Discussion Paper No. 05-08

Policy Innovation in Local Jurisdictions: Testing the Neighborhood Influence Against the Free-Riding Hypothesis

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Non-Technical Summary

When making decisions, individuals tend collect information on decision makers in reference groups. Such behavior may be rational for several reasons and may be explained with different hypotheses on how individuals behave when making decisions. This paper deals with the question how policy makers in the local jurisdictions of a federal system influence each other in decisions to adopt policy innovations. In the theoretical literature on policy innovations and policy experimentation in decentralized political systems, two competing hypotheses on mutual interdependencies among local jurisdictions have been discussed. The first one says that jurisdictions *positively* influence each other in the adoption of policy innovations. One possible reason is that decision makers learn from each other, or, due to reputational concerns, governments may benefit from choosing actions similar to those in reference jurisdictions. The second hypothesis is based on horizontal information externalities between jurisdictions. Local policy experiments provide information that is useful for all governments, and therefore for any given jurisdiction an incentive exists to free-ride on experimentation activities of others. Within reference groups, jurisdictions with a strong predisposition for the adption of a new political technology would then *negatively* affect other jurisdictions' willingness to experiment with the new policy.

In this paper, data on policy innovations in a large sample of local jurisdictions are used to test for spatial interactions between jurisdictions. The jurisdictions we are looking at are US school districts, and the policy innovation under consideration is inter-district public school choice. The empirical results suggest that the districts' predispositions towards the adoption of school choice are strongly interdependent. A given districts probability to adopt school choice is substantially higher if neighboring districts are more likely to participate. The paper thus rejects the free-riding hypothesis and supports the view that in federal systems the diffusion of policy innovations is stimulated by horizontal interactions between jurisdictions.

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Abstract

Before making difficult decisions, individuals tend to collect information on decision makers in reference groups. With respect to policy innovations in a decentralized public sector, this may give rise to positive neighborhood influence on adoption decisions. On the other hand, due to learning externalities, an incentive exists to free-ride on policy experiments of others. In this paper, U.S. data on school district policies are used to show that with respect to policy experiments, decision makers indeed are heavily affected by decision makers in reference groups. The results suggest that if a given district's neighbors' expected benefits from adopting a new policy increase, this substantially increases the original district's probability of adoption. The paper thus rejects the free-riding hypothesis and supports the view that in federal systems the diffusion of policy innovations is stimulated by horizontal interactions between jurisdictions.

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1 Introduction

Recent research has put forward the idea that when making decisions, individuals are affected by the attitude or actual behavior of other individuals in certain reference groups. Collecting information on benchmark agents may be rational for a number of reasons. First of all, since it is costly to evaluate alternatives and to find out which one is to be pursued, individuals may seek to benefit from information gathered by others. A straightforward example is what Hirshleifer and Teoh (2003) in their taxonomy of social learning and behavioral convergence call rational observational learning: individuals learn by rational Bayesian inference on information conveyed in the behavior of others. Scharfstein and Stein (1990), for instance, discuss herd behavior at financial markets. They show that it may be in the best interest of managers concerned about their reputation to ignore their private information and to mimic investment decisions of other managers. Katz and Shapiro (1986) argue that with respect to technology adoption, network externalities may motivate decision makers to choose similar actions. Brock and Durlauf (2001) provide a model of discrete choice with social interactions, where individual utility directly depends on the choices of others in a reference group. In the context of political decisions, Besley and Case (1995) argue that it may be rational for office-motivated governments to choose policies similar to those in benchmark jurisdictions if voters use relative rather than absolute performance for their inference on the quality of locally provided services.

A particularly interesting and practically relevant application for theories of behavioral convergence is the horizontal diffusion of policy innovations in federal systems. It has often been claimed that a decentralized political system with a large number of independent local jurisdictions offers favorable conditions for policy experiments and the implementation of policy innovations. Oates (1999), for instance, gives an optimistic view of 'laboratory federalism', where many jurisdictions simultaneously engage in policy experiments and where jurisdictions learn from the experience made by others. However, as Strumpf (2002) points out, in the context of experiments and innovative activities, learning externalities will create a standard sort of incentive for free-riding on other jurisdictions' experimentation efforts. If new and complex policies are invented and tested, it will usually take some time until information about outcomes is publicly available. Then, if a new political technology becomes available and jurisdictions tend to free-ride on experimentation and testing activities of others, we would expect *not* to observe behavioral convergence between similarly situated jurisdictions. Instead, in the early stage of the diffusion process, we would expect a typical jurisdiction to stick to a traditional policy given that certain benchmark jurisdictions bear the cost of experimentation.

The purpose of this paper is twofold. First of all, evidence will be provided suggesting that similarly situated local jurisdictions in federal systems indeed tend to affect each other in the decision whether to experiment with new political technologies. Hence, the influence of benchmark jurisdictions seems to be important for the diffusion of policy innovations. Secondly, we will test whether the behavior of local governments is more heavily affected by neighborhood influence, i.e. by incentives to follow the model of benchmark jurisdictions, or by incentives to free-ride on experimentation efforts in other jurisdictions.

In our analysis, we use data from the Schools and Staffing Survey (SASS) 1993-94 of the National Center for Education Statistics on policy innovations in a large number of local school districts in the U.S. More specifically, we will investigate the adoption of inter-district public school choice by school districts in five American states a few years after districts were given the power to open up their borders for transfer students. Since school districts are local jurisdictions, we assume that reference groups are defined according to geographical proximity. More specifically, for any given district, the reference group is defined as all local school districts belonging to the same county. Using an approach proposed by Case (1992), we then estimate a spatial probit in the cross-section of districts. The results indicate that the school districts' predispositions towards policies of school choice are strongly interdependent even if we control for a large number of district characteristics describing local preferences. The probability of adoption of school choice policies is substantially higher for districts which are exposed to neighbors with a strong predisposition towards adoption. This finding suggests that free-riding on other districts' effort to experiment with the new policy has not been a prevalent phenomenon in the diffusion of inter-district school choice. The paper thus supports the view that in federal systems the diffusion of policy innovations is stimulated by horizontal interactions between jurisdictions immediately after new political technologies have been invented.

The remainder of the paper proceeds as follows. In the next section, the estimation approach is discussed. Section 3 describes inter-district public school choice as a policy innovation and discusses potential factors affecting political preferences of school districts. Section 4 presents the data and estimation results, and section 5 concludes.

2 Estimation approach

Given the mere number of almost 15,000 school districts in the U.S., it seems reasonable to assume that decision makers at the district level tend to perceive the situation in nearby districts as particularly informative with regard to the prospects of new policies. Thus, the estimation approach of Hautsch and Klotz (2003), where neighbors are defined in an abstract social space, does not seem to be appropriate for the current analysis. Instead, the analysis will rely on a spatial probit specification introduced by Case (1992). The model has been developed for the cross-sectional analysis of discrete choice decisions and is particularly well suited to be applied in a situation where, due to sampling, the information on the spatial distribution of adoption decisions is incomplete. Nevertheless, the model allows for the identification of spatial interactions between jurisdictions given a spatial structure which is defined according to some broad measure of geographical proximity.

In the following, Case's model is briefly recapitulated, with emphasis on some slight modifications to adjust it to our needs. As in the standard latent variable model, the binary decision of each district depends on the expected benefit from adopting school choice, Y_i^*. The structural spatial auto-regressive model for the predisposition towards adoption is

$$Y_i^* = \phi W_i Y^* + X_i \beta + u_i, \tag{1}$$

where W_i is a $(1 \times N)$ vector of spatial weights and Y^* is the $(N \times 1)$ vector of expected benefits from adoption for all N districts. For the moment, let u_i be an i.i.d. error with zero mean and variance σ_u^2. In this model, a positive ϕ would mean that the districts' predispositions towards open enrollment are positively interdependent. Thus, if a given district's school board had a positive attitude towards the adoption of school choice, this would positively affect the attitude in neighboring districts, and, hence, increase the probability of adoption among neighbors. Now suppose that each district i belongs to some county $m(i)$ and that $n_{m(i)}$ is the number of districts in $m(i)$. Using a block-diagonal matrix of spatial weights W which, for all $i = 1, \ldots, N$, assigns the districts in $m(i)$ as neighbors to i, i's predisposition can be rewritten in a reduced-form equation

$$Y_i^* = \varrho_{m(i)} X_i \beta + \vartheta_{m(i)} \bar{X}_{m(i)} \beta + \varrho_{m(i)} u_i + \vartheta_{m(i)} \bar{u}_{m(i)}, \tag{2}$$

where $\bar{X}_{m(i)}$ is the vector of mean characteristics for districts in $m(i)$, $\bar{u}_{m(i)}$ is the mean of errors in $m(i)$, $\varrho_{m(i)} = (n_{m(i)} - 1)/(\phi + n_{m(i)} - 1)$, and $\vartheta_{m(i)} = n_{m(i)}\phi/[(1-\phi)(\phi + n_{m(i)} - 1)]$. In a variance normalized version, eq. (2) can be estimated as a spatial probit using standard maximum likelihood techniques. As noted above, the estimations presented in this paper utilize information on school district policies from a survey covering only a sample of districts.

Note that, due to the appearance of districts' mean characteristics in eq. (2), data on explanatory variables are required for all districts.[1] It should also be noted that the identification of the endogenous 'social effect' ϕ rests on the assumption that no exogenous social effect is present in the structural form eq. (1), i.e. districts' predispositions do not directly depend on the mean of exogenous variables across districts in the same county (see Manski 1993 for a discussion.).

The spatial auto-regressive model can be extended to incorporate spatially correlated shocks. This may be useful, because spatial correlation in adoption decisions could be driven by spatially correlated shocks. Not accounting for spatial error dependence could then lead to false conclusions. To account for spatial error dependence, errors in eq. (1) are assumed to follow

$$u_i = \rho W_i u + \epsilon_i, \tag{3}$$

where now ϵ_i is an i.i.d. error.

Before the data and the estimation of the model is described, it is useful to briefly discuss inter-district open enrollment as a local policy innovation in the U.S.

3 Inter-district open enrollment as a local policy innovation

As mentioned above, the policy innovation under investigation in this paper is inter-district public school choice, sometimes also called inter-district open enrollment. Basically, it allows students to attend a public school in a school district other than the district of residence. In the U.S., school choice policies have been a much discussed topic of educational reform in recent years. The significance of the inter-district version of school choice comes from the

[1] In Case (1992) survey data are used, too, but mean characteristics are estimated based on the information on districts in the sample.

fact that it will tend to increase competition for students between districts. In many states, school districts have, at least to some degree, discretionary power to determine whether they want to participate in statewide choice programs. Of course, school boards as local authorities in individual districts will rather be interested in the effects of school choice on the number and the composition of students in local schools than in potential overall effects of increased competition on school productivity. A valid model of the diffusion of open enrollment policies among districts must therefore take into account the crucial factors affecting the districts' willingness to participate in statewide inter-district choice programs.

The analysis will focus on district policies in Arkansas, California, Idaho, Massachusetts and Ohio. In 1993, 37.3% of all local school districts in these states reported to admit non-resident students at local schools.[2] In all five states, fiscal incentives for participation were set by rewarding receiving districts by additional funds. Participating districts could thus hope to raise additional revenues by attracting transfer students.

A reason for hesitation in switching to a policy of open enrollment may be limited capacity in local schools. In general, districts with crowded schools will be less willing to allow for the enrollment of transfer students. Furthermore, crowded schools are perceived as less attractive by potential transfer students and, from an ex-ante perspective, decrease the probability that the district will be successful in attracting non-resident students.

Another factor influencing participation of districts in public school choice may be the districts' location relative to large central cities. Traditionally, suburban school districts have been opposing the idea of inter-district open enrollment (Ryan and Heise 2002). Given their social and economic characteristics, suburban schools are, on average, better than urban schools, and residents in suburban districts tend to perceive inter-district transfers as a threat to the superior quality of local public schools. Furthermore, apart from

[2]Percentage adjusted for sampling weights.

a districts location relative to central urban areas, the racial composition of local public schools alone as well as the income of an average resident household may affect districts' predisposition towards open enrollment. Finally, the analysis shall account for the fact that in the sample there are three different types of districts with regard to the grades served. In Arkansas, Idaho and Ohio, all districts are unified school districts and (at least potentially) serve all grades. In California and Massachusetts, unified school districts serve students in elementary as well as secondary schools, while elementary and high school districts are more specialized.

Based on the preceding discussion, we include as control variables in our empirical specification the student-teacher ratio (STR) as a variable measuring the capacity for enrollment of transfer students; the district's revenue per student (REV) as a measure for fiscal stress; the share of minority students in local public schools (MST)[3]; the median household income (MHI); and four dummy variables, one for districts in large or mid-size central cities (D_{CITY}), one for suburban school districts (D_{SUB}), one for elementary school districts (D_{EL}) and one for high school districts (D_{HI}).

Apart from absolute characteristics as discussed so far, the predisposition towards open enrollment may also depend on the district's position relative to its geographical neighbors. Due to transportation to more distant schools being either unavailable or prohibitively costly, school districts will be able to attract students only from nearby districts. The relative attractiveness of each district for non-resident students and the characteristics of transfer students whose application for enrollment in local schools is anticipated will therefore depend on the district's relevant characteristics relative to its neighbors. To capture this, we construct two additional control variables. The first one shall pick up the relative position with respect to the share of minority students, and the second is meant to account for the relative income position. Let R_X be a district's relative position with respect to characteristic X. It is

[3] MST is defined as one minus the share of white non-Hispanic students.

conveniently defined as the difference between the district's own X and the mean of X for all contiguous districts, weighted by district enrollment.[4]

4 Data, estimation and results

4.1 The data

The data used in the analysis are a sample of school districts in Arkansas, California, Idaho, Massachusetts and Ohio. All five selected states share the common feature that they established inter-district choice programs between 1989 and 1993 and that districts were given discretionary power to decide whether they would admit nonresident students at local schools.[5] The information on school districts' open enrollment policies is from the Schools and Staffing Survey (SASS) 1993-94, providing data on a large sample of local school districts.[6] The survey asked districts whether they had 'a choice program in which students can enroll in another school or district outside their attendance area without justification based on individual special needs'. Districts which affirmed were then asked whether the program allowed for enrollment of students from other districts. In the empirical analysis, the answer to this last question is used to determine which districts did participate in inter-district open enrollment in the 1993-94 school year.

Data on the control variables are from Public Education Finance Data of the Bureau of the Census (revenues and district type indicator), the School District Demographic System of the National Center for Education Statistics (NCES) (median household income) and the Common Core of Data of the

[4]In California and Massachusetts, elementary and high school districts sometimes overlap. Districts are defined to be contiguous if they share a common border or a common territory.

[5]Choice programs started in Arkansas and Ohio in school year 1989/90, in Massachusetts and Idaho in 1991/92, and in California in 1993.

[6]To access the data, refer to National Center for Education Statistics (1998). For technical information, see National Center for Education Statistics (1996).

NCES (enrollment, number of minority students, number of teachers, and urbanicity indicator).

4.2 Estimation and results

For the five selected states, the Schools and Staffing Survey 1993-94 provides information on open enrollment policies in 653 local school districts. For the empirical analysis, the sample was reduced to 511 districts.[7] Table 1 provides some descriptive statistics on the explanatory variables.

Before estimation results are presented and discussed it should be stressed that the districts covered in the Schools and Staffing Survey are selected on the basis of a complex survey design. Thus, the analysis is not based on a random sample. We account for the effect of the survey design on the composition of the sample by including the inverse of the sampling probability as a weight for the contribution of each district in the likelihood function. Since the sample design may also induce unknown correlation in errors, robust standard errors for parameter estimates are computed using a Huber-White formula for probit models.[8]

The first step in the empirical analysis is a simple baseline regression where we completely ignore the potential impact the predispositions of neighbors may have on the attitude towards open enrollment in any given district. The

[7]21 districts had to be excluded from the sample since they have no neighbors (four districts are islands and 17 represent a whole county). Another 14 districts had missing values for explanatory variables. In a next step, districts with less than 800 students were removed from the sample. The reason for doing so is the presumption that the political behavior of a very small district will resemble that of an average school more closely than that of a larger district. The threshold of 800 students was determined by increasing the minimum number of students by increments of 100 (starting from zero) until each of the remaining districts had at least two schools. Finally, in order to identify influential observations, a linear probability model was estimated using the remaining 539 observations. Based on the approach proposed by Krasker, Kuh, and Welsch (1983), 28 observations were removed. This left 511 school districts for the analysis.

[8]See Wooldridge (2002, p. 496) for details.

Table 1

Adoption of school choice - descriptive statistics on district characteristics

Explanatory variables		Mean[a]	Std. Dev.[a]	Min.	Max.
Central city	D_{CITY}	.112	.316	0.00	1.00
Suburb	D_{SUB}	.298	.458	0.00	1.00
Elementary school district	D_{EL}	.083	.276	0.00	1.00
High school district	D_{HI}	.033	.178	0.00	1.00
Student-teacher ratio	STR	19.6	3.50	11.9	29.5
Revenues	REV [b]	4.99	1.18	2.97	11.5
Share of minority stud.	MST	.207	.254	0.00	.960
Median household income	MHI [b]	39.2	12.9	17.1	98.2
Relative pos. MST	R_{MST}	-.045	.183	-.707	.698
Relative pos. MHI	R_{MHI} [b]	1.49	9.40	-35.4	65.4

[a] Weighted by inverse of sampling probabilities; [b] In thousands of dollars.

baseline regression is meant as a first, albeit crude test whether the approach of estimating a discrete choice model for the adoption of open enrollment policies with the given set of control variables is meaningful at all. Table 2 reports the results of a weighted maximum likelihood estimation of a standard probit framework, where the latent variable model is specified as

$$\begin{aligned} Y_i^* &= X_i \beta + u_i \\ &= \beta_0 + \beta_1 D_{CITY} + \beta_2 D_{SUB} + \beta_3 STR + \beta_4 REV \\ &+ \beta_5 MST + \beta_6 MHI + \beta_7 R_{MST} + \beta_8 R_{MHI} \\ &+ \beta_9 D_{EL} + \beta_{10} D_{HI} + \beta_{11} D1 + \cdots + \beta_{14} D4 + u_i. \end{aligned} \tag{4}$$

$D1$ to $D4$ represent state dummies. Their inclusion in eq. (4) accounts for all kinds of state-specific influences on the predisposition towards open enrollment, such as differences in school choice laws, state-specific fiscal incentives for districts promoting participation in open enrollment programs or the length of time the program was in place at the time of data collection.

Table 2

Adoption of school choice - weighted probit estimates

Explanatory variables	Estimates	Slope[a]
Large or mid-size city, D_{CITY}	.237	.083
	(.218)	
Urban fringe of large or mid-size city, D_{SUB}	-.156	-.054
	(.205)	
Student-teacher ratio, STR	-.090*	-.032
	(.047)	
Revenues per student, REV	-.247**	-.086
	(.100)	
Share of minority students, MST	-1.75**	-.611
	(.484)	
Median household income, MHI	-.007	-.002
	(.009)	
Diff. between own and contiguous districts' MST	2.02**	.706
	(.609)	
Diff. between own and contiguous districts' MHI	.024*	.008
	(.013)	
Log-likelihood	-312.24	
Percent correctly predicted	66.7	

		Actual adoptions	
		Yes	No
Predicted adoptions	Yes	119	82
	No	88	222

[a] Average of estimated individual changes in probabilities, weighted by inverse of sampling probabilities; ** Significant at the 5% level; * Significant at the 10% level; Robust standard errors in parentheses; Additional regressors: D_{EL}, D_{HI} and state dummies.

In Table 2, the left column displays the parameter estimates for the specification in eq. (4), and the right column provides the average partial effects, i.e. the sample averages of estimated changes in the probability of adoption associated with a change in the explanatory variable. A quick inspection of the results shows that districts with crowded schools, as we presumed, seem to be less willing to open up local schools for non-resident students. Furthermore, districts with lower revenues per student are more inclined towards open enrollment than high revenue districts. Another noteworthy result is that both the absolute and the relative position of districts with respect to the share of minority students have an impact on the attitude towards adoption. While a higher absolute share of minority students significantly lowers the probability of adoption, the relative position has the opposite effect: an increase in the difference between own and contiguous districts' share of minority students will increase the probability that transfer students are admitted at local schools. Finally, once we control for the share of minority students and the districts' geographical position relative to central cities, the absolute position in median household income does not have any effect on open enrollment policies. However, the coefficient of the relative income position is weakly significant, suggesting that an increase in the difference between own and contiguous districts' median household income will increase the probability that non-resident students are admitted at local schools.

The significance of a number of district characteristics together with the fact that the model correctly predicts two thirds of all adoption decisions suggests that all explanatory variables together provide a strong signal for the predisposition of school districts to participate in open enrollment programs. Thus we can hope that the spatial probit, where we rely on neighbors' mean characteristics in order to identify the impact of neighbors predispositions towards adoption, is capable to provide significant results on potential interdependencies among districts.

Results for the probit with spatial correlation in the latent variable are presented in Table 3. They suggest that predispositions towards adoption of inter-district open enrollment are positively interdependent among school districts, and that the impact of neighbors' predispositions on the probability of adoption is substantial. For an average district, a one percentage point increase in the share of neighboring districts for which participation in

Table 3

Adoption of school choice - weighted spatial probit estimates

	Probit with spatial correlation in latent variable only		Probit with spatial correlation in latent variable and errors	
Explanatory variables	Estimates	Slope[a]	Estimates	Slope[a]
Neighbors' predisposition, ϕ	.428** (.193)	.148[b]	.485** (.217)	.167[b]
Large or mid-size city, D_{CITY}	.165 (.214)	.059	.151 (.207)	.055
Urban fringe of large or mid-size city, D_{SUB}	-.097 (.186)	-.035	-.084 (.180)	-.031
Student-teacher ratio, STR	-.087** (.042)	-.031	-.079* (.043)	-.029
Revenues per student, REV	-.214** (.089)	-.076	-.188* (.101)	-.068
Share of minority students, MST	-1.09** (.458)	-.390	-.973** (.473)	-.354
Mean household income, MHI	-.004 (.007)	-.001	-.004 (.006)	-.001
Diff. between own and contiguous districts' MST	1.77** (.557)	.631	1.70** (.523)	.617
Diff. between own and contiguous districts' MHI	.023* (.012)	.008	.022** (.011)	.008
Spatial correlation in errors, ρ	-	-	-.388* (.222)	-

		Probit with spatial correlation in latent variable only			Probit with spatial correlation in latent variable and errors	
Log-likelihood		-309.20			-308.68	
Percent correctly predicted		66.7			66.3	
		Actual adoptions			Actual adoptions	
		Yes	No		Yes	No
Predicted adoptions	Yes	118	81	Yes	119	84
	No	89	223	No	88	220

[a] Average of estimated individual changes in probabilities, weighted by inverse of sampling probabilities; [b] Computed using predicted adoptions of neighbors. See text for details; ** Significant at the 5% level; * Significant at the 10% level; Robust standard errors in parentheses; Additional regressors: D_{EL}, D_{HI} and state dummies.

open enrollment is anticipated increases the probability of adoption by 0.15%. This means that a district with a share of neighbors expected to adopt school choice which is one standard deviation above that of an otherwise identical reference district is about 6% more likely to admit non-resident students at local schools.[9] Thus, in their open enrollment policies, school districts as local jurisdictions have been heavily affected by the anticipated behavior of neighboring districts. Since the districts in the sample did not have much experience with open enrollment at the time of data collection, the results derived from the spatial probit are evidence against the hypothesis that jurisdictions tend to free-ride on policy experiments of others. Of course, some school districts may have been engaged in some sort of free-riding activity, but the results of the spatial probit suggest that for the average district, the incentive to choose similar open enrollment policies as in neighboring districts was much stronger than the incentive to exploit information externalities.

Apart from the predisposition of neighbors, a number of district characteristics affect the discrete choice decision whether to participate in open enrollment. The coefficient of the student-teacher ratio is highly significant and shows the expected sign. An additional student per teacher lowers the probability that open enrollment policies are adopted by 3.1%. At the same time, higher revenues per student make districts less willing to participate in inter-district school choice. $ 1,000 of additional revenues per student make the average district 7.6% less likely to admit non-resident students. Furthermore, a one percentage point increase in a district's share of minority

[9]The estimate for the strength of neighbors' influence is computed as follows. The model predicts an innovation, i.e. $\hat{Y}_i = 1$, if $\hat{Y}_i^* > 0$ and $\hat{Y}_i = 0$ otherwise, where, in matrix notation, $\hat{Y}^* = (I - \hat{\phi} W)^{-1} X \hat{\beta}$. The estimated marginal change in the probability of adoption associated with a change in the share of neighbors who are expected to participate is then given as

$$\hat{\phi}\, N^{-1} \sum_{i=1}^{N} f(\hat{\phi}\, W_i \hat{Y} + X_i \hat{\beta}),$$

where f is the density of the standard normal distribution.

students, with all other things being equal, makes the district 0.4% less likely to adopt open enrollment. This may reflect the fact that districts with a higher share of minority students will, on average, expect to be less successful in attracting students from elsewhere. Thus, it may not be worthwhile for these districts to adjust their policies towards open enrollment regulations. Interestingly enough, the coefficient of the relative position in the share of minority students shows the opposite sign. Increasing the difference between own and contiguous districts' share of minority students by one percentage point increases the probability of adoption by 0.6%. This is in line with the argument that districts with more favorable social conditions relative to their immediate neighbors tend to perceive inter-district transfers as a threat to the quality of local public schools and, hence, are less willing to accept the enrollment of transfer students. Finally, the partial effect of the relative position in median household income is weakly significant. The average partial effect indicates that an increase in the difference between own and contiguous districts' median household income by \$ 1,000 increases the probability of adoption of open enrollment by 0.8%.

As mentioned in section 2, it is important to test for spatial error dependence as a potential source for spatial correlation in districts' predispositions towards adoption of school choice. We do this by estimating a weighted probit with spatial correlation both in the latent variable and in errors according to eq. (3). The output for his regression is displayed as the second set of results in Table 3. The first and most important thing to note is that allowing for spatial error dependence does not break the link between neighbors' predispositions. On the contrary, the link becomes even stronger: For an average district, a one percentage point increase in the share of neighboring districts expected to adopt open enrollment now increases the probability of adoption by 0.17% compared to 0.15% in the model without spatial error dependence. A district with a share of neighbors expected to participate which is one standard deviation above that of an otherwise identical reference district is

7% more likely to admit transfer students. At the same time, weak evidence is found for the presence of negative spatial correlation. The remaining parameter estimates are of similar size as before and need not be discussed again. Note that accounting for spatial error dependence does only marginally increase the log-likelihood of the model, and that doing so slightly reduces the percentage of correctly predicted decisions. We conclude that there is an insignificant amount of (negative) spatial correlation in errors which is unable to explain the strong positive spatial correlation in predispositions towards adoption of open enrollment policies.

Collectively, the results of the spatial probit estimations suggest that after open enrollment had been invented as an additional opportunity for local school districts to compete for students and funds, the attitude of district decision makers was heavily affected by predispositions of neighboring districts towards the new policy. The hypothesis that local policy innovation in a decentralized public sector is hampered by an incentive for decision makers to free-ride on experimentation activities in other jurisdictions is clearly rejected by the evidence on the spatial distribution of adoption decisions. School districts as independent local jurisdictions did positively interact in the diffusion of inter-district open enrollment in the U.S., and the impact of neighboring districts on the adoption probability was substantial.

5 Conclusion

It is in the nature of the political process that policy makers often face difficult discrete choice decisions. Particularly interesting and practically relevant examples are decisions to experiment with new political concepts. This paper provides evidence on the behavior of local governments in the adoption of a significant policy innovation in a large number of local jurisdictions. There are theoretical arguments both in favor of behavioral convergence, i.e. neighborhood influence in the adoption of policy innovations, and in favor of behavioral divergence due to incentives to free-ride on policy experiments of others. The evidence provided in this paper suggests that the free-riding incentives are dominated and that in their adoption decisions, local governments are positively affected by anticipated decisions in benchmark jurisdictions. This supports the view that in federal systems and, more generally in systems with a decentralized public sector, the diffusion of policy innovations is stimulated by horizontal interactions between jurisdictions.

Still, there are many open questions with respect to decentralized decision making and the diffusion of policy innovations. For instance, in the identification of spatial interactions between jurisdictions, this paper relies on the spatial distribution of adoption decisions in a cross-section of local jurisdictions. Clearly, for future empirical research, it should be worthwhile to also take into account dynamic aspects of the diffusion of new political technologies.

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