

Who wants school vouchers?*

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Abstract

School vouchers are one of the most contested issues in educational policy. Yet, various survey data often yield different results on support for vouchers (Moe 2001). Voucher opinions are better understood by looking at American people into several demographical and geographical segments. However, by doing this, we encounter a data problem because we do not have enough sample sizes in each segments. To address this issue, we propose the use of a model based simulation method - multilevel regression and poststratification - to estimate the voucher opinions. We find that vouchers are most popular among high-income white Catholics and Evangelicals that in general, among whites, the higher the income, the more popular vouchers are. But the pattern goes the other way among nonwhites. Among them, Vouchers are less popular among mid-income class but are more welcome in lower income groups.

Keywords: Vouchers, Multilevel Regression and Poststratification

School vouchers are one of the most contested issues in educational policy. Vouchers, as it is commonly described, provide families the funds to pay for the tuitions in the public or private school of their choice (Metcalf and Legan 2002). In most cases, families use vouchers to leave the public school and attend the private school, which cost more but is viewed as a provider for better education. Henceforth, supporters of vouchers promote them as a way of making quality education more affordable for lower-income families and as a promoter of additional choice for all which leads to increased competition and educational improvement

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for all. More immediately, it is a financial relief for people who are currently sending their children to private schools. On the other side, opponents fear vouchers will draw money and political support away from public schools which results in greater educational inequality. In addition, to the extent that vouchers support religious schools, there is the issue of separation of church and state. In sum, public funding for private schools is controversial at the primary and secondary levels, despite the general acceptance of tuition assistance programs for college and beyond (see Chubb and Moe 1990; Levin 2002; Moe 2001 for more comprehensive reviews for the debate).

There have been numerous studies comparing public to private schools, and otherwise, attempting to estimate the potential effects of vouchers and other school choice programs (Chubb and Moe 1990; Witte 1998; Bush 2004; Ferreyra 2007; Witte and Thorn 1996; Howell 2004; Moe 2001). But less attention has been devoted to another key part of the political picture: public opinion (Chubb and Moe 1988, 1990; Moe 2001). Beyond the issues of educational policy, debate over school choice focuses on three key demographic factors:

- *Income*. Are vouchers a way for low-income families to gain educational opportunity, or are they really just a handout for richer parents who send their kids to private schools?
- *Religion*. To what extent are vouchers a special benefit for Roman Catholics or other religious groups?
- *Race/ethnicity*. Do vouchers a chance for ethnic minorities to afford something better than their local public schools, or are they?

We cannot answer the policy questions and we don't even try to do it in this paper. But we can look at which segments of the population support school vouchers and which oppose them. In addition to the above factors, we break down the responses by state of residence:

much of school policy is decided at the state level, and public opinion has been shown to be relevant to state policy in various areas (Gelman, Park, Shor, Bafumi, and Cortina 2009; Lax and Phillips 2009).

The paper is organized as follows: In Section I, we present the public opinions on vouchers over times with different surveys, showing that the Americans overall do not have consistent opinions on vouchers. Voucher opinion is better revealed after further breaking it down into several segments. In Section II, we briefly describe the statistical method, multilevel regression and poststratification (MRP), employed in this paper to better summarize various segments of the population that support vouchers. In Section III, we display the result of the MRP and demonstrate that: vouchers are most popular among high-income white Catholics and Evangelicals and low-income Hispanics. Among white groups, the higher the income, the more popular are school vouchers. But among nonwhites, it goes the other way. We conclude in Section IV.

Public Opinions on Vouchers

Various survey data often yield different results on support for vouchers (Moe 2001). For instance, the *Phi Delta Kappan* polls (PDK), one of the surveys that records public opinions about school vouchers over years, shows this inconsistency. Figure 1 shows the trends in national opinions over the past few decades. The dark line shows that in 1970 and 1971, vouchers did not get much support from Americans. However, after 1970's, more Americans supported vouchers than opposed them. The support for vouchers peaked between 1981 and 1985 that the difference in opinions between favoring and opposing vouchers was about 10%. It dropped down to 5% between 1986 and 1991. Nonetheless, in the early 1990's, when vouchers were getting more attentions and real discussions, and when the Milwaukee

became the first American community to implement school voucher program, the picture for public opinions on vouchers changed dramatically (as shown in the light line). There were far more Americans who opposed vouchers than supported them. Between 1993 and 1998, the difference between favoring and opposing vouchers is about 25%. The gap narrowed to 17% between 1999 and 2003 and stood around 20% between 2003 and 2007. Moe (2001) concluded that the major contributing factor to this dramatic shift is because the PDK polls changed the wordings of the voucher questions. He conjectured that the use of “public expense” in the new question wording arose negative feeling about vouchers.¹ Nonetheless, this inconsistency demonstrates that either the Americans did not have real understanding of vouchers or the survey questions failed to gauge the valid opinions from the Americans.

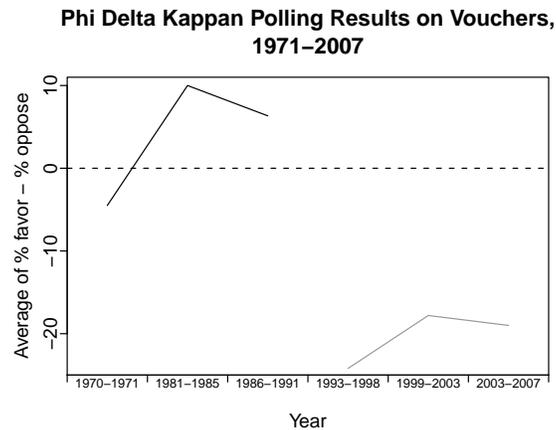


Figure 1: Trends in national opinions of schools vouchers over the past few decades using the *Phi Delta Kappan* (PDK) polling data. The use of years moving average is to mitigate the yearly fluctuation and better reveal the overall trend. The dark color line and the light color line show the national opinions of schools vouchers with different question wordings. The two wordings produce dramatic difference. People were in favoring of school voucher before 1993 and were opposing them after 1993.

¹ Before 1993, the question read: “In some nations, the government allots a certain amount of money for each child’s education. The parents can then send the child to any public, parochial, or private school they choose. This is called the ‘voucher system.’ Would you like to see such an idea adopted in this country?” After 1993, the new wording is: “Do you favor or oppose allowing students and parents to choose a private school to attend at public expense?”

Moreover, the other reason that we fail to garner from the surveys a consistent picture of the American peoples on school voucher might be that the level of analysis of these surveys is simply not making any critical sense. In other words, by looking at the American people as a whole, we average over important messages of American people. As Moe (2001, 207) puts it, “what we want to know is not whether people express support for vouchers during a particular survey, but what matters to them. The existing surveys don’t tell us much about that.”

To address this data issue, Chubb and Moe (2001) conducted a new survey through telephone interviews in 1995. The sample consists of 4,700 adults and it yields a nationally representative cross-section of the American adult population. In their survey, the voucher question was well-worded and very informative to the interviewers. It read:

“...Under a voucher plan, the parents of each school-age would be eligible for a grant or voucher from the state, representing a certain amount of tax money. They would then have the right to send their child to a public school, just as before. Or they could use the voucher to help pay for the child’s education at a private or parochial school of their choosing.”

They conclude that parents are more supportive than non-parents on vouchers; and among these parents, those whose children are in private schools are more sympathetic to vouchers than those whose children are in public schools. In terms of various racial groups, African Americans are stronger supporters of vouchers than whites and Hispanics do. Among these three groups, whites are the least supportive to vouchers. Education is negatively associated with the support of school vouchers. And party identification doesn’t matter much. Nonetheless, Republicans are slightly more supportive of vouchers than Democrats.

Similar to the conclusions of Moe (2001), Witte and Thorn (1996) find similar demographic portraits of those who choose vouchers. They look at the data of the Milwaukee Parental Choice program and find that 70% of participating students are African American. 20% of them are Hispanics and almost no Asian students. Gender difference is minor; yet there are more female students than male students. In terms of reported household income, the average income is below \$22,000. Most of them are single parent households (75%). Furthermore, over 50% of these mothers are employed either full- or part-time. These mothers have at least some college education.

In short, they find that American people do have consistent opinion about vouchers. As Moe (2001, 211) finds it, “[t]here is an underlying structure to the issue [of school vouchers] that makes sense.” That is people with stakes on school vouchers are those who expressed support of vouchers.

Estimating Voucher Opinion with Multilevel Regression and Poststratification (MRP)

In light of the findings of Moe (2001) and Witte and Thorn (1996), we understand better the voucher opinions by looking at Americans in various segments. To estimate the public opinions by various segments, scholars commonly used two main methods disaggregation (Erikson et al. 1993) and simulation (Park, Gelman, and Bafumi 2006; Gelman and Little 1997). Relative to simulation, disaggregation is easier to be implemented. But disaggregation has drawbacks. As we further break the survey data into several segments (e.g., states), we thus encounter a problem of insufficient sample sizes in each segment (i.e., the state-level data is rare). Furthermore, the segmented data might not perfectly map into the original sample design; thus this undermines the sample randomness. Henceforth, the derived es-

timate of disaggregation is less efficient and less accurate. On the other hand, the estimate of simulation is obtained via modeling responses as a function of each segment (multilevel regressions). For segments that have few samples, their estimates are thus pooled toward the group mean. Nonetheless, these estimates still suffer the insufficiency problem. Park, Gelman, and Bafumi (2006) and Gelman and Little (1997) improve this method by post-stratifying (weighting) these estimates with population data. In the following sections, we are going to apply their method - multilevel regression and poststratification (MRP) - to estimate the voucher opinions.

Data

We use the 2000 and 2004 National Annenberg Election Survey (NAES), which yields over 50,000 respondents, to estimate the responses of school voucher opinion. Its voucher question reads, “Federal government should give school vouchers – give tax credits or vouchers to help parents send their children to private schools – should the federal government do this or not?” We code this response as 1 for favoring vouchers and 0 for opposing vouchers. In 2000, 45% of those who expressed an opinion on this question said yes; in 2004, 52% expressed support of vouchers. Income is coded into 5 categories (under \$20,000, \$20,000–\$40,000, \$40,000–\$75,000, \$75,000–\$150,000, and over \$150,000); religion and race/ethnicity are combined into a variable of 7 categories (White Catholics, White evangelical Protestants, White non-evangelical Protestants, White other/no religion, Blacks, Hispanics, and other races). We also include 2 geographical variables: 51 states including DC as a separate “state”, and 4 regions (Northeast, Midwest, South, and West). For each state, we have average state income and the Republican presidential election share in 2004.

Figure 2 displays the raw estimates (disaggregation) of the percentages of voucher supports from the 2000 and 2004 NAES and Moe (2001). The percentages vary a lot by state,

income level, and religious/ethnic group. There is a significant difference between the estimates of Moe (2001) and those of the 2000 and 2004 NAES in the group of rich people. One reason of this difference might be that Moe (2001) did not sample enough samples in this group. Thus we can see that the estimates bear with great uncertainty.

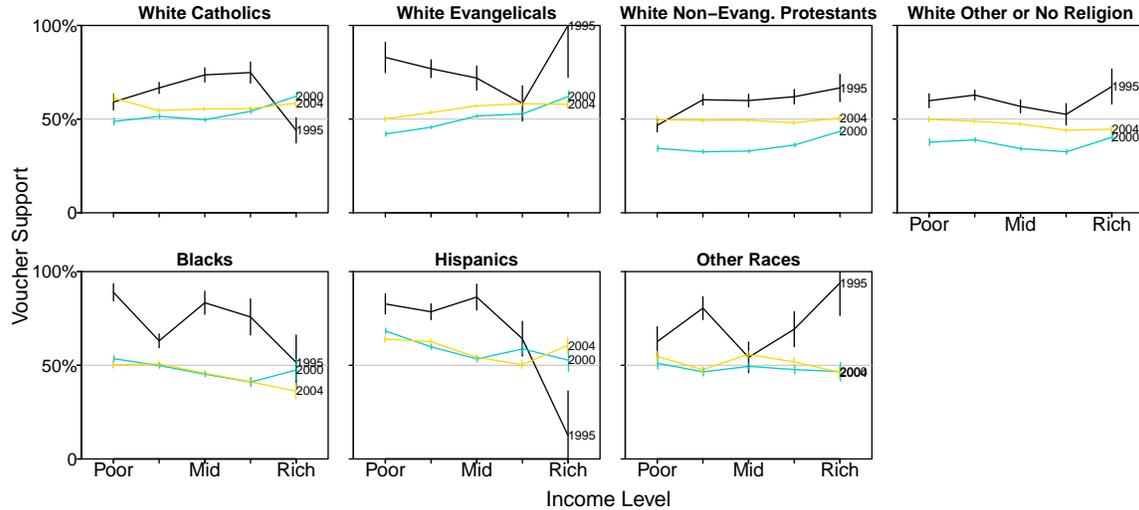


Figure 2: Plot of the percentage who support vouchers by religious/ethnic group: white Catholics, white born-again Protestants, white non-born-again Protestants, white other/no-religion, African-Americans, Latinos, and other. The plot shows estimates from Moe (2001), 2000 and 2004 Annenberg National Election Surveys with ± 1 standard error bars. Overall, the patterns of 2000 and 2004 are similar. There are significant differences between the estimates of Moe (2001) and Annenberg surveys in rich people. The estimates of rich people of Moe (2001) bear large uncertainty, which indicates this group of people are under-sampled, may contribute to this difference.

0.1 Method: Multilevel Regression and Poststratification (MRP)

We fit a multilevel regression of the voucher opinions (y) on relevant covariates: income, religion and race/ethnicity combination ($releth$), region, state, and interactions between these categories. We also include average state income and Republican presidential election share in 2004 as the state-level predictors to better estimate the state effects. The model is fitted with a multilevel logistic regression, using a `glmer` (generalized linear mixed effects in

R) function (Bates and Maechler 2010). The formal expression of the model is as Equation (1):

$$\Pr(y_i = 1) = \text{logit}^{-1} \left(\alpha^0 + \alpha_{m[i]}^{\text{releth}} + \alpha_{k[i]}^{\text{income}} + \alpha_{s[i]}^{\text{state}} + \alpha_{r[i]}^{\text{region}} + \alpha_{k[i],s[i]}^{\text{income,state}} + \alpha_{k[i],r[i]}^{\text{income,region}} + \alpha_{m[i],s[i]}^{\text{releth,state}} + \alpha_{m[i],r[i]}^{\text{releth,state}} \right) \quad (1)$$

The terms after the intercept (α^0) are effects for the various groups and categories of respondents (varying intercepts):

$$\alpha_{k[i]}^{\text{income}} \sim \mathcal{N}(0, \sigma_{\text{income}}^2), \text{ for } k = 1, \dots, 5$$

$$\alpha_{k[i],s[i]}^{\text{income,state}} \sim \mathcal{N}(0, \sigma_{\text{income,state}}^2), \text{ for } k = 1, \dots, 5 \text{ and for } s = 1, \dots, 51$$

$$\alpha_{k[i],r[i]}^{\text{income,region}} \sim \mathcal{N}(0, \sigma_{\text{income,region}}^2), \text{ for } k = 1, \dots, 5 \text{ and for } s = 1, \dots, 4$$

$$\alpha_{m[i],s[i]}^{\text{releth,state}} \sim \mathcal{N}(0, \sigma_{\text{releth,state}}^2), \text{ for } m = 1, \dots, 7 \text{ and for } s = 1, \dots, 51$$

$$\alpha_{m[i],r[i]}^{\text{releth,region}} \sim \mathcal{N}(0, \sigma_{\text{releth,region}}^2), \text{ for } m = 1, \dots, 7 \text{ and for } r = 1, \dots, 4$$

$$\alpha_{m[i]}^{\text{releth}} \sim \mathcal{N}(\beta_{\text{releth}}^{\text{income}} \cdot \text{income}_m, \sigma_{\text{releth}}^2), \text{ for } m = 1, \dots, 7$$

$$\alpha_{r[i]}^{\text{region}} \sim \mathcal{N}(\beta_{\text{region}}^{\text{income}} \cdot \text{income}_r, \sigma_{\text{region}}^2), \text{ for } r = 1, \dots, 7$$

$$\alpha_{s[i]}^{\text{state}} \sim \mathcal{N}(\beta_{\text{state}}^{\text{income}} \cdot \text{income}_s + \beta_{\text{state}}^{\text{state.income}} \cdot \text{state.income}_s + \beta_{\text{state}}^{\text{rep.vote}} \cdot \text{rep.vote}_s, \sigma_{\text{state}}^2), \text{ for } s = 1, \dots, 51$$

The varying intercepts of the income, income-state, income-region, and religion/ethnicity-state levels are drawn from a normal distribution with mean 0. The varying intercepts of the religion/ethnicity and region group levels are modeled as a function of the average income of respondents of those groups. The varying intercept of the state level are modeled as a function of the average income of respondents of each state, the average state income, and the Republican presidential election share in 2004. The variances of these varying intercepts are thus modeled from the correlated grouping structures (Gelman and Hill 2006).

After fitting this multilevel logistic regression, we calculated the predictive probability of the support of voucher opinion for each demographic-geographic type θ . There are 7140 (51 states \times 4 regions \times 5 income categories \times 7 religion/ethnicity) combinations of these demographic-geographic types. For the purpose of our analysis, we exclude the region aspects and focus looking at the state-level responses. Henceforth, we are left with 1785 cells of estimates.

Next, to correct the efficiency problem, we poststratify these estimates θ 's with population percentages N 's. The corresponding population percentages of these 1785 cells are calculated from IPUMS "5-Percent Public Use Microdata Sample" from the United States census data. Henceforth, for each θ_j in each state s , the weighted predictive probability (\hat{y}_s) is:

$$\hat{y}_s = \frac{\sum_{j \in s} N_j \theta_j}{\sum_{j \in s} N_j} \quad (2)$$

Results of MRP

Figure 3 and Figure 4 visually display these 1785 estimates from the NAES in 2000 and 2004², both of which asked a question of whether the Federal government should give school vouchers, respectively. The support is displayed with brown color and the opposition is displayed with blue. Other colors are blended with the increasing level of gray color and hence revealed the percentage of voucher opinion as they fall close to the national average. The average percentage of voucher opinion is colored as gray.

In a broader picture, if we just look at the American voters as a whole, without taking

² These surveys are rolling cross-sections with about 100,000 respondents each, which become 48,778 and 55,977 once we restrict ourselves to those who were asked and responded to the income, ethnicity, religion, and voucher questions. The question in 2004 allowed five possible answers. We excluded from our analysis the 30% of respondents who gave the middle category.

into account race and religion aspects, there is no strong pattern between different states. In 2000, for those whose income levels are over \$150,000, the support for voucher is somewhat higher in the east. But the pattern disappears in 2004. Henceforth, in the followings, we examine American voters by further breaking them down into difference race and religion groups.

Similar to Moe (2001) and Witte and Thorn (1996), we find vouchers are particularly popular among Roman Catholics and also, to a lesser extent, among born-again Protestants. African Americans in general support vouchers. Nonetheless, we discover some subtlety by taking into account the income and geographical factors.

Vouchers are most popular among high-income white Catholics and Evangelicals and low-income Hispanics. In general, among white groups, the higher the income, the more popular are school vouchers. But among nonwhites, it goes the other way: with vouchers being popular in the lower income categories but then becoming less popular among the middle class.

The support for vouchers roughly matches Republican voting, but not completely. Vouchers are popular in the heavily Catholic Northeast and California, less so in many of the mostly Protestant states in the Southeast.

We also see a regional pattern among African Americans, where vouchers are most popular outside the South. We observe similar patterns between African-American and nonwhites with respect to low income people. African-American support for vouchers is also higher at lower incomes and in addition is consistently higher in the northeast and midwest than in the south.

We find similar patterns from the 2004 Annenberg survey. But it is difficult to make a direct comparison to the 2000 survey because the question was worded differently: instead of yes/no, it recorded with five possible responses. We counted the two positive responses as

Yes, the two negative responses as No, and discarded the 30% or responses in the middle category (Neither favor nor oppose). Nonetheless, beyond these similar patterns between 2000 and 2004, the most notable change is the increase in support from 2000 to 2004. Although this trend is tricky to assess from these data alone, as the wording for the coded responses in the survey was changed.

Insofar, we obtain much more subtle information using MRP by breaking the data into many categories. This could not have been done with simple raw state estimates (disaggregation) because we might not have enough sample sizes in some categories; and thus we might fail to garner estimates or estimates with greater uncertainty. On the other hand, our MRP method addresses to this data issue. Nonetheless, since our estimates are predictive probability that estimated from an elaborated multilevel logistic regression, as shown in Equation (1), their predictions are succumbed to the goodness of fit of the model. For the assessment purpose, we illustrate in Figure 5, which shows estimates and raw data for white Catholics in each state.

Comparing Figure 5 to Figure 3, the estimates from the multilevel model does more pooling in small states such as Wyoming and Idaho. In contrast, in larger states such as California and New York, the multilevel estimates are close to the data. We have similar plots for the other ethnic/religious categories shown in the rows of Figures 3 and 4.

Discussions and Conclusions

Since 1970's, scholars have found that the estimates of voucher opinions of American people varied overtime. Moe (2001) have thus conjectured that Americans might not understand the voucher policy or the existing data failed to garner the real opinion of vouchers. With this respect, Chubb and Moe (2001) designed a new survey in 1995, and looked at American

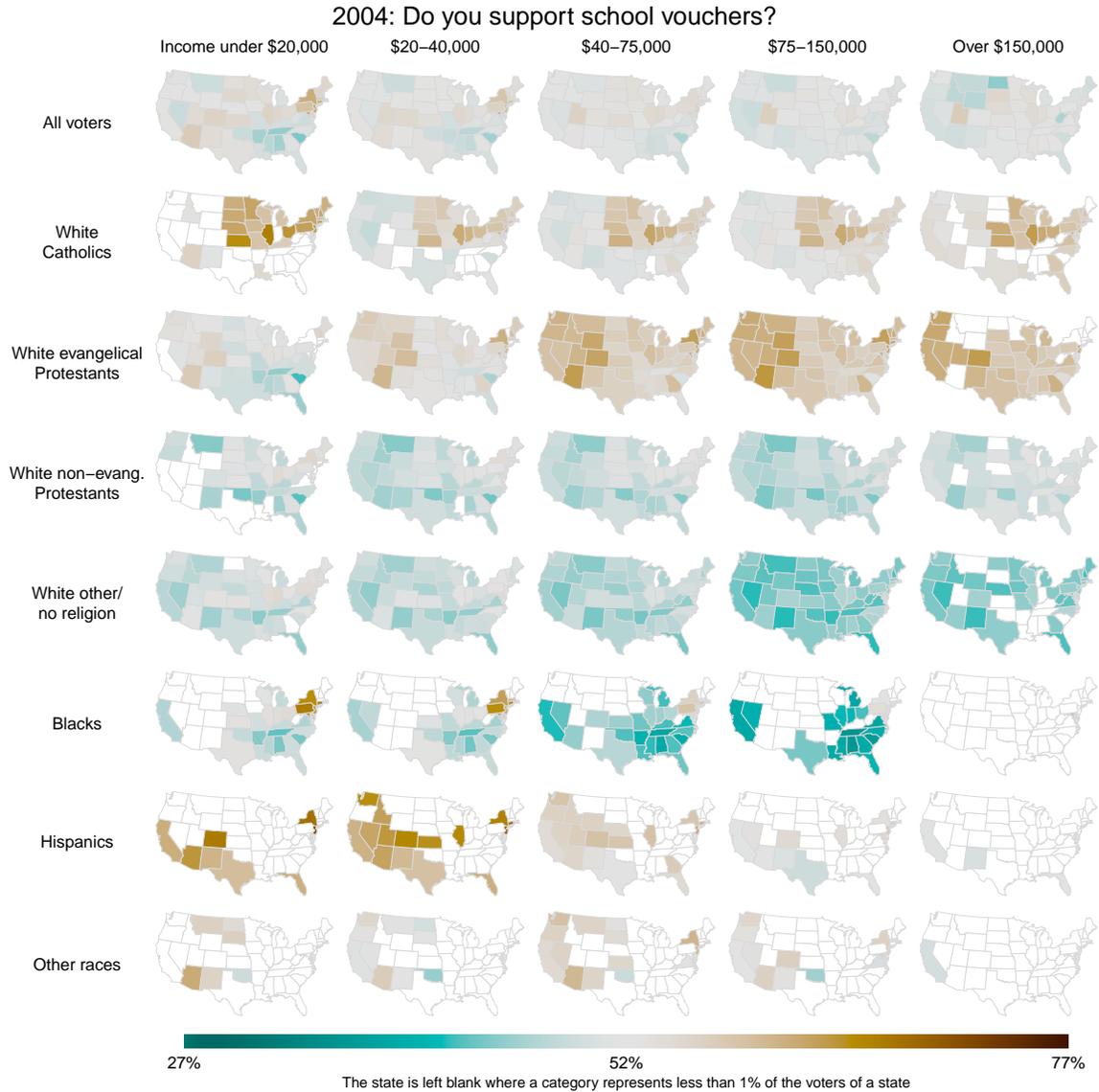


Figure 4: Estimates of proportion of voters who support school vouchers in each state in 2004, for voters of different religious/ethnic categories and five different categories of family income. Colors (brown as support and blue as opposition) show support relative to the national average (gray). The patterns are similar to those in 2000; see Figure 3.

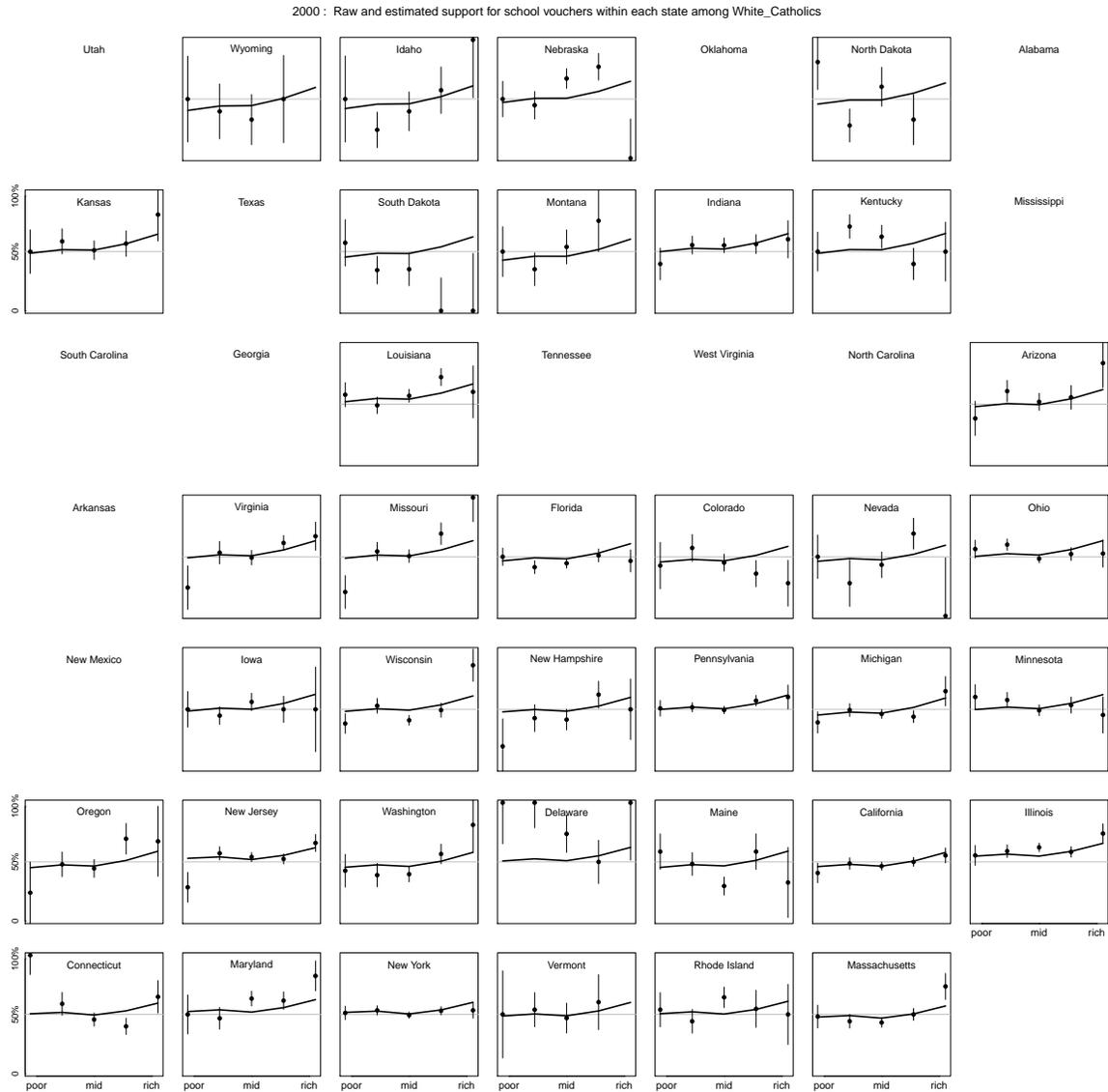


Figure 5: Example of model evaluation: estimated support for vouchers among white Catholics in each state in 2000 (as mapped in Figure 3, and ordered by Democratic vote share) and corresponding raw proportions and standard errors based on survey data. (States in which white Catholics represent less than 10% of the population are excluded.) The multilevel model does more pooling in small states such as Wyoming and Idaho. In contrast, in larger states such as California and New York, the multilevel estimates are close to the data. We have similar plots for the other ethnic/religious categories shown in the rows of Figures 3 and 4.

people in various demographical aspects. They found that those with stakes on vouchers are going to support vouchers more than those without. Henceforth, they found that African American and Hispanics, in general, are more sympathetic to vouchers. Lower income people support vouchers stronger than rich people do. And parents favor vouchers more than nonparents.

In light of the findings of Moe (2001), we believe that there are more to gauge from the Americans in terms of their voucher opinions. In particular, we shall not neglect the geographical factors such as state and region that often the times do affect the opinions of American people. Moreover, we have every reason to believe that there are interaction effects between several important factors. Nonetheless, to look at the data this way, we have to break the data further into small pieces and we thus will encounter the efficiency problem of the estimates.

We propose the use of a model based simulation method - multilevel regression and poststratification - to estimate the voucher opinions. The step of multilevel regression allows us to pool the estimates toward the overall mean whereas the sample size is small. The pooling is modeled based prediction and thus we are using information from other predictors and the correlations of these predictors with respect to the data structure of other group levels. This makes much sense than the simple raw estimates from average of small sample sizes. The step of poststratification using population percentage further gives us more efficient estimates. Overall, with MRP, we garner more reliable and more sensible estimates and are able to look at data in many segments.

In addition to traditional demographic trait of voucher opinions, our estimates of MRP demonstrate the subtle difference between racial-religious groups. In particular, vouchers are most popular among high-income white Catholics and Evangelicals that in general, among whites, the higher the income, the more popular vouchers are. But the pattern goes

the other way among nonwhites. Vouchers are less popular among mid-income class people but are more welcome in lower income nonwhites. Additionally, there is a significant region pattern that vouchers are popular among African American in the south,

As noted in the beginning of the paper, we are not trying to offer answers to explain why some Americans support vouchers and why some don't. In the past, scholars have mixed conclusions about voucher opinions because they were limited by either the quality of the data or the use of methods. Henceforth, it is our major goal to contribute to the voucher literatures in finding who support vouchers by looking at American people in various demographical and geographical aspects. Nevertheless, one can imagine that there more subtle patterns left to be discovered in the data about voucher opinions. These patterns are going to be the bases for model buildings, which are going to be used to answer the reason why American support vouchers.

References

- Bates, Douglas, and Martin Maechler. 2010. *lme4: Linear mixed-effects models using Eigen and Eigen++*. R package version 0.999375-34, URL <http://CRAN.R-project.org/package=lme4>.
- Bush, Lawson V. 2004. "Access, School Choice, and Independent Black Institutions: A Historical Perspective." *Journal of Black Studies* 34 (3): 386–401. URL <http://www.jstor.org/stable/3180943>.
- Chubb, John E., and Terry M. Moe. 1988. "Politics, Markets, and the Organization of Schools." *The American Political Science Review* 82 (4): 1066–1087. URL <http://www.jstor.org/stable/1961750>.
- Chubb, John E., and Terry M. Moe. 1990. *Politics, Markets, and America's Schools*. Washington, D.C.: Brookings Institution.
- Erikson, Robert S., Gerald C. Wright, and John P. McIver. 1993. *Statehouse Democracy: Public Opinion and Policy in the American States*. Cambridge: Cambridge University Press.
- Ferreira, Maria Marta. 2007. "Estimating the Effects of Private School Vouchers in Multidistrict Economies." *The American Economic Review* 97 (3): 789–817. URL <http://www.jstor.org/stable/30035020>.
- Gelman, Andrew, and Jennifer Hill. 2006. *Data Analysis Using Regression and Multi-level/Hierarchical Models*. UK: Cambridge University Press.
- Gelman, Andrew, and Thomas Little. 1997. "Postratification into Many Categories Using Hierarchical Logistic Regression." *Survey Methodology* 23 (2): 127–135. URL <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=12-001-X19970023616>.
- Gelman, Andrew, David Park, Boris Shor, Joseph Bafumi, and Jeronimo Cortina. 2009. *Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do?* 2nd ed. Princeton: Princeton University Press.
- Howell, William G. 2004. "Dynamic Selection Effects in Means-Tested, Urban School Voucher Programs." *Journal of Policy Analysis and Management* 23 (2): 225–250.
- Lax, Jeffrey R., and Justin H. Phillips. 2009. "Gay Rights in the States: Public Opinion and Policy Responsiveness." *American Political Science Review* 103 (3): 367–386. URL <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=6101660&fulltextType=RA&fileId=S0003055409990050>.
- Levin, Henry M. 2002. "A Comprehensive Framework for Evaluating Educational Vouchers." *Educational Evaluation and Policy Analysis* 24 (3): 159–174. URL <http://www.jstor.org/stable/3594163>.

- Metcalf, Kim K., and Natalie A. Legan. 2002. "Educational Vouchers: A Primer." *The Clearing House* 76 (1): 25–29. URL <http://www.jstor.org/stable/30189782>.
- Moe, Terry M. 2001. *Schools, Vouchers, and the American Public*. Washington, D.C.: Brookings Institution Press.
- Park, David, Andrew Gelman, and Joseph Bafumi. 2006. "State Level Opinions from National Surveys: Poststratification Using Multilevel Logistic Regression." In *Public Opinion in State Politics*, edited by Jeffrey E. Cohen. Stanford, CA: Stanford University Press, pp. 209–228.
- Witte, John F. 1998. "The Milwaukee Voucher Experiment." *Educational Evaluation and Policy Analysis* 20 (4): 229–251. URL <http://www.jstor.org/stable/1164323>.
- Witte, John F., and Christopher A. Thorn. 1996. "Who Chooses? Voucher and Interdistrict Choice Programs in Milwaukee." *American Journal of Education* 104 (3): 186–217. URL <http://www.jstor.org/stable/1085641>.