balsa, 2004; Harris, Evans, & Schwab, 2001; Hilber & Mayer, 2004). The literature examining the relationship between seniors and education funding is extensive, but mixed results suggest that untangling this complex and possibly evolving relationship requires more work.

This paper aims to shed light on this relationship by examining differences in support for a hypothetical increase in education funding and the factors motivating this support among long-time residents of a community (“Locals”) and those who moved there either at or after retirement (“In-Migrant Retirees” or “IMRs”). Long-distance amenity-driven migration is, in many ways, a selection process by which the healthier and wealthier are more likely to relocate to communities with amenities and policies most suitable to their preferences. Thus, much of later-life migration is to the rural South in search of a combination of abundant natural amenities, low taxes, and affordable housing. As a result, there are often significant differences between IMRs and Locals, not only with respect to school-age children, but also in education, income, and other demographic characteristics, as well as in expectations about tax and public service levels (Serow, 2003). Further, IMRs, at least initially, are less likely to have strong ties to the local community. As a result of these differences, the preferences of IMRs and Locals for public service provision may also be quite different.

This research uses primary survey data to examine the various community factors and personal characteristics influencing support for a hypothetical increase in education funding among Locals and IMRs in Cumberland County, a rural Tennessee county that has been a popular retiree destination since the 1960s. The presentation of this research begins with a discussion of the broader academic debate

over support for public education funding by seniors in the next section of the paper. Following that is an overview of Cumberland County and a discussion of the methods and procedures used to collect and analyze the survey responses. Presentation of the results, including the results of probit regressions of responses to a referendum-type question on a hypothetical increase in education funding, follows. The paper concludes with a discussion of the results and their implications for rural communities presently attracting, or considering policies designed to attract, large numbers of later-life migrants.

Literature Review

Much of the research into later-life migration focuses either on the causes or correlates of such migration, or on the effects of such migration on the sending or receiving locales (or on the migrants themselves). An early framework for understanding the decision of seniors to relocate is provided by Wiseman (1980). The extensive theoretic and empirical literature built on this framework has been summarized by Walters (2002). This literature commonly identifies three different types of later-life migration: (1) the migration of healthy seniors over long distances in search of communities that will provide the amenities and opportunities to fulfill their active lifestyles; (2) short-distance moves designed to accommodate changing health, familial, or financial conditions; and (3) moves to access family or institutional care-givers driven by concerns over failing health (Warnes, 1992; Wiseman, 1980). This study is primarily concerned with long-distance amenity migration, although return migration or institutionalization of seniors as their health begins to deteriorate is relevant to the extent that it alters the population of later-life migrants living in the community.

Numerous studies have examined the effect of long-distance amenity migration on local economies (Longino, 2001, and Serow, 2003, provide comprehensive reviews) and many have considered the effects from a rural economic and community development perspective (e.g., Aday & Miles, 1982; Hodge, 1991; Mullins & Rosentraub, 1992; Rowles & Watkins, 1993; Stallmann, Deller, & Shields, 1999). In general, this research suggests that later-life migration positively impacts local government finances in the short run, although the broader economic impacts are less clear. While the findings of these studies are specific to communities, time periods, and data sets, several overarching themes emerge. Later-life migrants to non-metropolitan counties tend to be better educated, married, and have higher incomes compared to both the “aging in place” (Jones, Kandel, & Parker, 2007) and native residents more generally (Park, Clark, Lambert, & Wilcox, 2007). These later-life migrants can stimulate economic and fiscal growth, bringing intangible assets such as professional

¹ For example, counties in Tennessee spend about 56% of their current (non-utility) operating expenditures on K-12 education (U.S. Census Bureau, 2004).

skills, capital assets, and potential volunteer services which can help finance business start-ups and expansions, create jobs, and increase the overall quality of life (Galston & Baehler, 1995). However, although later-life migrants may make significant expenditures in local economies (Haas, 1990, p. 388), several studies suggest that these expenditures primarily create low skill, low wage, service sector jobs (e.g., Beale & Fuguitt, 1990; Day & Barlett 2000; Glasgow & Reeder, 1990; Reeder & Glasgow, 1990).

Research into the economic impacts of later-life migration has been complemented by research into the effects of this migration on the provision of public services. The combination of retirees' lack of an obvious self-interested motive for supporting education and other public programs, the size and mobility of the Baby Boomer generation, and the higher propensity of older Americans to vote has fueled speculation that communities with high numbers of seniors would face a Gray Peril in the form of an influential block of voters uninterested in financing public expenditures, particularly those for education (e.g., Berkman & Plutzer, 2004; Button, 1992; Button & Lowery, 1990; Button & Rosenbaum, 1989; Duncombe, Robbins, & Stonecash, 2003; Longino, 1988; Rosenbaum & Button, 1989). These concerns have stimulated extensive analysis of the relationship between age and/or retirement status and funding for education and other public services.

Empirical analyses of this relationship have generally employed three approaches. The first has been a series of district, county, or state-level cross-sectional analyses of the relationships between per pupil educational expenditures (or spending on other public services) and the share of elderly citizens or later-life migrants in the local population (e.g., Berkman & Plutzer, 2004; Button & Rosenbaum, 1990; Fernandez & Rogerson, 2001; Harris et al., 2001; Ladd & Murray, 2001; Miller, 1996; Mullins & Rosentraub, 1992; Poterba, 1997; Reeder & Glasgow, 1990; South, 1991). The second approach focuses on the relationship between the fate of citizen referenda to increase public expenditures and the share of the population who were either retired or at or near retirement age (e.g., Button, 1992; Button & Rosenbaum, 1989; Lentz, 1999; MacManus, 1997; Muir & Schneider, 1999; Romer, Rosenthal, & Munley, 1992; Rosenbaum & Button, 1989; Tedin, Matland, & Weiher, 2001). Finally, there are a large number of survey-based studies analyzing the extent to which age or retirement status is associated with opinions or preferences regarding funding for public education or other public services (e.g., Ahlin & Johansson, 2001; Beck & Dye, 1982; Bergstrom, Rubinfeld, & Shapiro 1982; Brokaw, Gale, & Merz, 1990; Brunner & Balsdon, 2004; Chew, 1992; Citrin, 1979; Deller & Walzer, 1993; Duncombe et al., 2003; Inman, 1978; Lankford, 1985; Plutzer & Berkman, 2005; Ponza et al.,

1988; Rosenbaum & Button, 1989; Rubinfeld, 1977; Stair, Rephann, & Heberling, 2006).

Generally speaking, the results of these studies fail to provide convincing evidence either for or against the Gray Peril hypothesis. Some provide evidence supporting the notion that elderly or retired individuals are less supportive of local funding for public education (e.g., Brunner & Balsdon, 2004; Button, 1992; Chew, 1992; Fernandez & Rogerson, 2001; Harris et al., 2001; Inman, 1978; Poterba, 1997), while others found evidence that was inconclusive or even contradicted the hypothesis (e.g., Berkman & Plutzer, 2004; Brokaw et al., 1990; Button & Rosenbaum, 1989; Duncombe et al., 2003; Ladd & Murray, 2001; Rubinfeld, 1977).

What emerges from this extensive body of research is a more complex picture of the relationship between seniors and support for education funding than the conventional Gray Peril hypothesis suggests. In general, support for public services tends to decrease with age, but evidence from survey questions repeated over several decades suggests that the effect is due not to aging but to differences among age cohorts or generations (Chew, 1992; Plutzer & Berkman, 2005). Further, any negative correlation between age and support for education funding may be, in the context of later-life migrants relocating to rural communities, countered by other characteristics that are positively associated with such support, such as higher levels of education and income (e.g., Button & Rosenbaum, 1989; Rubinfeld, 1977). In addition, these migrants may be more receptive to increased funding levels if they were accustomed to higher levels of taxes and public service provision in the communities from which they migrated (e.g., Appleton & Williams, 1986; Beck & Dye, 1982). Further, the behavior of public school officials or the perception of their effectiveness may influence the extent to which these migrants are willing to support increased education funding (Brokaw et al., 1990; Duncombe et al., 2003; Lankford, 1985).

An Overview of Cumberland County

This study focuses on Cumberland County, Tennessee. Cumberland County is a rural county that has been a retirement destination since the 1960s, yet is located outside of traditional retirement areas such as Florida or Arizona. Thus, Cumberland County is a forerunner of the wave of later-life migration now rolling across the southern Appalachians (Culbertson et al. 2008) and other parts of the country. The flow of later-life migrants into Cumberland County began in the 1960's with the establishment of Lake Tansi Village, a 5,000 acre resort and residential development located just south of Crossville, the County seat. In 2006, approximately 3,200 people lived in Lake Tansi Village,

Table 1

Demographic Characteristics of Cumberland County Compared to Means of Reference Sets of Counties

Demographic Measure	Cumberland County (N=1)	Nation ^a (N=2970 to 2973)	Region ^b (N=1286 to 1288)	State (N=95)	Retirement ^c (N=415)
Median age	42.50	37.35**	36.69**	37.45**	39.08**
Average household size	2.37	2.54**	2.56**	2.49**	2.53**
Percent change in population 1990 to 2000	29.70	9.48**	11.84**	16.72**	26.48**
Percent of population aged 18-64 with college degree	11.02	15.85**	13.46**	11.74	16.48**
Percent of population aged 65 and over with college degree	17.43	11.00**	10.45**	8.26**	13.91**
Percent of households with wage or salary income	63.55	72.92**	71.88**	72.45**	71.15**
Percent of households with Social Security income	41.36	30.65**	30.72**	30.54**	32.32**
Percent of households with retirement income	27.12	16.76**	16.96**	16.88**	20.17**
Median home value (\$)	91,400	83,190**	72,684**	80,477**	103,124**
Median household income (\$)	30,901	35,069**	32,235**	32,578*	36,643**
Median household income, householder aged 65-74 (\$)	30,802	27,195**	24,886**	23,689**	29,194**
Median household income, householder aged 75 or over (\$)	20,042	19,130**	17,427**	16,231**	20,649*

^a Excludes AK, HI, and VA.

^b U.S. Census South region excluding VA (i.e., AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, and WV).

^c Retirement destination counties according to 2004 county typology code published by U.S. Department of Agriculture's Economics Research Service (excludes AK, HI, and VA).

** , * Reject hypothesis that mean is equal to value for Cumberland County at 99%, 95% confidence level (*t* test).

and about 80% of them were In-Migrant Retirees. In 1970, a similar phenomenon began about 10 miles northeast of Crossville with the establishment of 12,700 acre Fairfield Glade by a residential resort developer. In 2006, Fairfield Glade's population was about 6,500, nearly all of whom were IMRs. In addition to the IMRs who settled in Lake Tansi Village and Fairfield Glade, numerous others have settled elsewhere in the county. It has been estimated that IMRs now represent approximately 22% of the County's 50,000 residents (Park et al., 2007).

This prolonged in-migration² has dramatically altered Cumberland County. A quick comparison of selected demographic and economic measures between Cumberland and national, regional and state county averages suggests the extent of this transformation (Table 1). This comparison also suggests some of the reasons why so many rural

² Cumberland County is one of only 129 U.S. counties to be listed as a retirement destination county in all three of the county typology codes (1979, 1989, and 2004) published by the U.S. Department of Agriculture's Economic Research Service.

counties desire to emulate Cumberland County's success in recruiting later-life migrants.³ In general, it appears that IMRs have substantially contributed to Cumberland County's ability to fund public education by dramatically increasing the tax base. For example, from 1970 to 2005, Cumberland County's real property assessment per student grew about 50% faster than in other similar rural Tennessee counties (Park et al., 2007). However, the increased tax base seems to have been primarily translated into low tax rates, as opposed to an increase in public education funding, as operating expenditures per student grew slower in Cumberland County compared to these same counties over the same time period (Park et al., 2007).⁴

Methods and Procedures

Survey Design and Methodology

The data used in this study were collected in a telephone survey of Cumberland County residents. The survey was designed to learn about a variety of issues related to IMRs migrating to Cumberland County and included sections that asked respondents about their: (a) decision to reside (or remain) in Cumberland County, (b) involvement in the local community, (c) perceptions and opinions of local public services, (d) views on the effects of IMRs on Cumberland County, (e) spending patterns, (f) interaction with the local healthcare system, and (g) demographic characteristics. To analyze the extent to which respondents would be willing to provide funding for public education, respondents were also asked to indicate whether or not they would be willing to support a hypothetical 5% increase in the County property tax rate, if the increase were supported by the County Commission and dedicated to the County public school system. The survey instrument was developed over a five month period and included four focus group discussions with Cumberland County residents along with two formal pre-tests of draft survey instruments.⁵

The survey sample was obtained through a combination of stratified random and quota sampling. The intent of the survey design was to ensure representation of four different

household subgroups: IMRs residing in Fairfield Glade, IMRs residing in Lake Tansi Village, IMRs residing elsewhere in the County, and Locals. The sample was identified through a combination of randomly selected residential telephone numbers from a telephone book (Lake Tansi Village), random digit dialing in two distinct geographic areas—Fairfield Glade and the remainder of the county—and a series of screening questions to distinguish between IMRs and Locals. To qualify as an IMR, respondents must have moved to Cumberland County at or after retirement. IMRs who did not spend a minimum of three months out of the year in Cumberland County were excluded from the sample. To qualify as a Local, respondents must have lived in Cumberland County for at least ten years and must not have moved there at or after retirement. The survey was implemented April through May, 2006, and resulted in 706 completed questionnaires out of 3,969 eligible numbers (for a response rate of 17.9%), distributed as follows: 256 Locals, 204 Fairfield Glade IMRs, 146 Lake Tansi Village IMRs, and 100 other IMRs. This distribution was based on estimates of the total population of households in each subgroup in 2006 (derived from U.S. Census Bureau estimates and discussions with Fairfield Glade, Lake Tansi and Cumberland County officials) and was designed to promote both the statistical accuracy of projections from survey results to subgroup populations and testing for statistically significant differences between subgroups. Survey weights were assigned to each stratum (to aggregate the subgroups into IMRs and Locals) based on the estimated population in each subgroup and the number of individuals actually surveyed in each subgroup (Table 2).

Assessing how representative the survey sample is of Cumberland County residents is difficult due to the time lag between the survey and the 2000 Census. However, assuming the 2000 Census accurately represents the County population at the time of the survey, the sample appears to be older (survey mean of 55.9 compared to population mean of 41.5), more male (51.2% of survey respondents compared to 48.6% of the population), from smaller households (survey mean of 2.37 compared to population mean of 2.43) and more highly educated with higher incomes and home values than the populations they represent (Figure 1). These differences are due, in part, to sampling weights being based on the estimated population distribution among Locals and IMRs in 2006 as opposed to 1999 (when the Census was taken). The survey sample is weighted more towards IMRs because there was a considerable influx of IMRs from 2000 to 2006. In addition, inflation may help explain the sample's higher incomes and home values. Whether these factors are enough to explain the apparent under-representation of Cumberland County's poorest and least educated residents is impossible to say.

³ More detailed analyses of how Cumberland County has changed during this period of in-migration relative to similar rural counties in Tennessee and of the economic and financial effects of IMRs on Cumberland County are provided by Park et al., 2007.

⁴ State education funding equalization policies complicate this story somewhat, as per pupil local government contributions to education grew about as fast in Cumberland County as it did in peer counties. Nevertheless, it is clear that the ability to fund education in Cumberland County grew more rapidly than did actual funding, relative to peer counties (Park et al., 2007).

⁵ The survey instrument is available from the authors upon request.

Table 2
Cumberland County Population, Survey Sample, and Survey Weights

Group	Residence	N_h (Total households)	n_h (Sampled households)	w_j (Weight)
IMRs	Fairfield Glade	3,528	204	17.29
	Lake Tansi Village	1,372	146	9.40
	Elsewhere	1,000	100	10.00
Locals	Fairfield Glade	64	13	4.92
	Lake Tansi Village	313	64	4.89
	Elsewhere	4,133	44	93.93
	Crossville	10,981	135	81.34
Total		21,391	706	

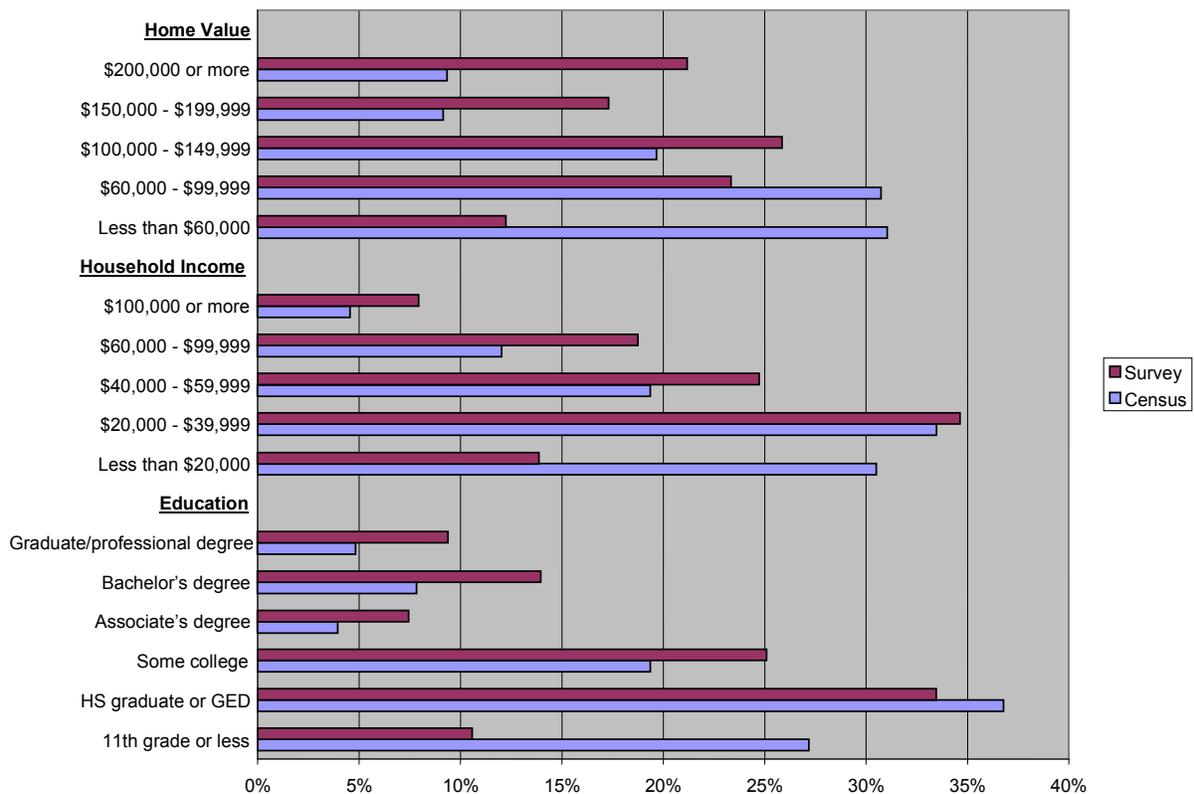
Analysis of Survey Responses

Variable names and descriptions are provided in Table 3 and variable means are reported in Table 4. Variable means

are calculated with the survey weights (Table 2) as follows. If y_j is the value of a variable for the j th sampled individual, where $j = 1, \dots, m$, then the weighted population mean (\bar{y}) is estimated as:

Figure 1

Comparison of Survey and Census Distributions for Home Values, Household Income and Educational Attainment



$$\bar{y} = \frac{\sum_{j=1}^m w_j y_j}{\sum_{j=1}^m w_j} \quad (1)$$

where w_j is the weight attached to the j th sampled individual. The weights for each individual in a single sample stratum h are equal to the total population in each stratum (N_h) divided by the number of sampled individuals from that stratum (n_h) (Table 2).

Variable means are useful for both characterizing survey respondents and examining differences between IMRs and Locals. The statistical significance of differences in group means was estimated with a Wald test adjusted to account for the survey design. Means testing with a Wald test typically produces an F statistic equal to the Wald test statistic (Greene, 1993) with the numerator degrees of freedom equal to the set of hypotheses being tested and the denominator degrees of freedom equal to the number of observations minus one. The adjustment uses an approximate F statistic:

$$F = \frac{(d-k+1)W}{kd} \quad (2)$$

where d equals the total number of observations less the total number of strata, k is the number of test dimensions, and W is the Wald test statistic (StataCorp, 2005).

Probit regressions supplement the univariate comparisons between Locals and IMRs.⁶ Specifically, respondents were asked to indicate whether they would support or oppose a 5% increase in the County property tax rate to increase funding for County schools if the increase was recommended by the County Commission (*tax_vote*). Responses to this question were analyzed with three probit regressions, varying in both respondents and explanatory variables. An all-respondent regression was estimated on a core set of variables (*imp_tax*, *imp_hous*, *welcome*, *com_vol*, *edu_vol*, *vote_last*, *res_lgth*, *age*, *hhsz*, *educ*, *employ*, *male*, *hhinc*, *own_hoval*) plus a dummy variable indicating whether the respondent was an IMR or a Local (*IMR*). A Local-only regression was estimated with the core set of variables and a pair of additional Local-only

⁶ Logit regression would be an alternative approach to modeling IMR and Local preferences. In general, the logistic and normal (probit) data sampling processes are symmetric around zero, and both lead to models whose representations of probabilities are bounded between zero and one (Mittelhammer, Judge, & Miller, 2000). The tails of the logistic distribution are slightly fatter than that of the normal, denoting a scaling difference. By multiplying the probit estimates by 1.6, logit and probit results are comparable (Wooldridge, 2000). We compared the model fit between the logit and probit specifications, and found that the probit model better fit the data.

variables (*imp_sch* and *Crossville*). An IMR-only model was estimated with the core variables plus five additional IMR-only variables (*imr_ffg*, *imr_ltv*, *st_spend*, *metro*, and *months*). Maximum likelihood was used to estimate the models. The probit log likelihood functions were weighted with the survey weights to attend to the survey design, yielding the log pseudolikelihood:

$$\max_{\beta} \ln L = \sum_{j \in S} w_j \ln \Phi(x'_j \beta) + \sum_{j \notin S} w_j \ln [1 - \Phi(x'_j \beta)] \quad (3)$$

where S is the set of all observations such that $y_j \neq 0$, $\Phi(\cdot)$ is the standard normal cumulative distribution function, and w_j is a sampling weight (StataCorp, 2005). Finally, differences between the parameter estimates for the core set of variables in the IMR- and Local-only regression equations were tested using a Wald test, adjusted to reflect the survey weighting.

County-Wide Citizen Referenda

Given the hypothetical nature of the survey results, a comparison is made between the aggregate survey results and three citizen referenda in Cumberland County. The first two referenda, held in 1998 and 1999, were to increase the local-option sales tax by 0.5% to increase funding for the public school system. The 1998 referendum, which was held as part of a general election, failed with only 41.4% of the votes cast in favor of the increase. The 1999 referendum was the only issue in a special election ballot and passed with 61.3% of the vote. The third referendum, held in February 2008, was to implement a \$26 per vehicle “wheel tax.” The wheel tax was defeated with only 17.8% of the voters supporting the initiative. The concentration of IMRs within the two retiree developments—Fairfield Glade and Lake Tansi Village—provides a somewhat limited ability to examine how the level of support for the referenda among the IMR population may have differed from that of Locals. Thus the referenda results are divided into three geographic areas—Fairfield Glade, Lake Tansi Village, and the rest of the County. The Fairfield Glade precinct is likely to consist almost entirely of IMRs residing in Fairfield Glade, as the precinct border is closely aligned with Fairfield Glade’s border, and there are few non-IMRs residing in Fairfield Glade. The Lake Tansi Village precinct is a more complicated story. The precinct border strays from the Lake Tansi Village border and an estimated 20% of Lake Tansi Village residents are non-IMRs. Thus, the referenda results provide a limited “real world” yardstick against which the aggregate responses to the survey question on a hypothetical increase in education funding can be compared.

Results

Table 3

Variable Names and Descriptions

Attitude and Opinion Variables

<i>sat_ed</i>	Level of satisfaction with local school system (1-5)
<i>tax_vote</i>	Support for property tax increase to fund public education (1 if support, 0 otherwise)
<i>imp_tax</i>	Importance of tax level to decision to reside in County (1-5)
<i>imp_hous</i>	Importance of house prices to decision to reside in County (1-5)

Community Involvement and Activity Variables

<i>com_vol</i>	Perform volunteer work within local community (1 if yes, 0 otherwise)
<i>edu_vol</i>	Perform volunteer work within local school system (1 if yes, 0 otherwise)
<i>reg_vote</i>	Registered to vote in County (1 if yes, 0 otherwise)
<i>vote_last</i>	Voted in County's most recent election (1 if yes, 0 otherwise)

Demographic Variables

<i>IMR</i>	IMR or Local (1 if IMR, 0 otherwise)
<i>age</i>	Age (in years)
<i>res_lgth</i>	Length of residence in County (in years)
<i>hhsiz</i>	Household size
<i>educ</i>	Educational attainment (1 = 8th grade or less, 2 = 9th-11th grade, 3 = high school graduate or GED, 4 = some college or vocational training, 5 = associate's degree, 6 = bachelor's degree, 7 = graduate or professional degree)
<i>employ</i>	Employment status (1 if employed, 0 otherwise)
<i>male</i>	Gender (1 if male, 0 otherwise)
<i>hhinc</i>	Pre-tax household Income from all sources (1 = less than \$10,000, 2 = \$10,000 to \$19,999, 3 = \$20,000 to \$29,999, 4 = \$30,000 to \$39,999, 5 = \$40,000 - \$49,999, 6 = \$50,000 to \$59,999, 7 = \$60,000 to \$74,999, 8 = \$75,000 to \$99,999, 9 = \$100,000 to \$149,999, 10 = \$150,000 or more)
<i>own_rent</i>	Own or rent home (1 if own, 0 otherwise)

Demographic Variables

<i>hoval</i>	Home value (1 = less than \$40,000, 2 = \$40,000 to \$59,999, 3 = \$60,000 to \$79,999, 4 = \$80,000 to \$99,999, 5 = \$100,000 to \$124,999, 6 = \$125,000 to \$149,999, 7 = \$150,000 to \$174,999, 8 = \$175,000 to \$199,999, 9 = \$200,000 to \$249,999, 10 = \$250,000 to \$299,999, 11 = \$300,000 or more)
<i>own_hoval</i>	Interaction between <i>own_rent</i> and <i>hoval</i>

Local Only Variables

<i>imp_sch</i>	Importance of improving schools and education system (1-5)
<i>Crossville</i>	Reside within Crossville city limits (1 if yes, 0 otherwise)

In-Migrant Retiree Only Variables

<i>IMR_ffg</i>	Reside in Fairfield Glade (1 if yes, 0 otherwise)
<i>IMR_ltv</i>	Reside in Lake Tansi Village (1 if yes, 0 otherwise)
<i>welcome</i>	Extent to which believe that IMRs made to feel welcome (1-5)
<i>friends</i>	More than 90% of friends are IMRs (1 if yes, 0 otherwise)
<i>metro</i>	Reside in metropolitan county at time of retirement (1 if yes, 0 otherwise)
<i>months</i>	Months out of year live in County (in months)
<i>st_spend</i>	2001-02 total per capita state and local education expenditures for the state in which respondent resided at time of retirement (\$)

Means Comparisons between IMRs and Locals

Differences between variable means for Locals and IMRs are reported in Table 4. IMRs were, on average, about 13 years older than Locals. The average IMR lived in Cumberland County for a little over 8 years, whereas Locals had lived there for (on average) 33 years. IMRs also had about 3/4 as many household members (on average) as Locals, and were less likely to have a job compared

to Locals (16.4% and 51.6%, respectively). On the other hand, IMRs had more years of formal education (roughly 15.0 compared to 12.9 for Locals) and higher incomes (\$56,710 for IMRs compared to \$48,947 for Locals). Home ownership was more prevalent among IMRs compared to Locals (97.6% and 92.6%, respectively). On average, home values were higher for IMRs than Locals (\$198,023 and \$129,414, respectively).⁷ Almost half (48%) of the IMRs

⁷ Mean values for educational attainment, household

Table 4

Weighted Means of Variables and Univariate Comparisons between Locals and IMRs

Variable	All Respondents			Locals			IMRs		
	Mean	S.E. ¹	N	Mean	S.E.	N	Mean	S.E.	N
<i>sat_ed</i>	3.376	0.074	533	3.511***	0.091	236	2.836	0.064	297
<i>tax_vote</i>	0.538	0.030	603	0.510**	0.039	232	0.623	0.025	371
<i>imp_tax</i>	3.844	0.074	696	3.699***	0.098	253	4.252	0.052	443
<i>imp_hous</i>	3.680	0.757	692	3.566***	0.101	248	3.995	0.052	444
<i>com_vol</i>	0.538	0.028	704	0.526	0.037	256	0.572	0.023	448
<i>edu_vol</i>	0.134	0.020	704	0.151**	0.026	256	0.086	0.014	448
<i>reg_vote</i>	0.932	0.014	705	0.933	0.018	256	0.929	0.012	449
<i>vote_last</i>	0.836	0.020	641	0.866***	0.026	235	0.750	0.022	406
<i>res_lgth</i>	32.724	0.996	704	41.500***	1.347	254	8.126	0.295	450
<i>age</i>	55.883	0.778	693	51.404***	1.042	254	68.700	0.385	439
<i>hhsz</i>	2.425	0.071	706	2.621***	0.096	256	1.873	0.025	450
<i>educ</i>	4.044	0.080	702	3.702***	0.106	254	5.001	0.068	448
<i>employ</i>	0.516	0.026	705	0.641***	0.035	256	0.164	0.017	449
<i>male</i>	0.512	0.028	706	0.509	0.036	256	0.519	0.024	450
<i>hhinc</i>	4.896	0.145	538	4.740***	0.182	226	5.464	0.115	312
<i>own_rent</i>	0.926	0.015	704	0.909***	0.021	257	0.976	0.007	448
<i>hoval</i>	5.851	0.157	631	5.201***	0.212	224	7.592	0.107	407
<i>own_hoval</i>	5.397	0.167	664	4.702***	0.221	245	7.399	0.118	419
<i>welcome</i>	3.907	0.060	687	3.920	0.079	248	3.872	0.057	439
<i>IMR</i>	0.262	0.000	706						
<i>imp_sch</i>				3.871	0.101				
<i>Crossville</i>				0.215	0.000				
<i>IMR_ffg</i>							0.5980	0.000	450
<i>IMR_ltv</i>							0.2325	0.000	450
<i>friends</i>							0.866	0.014	435
<i>metro</i>							0.762	0.021	413
<i>months</i>							11.472	0.075	450
<i>st_spend</i>							2060.57	13.236	443

¹ Standard error of the mean.

***, **, * Mean for Locals different from mean for IMRs at 1%, 5%, 10% level of significance, respectively (*t* test).

were living in the Midwest when they retired, while the remainder came from Southern (35%), Northeastern (11%) and Western (5%) states. Just over 75% of the IMRs were living in a metropolitan county when they retired. Based on survey responses, IMRs lived in Cumberland County, on average, about 11.5 months out of the year.⁸

Property tax rates and house prices played a greater role with respect to reasons to live in Cumberland County for IMRs than it did for Locals. Just over half of all Locals and IMRs had volunteered in the community in 2005, but more Locals volunteered in the local school system compared to IMRs (13.4% and 8.6%, respectively). Most IMRs and Locals were registered to vote in Cumberland County (93% for both groups), but a higher percentage of Locals voted in the most recent Cumberland County election (83.6% compared to only 75% of IMRs). On average, IMRs generally felt welcome in Cumberland County, but also felt somewhat underrepresented in local politics. On average, both Locals and IMRs believed that the presence of IMRs had increased local education funding, although IMRs appeared more convinced this was true than Locals.

Respondents were asked to rate their level of satisfaction—on a scale of one (not at all satisfied) to five (extremely satisfied)—with a variety of different public services, including education. The mean level of satisfaction with education among IMRs was 2.84, lowest of the seven public services listed.⁹ The mean level of satisfaction among Locals was significantly higher at 3.51, which ranked fifth out of the seven services evaluated by Locals, although it was not statistically different than the service ranked immediately above it (public health) or the two services ranked below it (road construction and maintenance and law enforcement) at a 15% level of significance. However, a large number of non-responses or “Don’t Knows” among the IMRs (33.3% as opposed to 7.4% for Locals) suggests that IMRs may be somewhat unfamiliar with the local public school system. On average, satisfaction with all of the public services was lower among IMRs (3.53) than among Locals (3.69) (significant at the 5% level). Accounting for the lower level of overall satisfaction among IMRs by dividing mean satisfaction with education by the average level of satisfaction with all public services reveals that the

income and home value reported in the text were estimated using categorical midpoints.

⁸ Part-time residents were likely underrepresented as those who lived in Cumberland County for less than three months out of the year were screened out of the survey and since part-time residents were less likely to be in residence at the time of the survey.

⁹ The other public services were: parks and recreation, law enforcement, public health service, recycling centers, library services, and road construction and maintenance.

relative satisfaction with education was also lower for IMRs (0.79) than for Locals (0.94) (difference is significant at the 1% level).

In general, IMRs were more willing to support a hypothetical 5% increase in the county property tax rate to increase funding for Cumberland County schools if the increase was recommended by the County Commission than were Locals (62.3% for IMRs compared to 51.0% for Locals). This referendum question was intentionally left somewhat general to avoid invoking specific preferences or opinions over the school system (e.g., “teachers are paid too much already,” etc.). However, this generality did bother a few respondents, with 17 of the 708 respondents refusing to answer the question without more information on specifically how the money would be spent (a similar number refused to answer the question without greater assurance that the money would actually go to the school system). This number may under-represent the level of respondent discomfort with the question as 65 of the 103 respondents who refused to answer the question did not provide reasons for their refusal and because those who voted against the increase were not asked to explain their “no” vote. In any event, these results suggest that education funding in Cumberland County is unlikely to be subject to a significant “Gray Peril” threat at this time. However, the means comparisons provide little insight into the motivation or other factors for supporting public education funding. To analyze these factors, we turn to multivariate regression.

Probit Regressions: Willingness to Support Tax Increase for Education

The marginal effects of the explanatory variables on the probability of supporting the hypothetical tax increase derived from all three regressions (all respondents, Local-, and IMR-only) are reported in Table 5. Three variables were negative and statistically significant in both the all-respondents and Locals-only regressions. Individuals who voted in the previous election in Cumberland County and males were less likely to support the tax increase. The latter finding is commonly reported in the literature (e.g., Ahlin & Johansson, 2001; Brokaw et al., 1990; Rubinfeld, 1977). Also, the home ownership and home value interaction variable was negatively correlated with support for the property tax increase, likely because it proxies the price of increased education funding (Bergstrom et al., 1982; Duncombe et al., 2003; Romer et al., 1992; Rubinfeld & Shapiro, 1989). All three of these variables were negative but not significant in the IMR-only regression.

One variable—educational attainment—was positive and statistically significant in both the all-respondent and Local-only regressions. Again, this result is consistent with previous findings (e.g., Brunner & Balsdon, 2004;

Table 5

Probit Regression: Support of a Tax Increase for Education

Variable	All Respondents		Locals		IMRs		F ²
	Marginal effect	Z	Marginal effect	Z	Marginal effect	Z	
<i>imp_tax</i>	-.03696	-1.08	-.03601	-0.91	-.10417**	-2.95	0.33
<i>imp_hous</i>	.04455	1.28	.02996	0.75	.07403**	2.11	0.54
<i>welcome</i>	.01061	0.30	-.00531	-0.11	.07724***	2.54	1.71
<i>com_vol</i> ¹	.08937	1.12	.07802	0.78	.17136**	2.34	1.03
<i>edu_vol</i> ¹	-.02276	-0.20	-.02439	-0.18	-.10603	-0.84	0.04
<i>vote_last</i> ¹	-.20432**	-2.15	-.26099**	-2.01	-.02618	-0.33	1.87
<i>res_lgth</i>	.00540*	1.71	.00475	1.23	.00318	0.50	0.01
<i>age</i>	-.02525	-1.57	-.02455	-1.21	.03311	0.77	2.01
<i>hhsiz</i>	.01185	0.34	.00912	0.24	.08263	1.20	0.76
<i>educ</i>	.06514**	2.02	.07931*	1.71	-.00247	-0.10	2.11
<i>employ</i> ¹	-.07582	-0.74	-.07916	-0.57	.00033	0.00	0.00
<i>male</i> ¹	-.14161*	-1.82	-.16597*	-1.68	-.06228	-0.87	1.16
<i>hhinc</i>	.03814*	1.70	.04336	1.54	.03167	1.41	0.00
<i>own_hoval</i>	-.04481**	-2.51	-.05736***	-2.54	-.00983	-0.59	3.18 ^c
<i>IMR</i> ¹	.34028**	2.26					
<i>imp_sch</i>			.03787	0.93			
<i>Crossville</i>			-.01991	-0.16			
<i>IMR_ffg</i>					.12065	1.35	
<i>IMR_ltv</i>					.00340	0.04	
<i>st_spend</i>					.00029**	2.33	
<i>metro</i>					-.01575	-0.84	
<i>months</i>					-.00244	0.09	
<i>friends</i>					-.05481	-1.57	
Regression Statistics							
	N=408		N=179		N=227		
	Pop. Size = 14,693		Pop. Size = 11,628		Pop. Size = 3,038		
	F = 1.97		F = 1.25		F = 1.62		
	P > F = 0.014		P > F = 0.231		P > F = 0.047		

¹ Discrete change of dummy variable from 0 to 1.² F-test comparing the marginal effect of the coefficient associated with IMRs to Locals (H_0).

***, **, * marginal effect different from zero at the 1%, 5%, 10% level of significance

^{a, b, c} Local and IMR coefficients different from each other at 1%, 5%, 10% level of significance.

Lentz, 1999; Miller 1996; Tedin et al., 2001). Three other variables were positive and statistically significant in the all-respondents regression. Support for the tax increase was positively correlated with the length the respondent had lived in Cumberland County, suggesting that connection to the community was an important factor. Consistent with prior research, respondents with higher incomes were more

likely to support increased education funding (Ahlin & Johansson, 2001; Bergstrom et al., 1982; Berkman & Plutzer, 2004; Button & Rosenbaum, 1989; Deller & Walzer, 1993; Fernandez & Rogerson, 2001; Harris et al., 2001; Ladd & Murray, 2001; Miller 1996; Poterba, 1997; Romer et al., 1992; Rubinfeld, 1977; Rubinfeld & Shapiro, 1989; South, 1991; Stair et al., 2006). However, contrary to the Gray

Peril Hypothesis and, to a certain extent, prior research (e.g., Berkman & Plutzer, 2004), IMRs were about 35% more likely to support the tax increase than were Locals, all else equal. Thus, the multivariate analysis suggests that even after controlling for differences in age, education, household income and other factors, IMRs were still more likely to support the tax increase than Locals, suggesting a difference between the preferences of the two groups for public education funding.

The IMR-only regression provides a closer look at what motivates IMRs to support the hypothetical tax increase. As might be expected, IMRs who felt tax rates played an important role in their decision to locate in Cumberland County were less supportive of the tax increase. Conversely, IMRs who felt house prices played an important role in their decision to locate in Cumberland County were more supportive of the tax increase. This finding suggests that maintaining home values may motivate support for education funding among IMRs. Since improvements in local schools would likely be capitalized into home values, those respondents who attach a greater importance to house prices may be more likely to support education funding.

IMRs who felt welcomed by the local community were more supportive of the tax increase, suggesting that IMRs may be acting altruistically, and that local community attitudes toward IMRs may be an important factor in determining IMR support for local public service provision. While previous research has shown that the actions of education officials can affect support for education funding (e.g., Brokaw et al., 1990; Duncombe et al., 2003; Lankford, 1985), these results suggest that the atmosphere fostered by the community more generally can also play a role. Along these same lines, IMRs who volunteered in the local community were more supportive of the tax increase, suggesting that IMR integration into the community may also be important.

Finally, support for the tax increase was positively correlated with per capita education spending in the state where the IMR was living at the time of their retirement. This result suggests that IMR experiences with support for education in their previous place of residence may be an important part of their greater willingness to support education funding in their new residence. This finding may help explain the differences in the results of this study and those found by Berkman and Plutzer (2004), which, relying on a cross-section of 9,000 school districts, found that greater numbers of longstanding older residents was correlated with higher educational expenditures, while greater numbers of elderly migrants were correlated with lower spending. Thus, the Grey Peril threat from later-life migrants may be less of a concern in low tax/low spending jurisdictions like Cumberland County that are able to attract

migrants from higher tax/higher spending jurisdictions.¹⁰

There was only one instance in which the marginal effects in the IMR- and Local-only regressions were statistically different from each other—the home ownership and home value interaction variable. In all three regressions, the variable was negative, but only significant in the all-respondent and Local-only regressions. The negative sign on this variable is consistent with the expectations that the variable proxies the cost of the increase in education funding. The estimate may not have been significant for IMRs because it may also serve as more of a proxy for wealth among IMRs than for Locals.

Referenda Results

The results of the three citizen referenda are presented in Table 6. The hypothetical tax increase in the survey garnered a higher aggregate level of support (58.49% in favor) than the 1998 sales tax or 2008 wheel tax referenda, but a lower level of support than the 1999 property tax referendum. Thus, support for the hypothetical tax increase in the survey is consistent with support for real tax increases as evidenced by voting results for the three different referenda.

However, it is interesting to note that the Fairfield Glade precinct, which is almost entirely comprised of IMRs, had the lowest percentage of votes in favor of the tax increases among the three geographic areas in the first two referenda, but the highest percentage on the last referendum and on the survey. Speculation on why the level of support among IMRs and Fairfield Glade residents might have been relatively higher than Locals on the 2006 survey and 2008 referendum after being relatively lower than Locals in the 1998 and 1999 referenda would likely center around three factors. First, the hypothetical nature of the survey and the fact that the 2008 wheel tax referendum had received little support in the County may have provided Fairfield Glade residents, sensitive to Gray Peril concerns, an opportunity to express “costless” or symbolic support for public education funding. Thus, fear of Gray Peril-type criticism may have made Fairfield Glade residents more susceptible to “hypothetical bias,” i.e., more willing to offer a symbolic vote in favor of increased education funding.

Second, the considerable lapse of time between the initial two referenda and the survey and 2008 referendum implies that there was ample opportunity for a change in perceptions or preferences. In personal interviews, Fairfield Glade residents suggested that they and other Fairfield Glade IMRs had become more charitable towards the school system due to an improved flow of information about its financial situation and need for additional funding. They

¹⁰ Interestingly, a common story told by IMRs in the focus group discussions was of mistaking their first property tax bill in Cumberland County for a quarterly instead of an annual bill.

Table 6

Results of Referenda to Increase Taxes to Provide Increased Funding for the Cumberland County Public School System

Geographic Area	Share of Yes Votes in 1998 and 1999 Referenda (Local-Option Sales Tax) ^a		Share of Yes Votes in 2008 Referendum (Wheel Tax) ^a
	1998	1999	
Fairfield Glade	36.5%	53.5%	25.1%
Lake Tansi Village	44.7%	63.0%	17.2%
Rest of County	42.4%	63.4%	16.8%
All Voters	41.4%	61.3%	17.8%

^a Excludes early voting and absentee ballots, which could not be segregated geographically.

attributed this change to increased openness on the part of the school board and increased reporting of school board deliberations in the form of monthly articles in the Fairfield Glade newspaper (authored by the school board member from Fairfield Glade).

Third, the referenda and the survey involved different types of tax increases. The first two referenda called for an increase in the local option sales tax rate, while the third referendum proposed a wheel tax. The survey proposed a hypothetical increase in the property tax rate. It may be the case that IMRs as a group were more amenable to a property tax increase than a sales tax increase, possibly because many had relocated from areas with higher property taxes but lower sales taxes, or because they were concerned about the equity of a high sales tax rate that applies fully to food items.¹¹ On the other hand, one would expect the burden of an increase in property taxes to fall more heavily on IMRs than a wheel tax or an increase in the sales tax. Thus, while support for the hypothetical tax increase is within the range of support on referenda for actual tax increases, there are some concerns about inconsistencies in the relative level of support among Fairfield Glade residents for the hypothetical and actual tax increases.

Conclusion

The effects of later-life migrants on rural communities are becoming more and more important as baby boomers reach retirement age and rural communities increasingly devote economic development resources to attracting these migrants. The effects of significant later-life migration into a rural community on the community's public education system can be separated into the effects on the community's ability to fund education and on the community's willingness to fund education. The literature suggests that while later-life migrants may increase the community's tax base and, thus, its ability to fund education, the effect on the community's

willingness to fund education is much less certain. This study suggests that in one rural Tennessee County, later-life migrants were actually more supportive of education funding than long-time residents, and that this support was motivated by self-interest, altruism, and their pre-existing expectations of higher tax and public service levels.

Simple means comparisons revealed a number of important differences between IMRs and Locals. The results of these comparisons are generally contrary to the Gray Peril hypothesis. Thus, IMRs, while less satisfied with the local public school system, were more supportive of funding increased expenditures on this system. These results are perhaps not too surprising since IMRs in Cumberland County tend to be wealthier and have more formal years of education than Locals. As noted in a study of support for education funding among retirees in Florida:

The Sunshine State's older population is increasingly composed of well-educated, relatively well-off younger retirees (aged 55-64). These individuals are likely to value education highly and associate education with a progressive community. They perceive Florida's local taxes as relatively low and often believe modest tax increases to be no undue burden. (Button & Rosenbaum, 1989)

However, controlling for factors such as education and household income does not eliminate the higher level of support for the hypothetical tax among IMRs. Additional analysis of the responses suggests that the higher level of support among IMRs may be motivated both by self-interest and by altruism.

Not surprisingly, IMRs for whom tax levels were a more important factor in their decision to reside in Cumberland County were less supportive of the hypothetical tax increase. However, evidence of self-interested behavior may also be found in the positive correlation between the importance of home values to the decision to reside in Cumberland

¹¹ This concern was raised by a number of IMRs in focus group discussions.

County and support for the tax increase. If respondents view improving the public education system as a way of bolstering home prices, then those for whom home prices were more important would be more likely to support the tax increase. However, there is also evidence that IMRs were behaving altruistically. Specifically, those residents who were made to feel welcome in Cumberland County were more likely to support the tax increase. Altruism as a motivator is also suggested by the positive correlation between those who volunteered in the local community and support for the tax increase.

Finally, another key factor in IMR support for the tax increase was per capita education spending in the state where the IMR lived at the time of retirement. This finding, which suggests that IMR experiences with better-funded school systems increased the likelihood of support for the tax increase, has important implications for other jurisdictions and other studies of the Gray Peril hypothesis. Simply put, IMRs attracted to a low tax/low service jurisdiction seem unlikely to pose much of a Gray Peril threat as these IMRs are likely to be accustomed to higher taxes and higher service levels. In fact, in these circumstances the IMRs may actually demand higher public service levels than Locals. This finding may help to distinguish the results in this study from studies finding that IMRs tend to be less supportive of education funding, and also suggests that relative taxing/funding levels among sending and receiving jurisdictions should be an important consideration for future analyses of the Gray Peril hypothesis.

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