# Path Dependence and Organizational Performance:

# Representative Bureaucracy, Prior Decisions, and Academic Outcomes

Kenneth J. Meier, Texas A&M University

Robert D. Wrinkle, University of Texas Pan American

Scott Robinson, Rice University and Texas A&M University

J. L. Polinard, University of Texas Pan American

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An essential truism of the American policy process is that prior choices often dictate the outcome of policy events. Whether the result of incremental decisions, positive returns to institutions, or significant fixed costs (Pierson 2000; Arthur 1994; North 1990) current policies are generally path dependent, that is, constrained by prior actions. Even though path dependence may sound like a platitude, few studies or theories account for this rather obvious quality of political decisions. Many theoretical descriptions of path dependence exist, but the number of empirical studies is relatively few. This study combines the logic of path dependence with the literature on representative bureaucracy to examine how educational organizations make decisions and how these early decisions have a long run impact on student outcomes.

Specifically, this study will examine a sequence of three decisions. First, how are teachers recruited to schools? Second, how do recruitment decisions affect decisions on academic grouping or tracking of students? In the educational arena students are often segregated into separate tracks for vocation and academic training at an early age with significant subsequent consequences for their academic attainment and success (Lee and Bryk 1988; Kilgore 1991; Kershaw 1992; Oakes 1985; Gamoran and Mare 1989; Shavit 1990). Third, how do these academic grouping decisions influence subsequent student performance?

### Path Dependence

Path dependence is an ill-defined concept that can take on a variety of meanings depending on context. Path dependence exists when past decisions constrain current options. Path dependence conditions the relationship between inputs and outcomes, where outcomes are dependent on the decisions made at the input stage. Within this description, there can be considerable variability. This definition can include *strong path dependence* (where current options are severely limited, i.e., restricted to one or a few alternatives due to past choices and path choices radically alter the relationships between inputs and outcomes) or *weak path dependence* (where past decisions are one of several factors affecting an organization's choice set, and path choice only modestly affects the relationship between inputs and outcomes). The key is that the past choice of a path may affect subsequent actions.

If all possible paths are similar, the inability to change paths is not a problem. Only when outcomes differ depending on one's path does path dependence become important to organizations. Furthermore, if changing paths were easy, then strong path dependence should be rare. Organizations could simply opt to switch paths whenever change was needed. Where large costs are associated with changing paths, strong path dependence is more likely to affect behavior in the long term (for a more detailed discussion of the application of path dependence to the study of public organizations, see Meier and Robinson 2000).

Path dependencies can be viewed as the natural products of institutional development–the creation of bureaucratic structures, routines and standard operating procedures. North (1990:112) contends path dependence reflects the positive returns of

institutions--those structures and procedures established by the organization to deal with problems. In addition to the costs of altering such institutions, a variety of other factors reinforce the process. "Once a development path is set on a particular course, the network externalities, the learning process of organizations, and the historically derived subjective modeling of the issues reinforce the course" (North 1990: 99). These institutions, reinforced by organizational norms and culture, are what create path contingencies.

An organization's initial choices that establish future paths may be without constraint or at least not path dependent. Only future options are limited. After all, the QWERTY typewriter was only one of countless options. Choices early in an organization or a process often decide how to structure the organization or how to structure a set of decisions and thus fit what Barnard (1968) contends is the leadership function.

Path dependency is an appropriate metaphor for our study. Schools are organizations that make personnel decisions. These decisions include decisions on hiring minority teachers. The theory of representative bureaucracy holds that these hiring decisions influence future decisions in the organization. In schools one such set of decisions involve grouping and tracking students. Such decisions may limit or enhance student performance. Both the hiring of minority teachers and the subsequent

decisions to sort and group students can be considered as establishing at least a weak path dependent process that limits future options by teachers and students (see Oakes 1985; Meier and Stewart 1991).

In fact, a deep understanding of path dependence is necessary to any serious discussion of educational reform or organizational change. If processes are path dependent, then changing inputs (without concomitant changes in procedures, technologies, or organizational culture) will have little effect. This study will illustrate how past decisions influence outcomes late in the educational process. We suggest that changing inputs late in the process will have a much smaller affect than modest changes early in the tracking process.

**Representative Bureaucracy and Organizational Decisions**

Representative bureaucracy is the major theory used to relate minority interests to how organizations make decisions and the equity of organizational outputs (Meier 1993). The theory of representative bureaucracy links the values of individual bureaucrats to organizational decisions (Selden et al. 1998). It assumes that because organization rules cannot control every contingency, individual bureaucrats exercise discretion by making decisions that reflect their values. Thus, if a bureaucracy is representative of the clientele it serves (in this case, African American or Latino students), then it is more likely to make decisions that benefit that public (Thielemann and Stewart 1996; Rainey 1997). In

this paper we examine representative bureaucracy within the context of path dependency to show how representative bureaucracies are created and the way they mitigate the impact of policies that negatively affect their clientele groups. Specifically, we are interested in examining the relationship of representative bureaucracies to the enrollment of minority students in vocational and gifted classes and the subsequent impact of those decisions upon the academic performance of minority students.

Gifted classes generally are thought to be the best education that a school district provides. Access to these classes by African American and Latino students is a substantive benefit to the minority community (Serwatha, Deering and Stoddard 1989). The assignment of students to vocational classes is somewhat more problematic. Clearly, one of the significant influences upon a student's opportunity to learn is the stratification within a school (Gamoran 1987). Students assigned to academic or gifted classes are likely to have a greater academic opportunity that those who are placed in a vocational track (Natriello, Pallas and Alexander 1989). For some students, however, a vocational course may be appropriate and may well be superior to a general nonacademic track, at least in the short run. Even though vocational slots may be scarce and sought after, however, they expose students to a less rigorous curricular, and, therefore, can negatively affect overall student performance.

**The Data**

Educational institutions are excellent organizations to serve as test sites in the examination of bureaucracy, path dependency, and organizational outcomes. Schools employ numerous professionals who exercise discretion in their decision-making, and

school districts generate reams of data that can be used for analysis. Our analysis focuses on data from Texas school districts. Few states are as good a test site as is Texas. The state is large and diverse, with a large number of multi-racial school districts. We examine the universe of Texas districts (n = 1022); all data are for 1999. We present results for African American and Latino students.

**Control Variables**

We use an educational production function to perform our organizational analysis (Burtless 1996). The performance in question should be a function of environmental constraints, resources applied to the process, and school district policies designed to improve student performance. These independent variables are essentially control variables designed to ensure that the relationship, if any, between minority teachers and administrators and student performance do not lead one to spurious inferences. All are frequently used in education production functions.

Poverty constrains student performance and is included as a control variable. Poverty not only means students lack access to learning tools in the home (e.g., computers), but it often correlates with other major problems that affect learning, including less stable and less supportive home environments (Necochea and Cune 1996; Fuller, et. al. 1996). We include two measures of poverty in our equations: the percentage of students from low-income families, measured as eligibility for free or reduced-price school lunches, and the percentage of African American families or Latino families in the school district living below the poverty line. We expect relationships between poverty and performance will be negative.

We control for the educational level of African Americans and Latinos within the district. An educated minority community is a powerful resource for the educational attainment of their children (see, e.g., Coleman, et. al., 1966). The higher the educational attainment of the minority community (measured as percent with a high school diploma), the more likely that community is to be effective in pressing its demands upon the local educational policy-making establishment (Meier and Stewart, 1991; Polinard, et al., 1994).

To ensure that the relationship between a representative bureaucracy and academic performance is not an artifact of an ample district budget, which might mean that richer districts could afford to hire additional minority teachers and administrators, we control for instructional expenditures per pupil. The conventional wisdom, expressed by Hanushek (1996), contends that the relationship between money and student outcomes is not consistently positive. Several scholars recently have challenged this finding (Hedges and Greenwald 1996; Lockwood and McLean 1997; Murray 1995; and Evans, Murray, and Schwab 1997; Wilson 2000).

We use two expenditure variables: state aid and instructional funds per pupil. The provision of state aid is intended to compensate for an inadequate local tax base, a condition common in districts with large numbers of minority students. We use instructional funds to tap a focus on academics, rather than spending on office furniture, football teams or other, non-instructional uses. We expect both relationships to be positive.

It is a truism that successful schools produce successful students. In any analysis, therefore, one needs to control for the learning environment. We do so by using a number of measures: class size, two teacher variables--salary and average years of teacher experience--, as well as an overall measure of school quality (Weiher 2000). The school quality measure helps control for variation between schools. Obviously, not all schools are equal; some schools do a better job than others. Our measure of school quality is the performance of Anglo students on statewide-standardized tests.

We expect that class size, as measured by the average number of students per teacher in the district, will be negatively related to student performance (see Hedges and Greenwald 1996; Hanushek 1996, 54; Nye, et. al., 1992) while gifted class enrollments (percent of students in) and attendance should be positively related. We also expect positive regression coefficients for the average teacher salary. To make sure none of the relationships are a function of large minority populations, we also control for percent black and Latino students in the representative equations.

**Representation Variables**

Representational theory suggests that bureaucrats will work to serve the interests of groups they represent (Mosher 1968). A substantial body of literature documents the link between representation in elected institutions and representation in bureaucracies (Kerr and Mladenka 1994). A growing body of literature suggests that, under certain conditions, passive bureaucratic representation can produce active representation (Hindera 1993; Hindera and Young 1998; Meier 1993; Meier, Wrinkle and Polinard 1999; Selden, Brudney and Kellough 1998). Meier and Stewart (1991) contend that

education is a policy area that is singularly susceptible to administrative influence. In terms of educational institutions, we have three levels of representation to consider: elected school board members, school administrators and teachers.

Prior research has found that the greater the percentages of school board members who are minorities, the greater the percentage of minority administrators (Meier and Stewart 1991; Polinard, Wrinkle and Longoria 1990). Essentially, electing school board members and hiring school administrators are parts of a political process, and we expect the presence of minority school board members to result in the employment of additional minority administrators.

An increase in the presence of minority administrators should lead to an increase in the presence of minority teachers (see Meier and Stewart 1991; Polinard, Wrinkle and Longoria 1990). Then, the greater the percentage of minority teachers in a district, the more favorable policies for minorities that district should adopt.

Teachers are "street-level" bureaucrats. As such, they are a crucial element in a student's educational environment. A representative bureaucracy hypothesis is that the presence of minority teachers will improve the performance of minority students. Existing educational literature suggests several reasons why this might be so. First, minority teachers mitigate the negative consequences of grouping, tracking and discipline (Meier and Stewart 1991). Second, minority teachers are more effective at teaching minority students (Aaron and Powell 1982; Moore and Johnson 1983). Finally, minority teachers serve as role models for minority students (Cole 1986).

**Decision and Outcome Variables**

We use several variables to represent decisions and outcomes. Our first dependent variable is the percentage of minority (black/Latino) teachers. Following the model explicated above, we expect that political representation and a representative bureaucracy at higher levels will increase the numbers of minority teachers (See Polinard, Wrinkle and Longoria 1990). We then look at vocational assignments as well as gifted class assignments. These two divergent tracks (paths) are important stages for minority students. The education literature is replete with analyses of the impact of tracking on academic achievement of students (see Oakes, 1985). We expect that minority teachers recognize the path dependent nature of education and will reduce the assignment of minority students to vocational classes, while increasing the assignment of students to gifted classes.

The state of Texas requires students in several grades to take standardized tests (TAAS) each year. We examine the consequences of the divergent tracks by examining the minority student pass rate on the TAAS exam. We expect that the minority pass rates of the TAAS exam will be significantly affected by decisions. Specifically, we expect that vocational class assignments will have a negative effect upon TAAS scores, while gifted class assignments will have a positive effect upon the scores.

## Findings

As can be seen in Table 1, the determinants of street-level educational bureaucrats are as expected. Co-ethnic elected officials and administrators positively and significantly contribute to increased percentages of black and Latino teachers. These relationships hold even when controlling for the composition of the student body. This

finding supports earlier research (see Meier and Stewart 1991; Polinard, Wrinkle and Longoria 1990). Most control variables are either insignificant or in the expected direction; as our concerns are representation and the path dependence of organizations, we do not discuss the relationships for the control variables.

Table 1 About Here

When we turn to assignments to gifted and talented classes, a consistent pattern of results emerges. As expected, the representative street-level bureaucracy positively influences gifted class assignments. For both groups, the greater the percentage of minority teachers in a district, the greater the percentage of minority students assigned to gifted classes. The coefficient is slightly larger for Latino teachers, as is the R-square for the Latino equation.

Table 2 About Here

In addition, the percentage of black administrators also significantly contributes to assignment of black students to gifted classes; the coefficient for Latino administrators is insignificant. This finding suggests that the mechanism of representative bureaucracies is somewhat different for the two groups.

In Table 3, the percentage of vocational assignments is regressed on our independent variables. These two regressions provide some interesting contrasts. Assignments to vocational education are almost all done on a proportional basis. The minority student population dominates the model so that the remaining variables are rarely significant. A simple regression of students on vocational assignments yields an R-square of .92 for black students and .98 for Latino students. As a result, even those

other variables that are significant should be interpreted with caution since the models contain a high degree of collinearity. For black student vocational assignments, it is the percentage of black administrators that is significant, not the street-level bureaucratic variable as expected. This finding is reversed for Latino students. Interestingly, the greater the percentage of black administrators, the greater the assignment of black students to vocational classes. The same positive relationship exists for Latino teachers as well as Latino school board representatives. Again, given the level of collinearity in the equation, how much confidence we should have in any relationships other than those for minority students is open to question.

Table 3 About Here

The last stage in the analysis is the examination of the impact these prior decisions have on the academic achievement of black and Latino students. As noted above, our measure is the percentage of students of each group passing the TAAS exam. The results are found in Table 4.

Table 4 About Here

The findings are unambiguous. The early tracking decisions significantly influence academic achievement. For both black and Latino students, vocational assignments depress the pass rate on the TAAS exam. The impact for black students is slightly greater than it is for Latinos. Also as expected, assignment to gifted classes significantly and positively affects the pass rates for black and Latino students. Again, here the impact is greater for blacks than it is for Latinos. The representative coefficients

are essentially zero, suggesting that teachers influence test scores indirectly via decisions on grouping and tracking.

## Conclusions

School districts are similar to other large, bureaucratic organizations. They vary widely in how they take inputs (resources) and translate them into outputs (educated students.) In the course of their activities, prior decisions influence policy outcomes. A large body of literature exists that suggests a bureaucracy representative of its clientele can significantly affect outcomes favorable to minority students.

We find that district assignments of black and Latino students to either vocational or gifted classes dramatically effects the academic achievement of these minority students. Minority teachers (street-level bureaucrats) also influence these outcomes via class assignments. An increase in minority teachers significantly contributes to increased gifted class assignments for the minority student.

Theoretically, this paper fits representative bureaucracy within the literature on path dependence. Who the organization hires has long-run ramifications for organizational performance. Hiring minority teachers is associated with more minority students being assigned to gifted classes (vocational classes appear to be influenced primarily by student numbers). Assignments to gifted and vocational tracks in turn then influence student performance on state-wise tests. The paths outlined are not rigid, but at the same time early decisions by the organization (who to hire, who to track) constrain later actions by the organization (who to track, how well students perform).

REFERENCES

Aaron, Robert and Glen Powell. 1982. "Feedback Practices as a Function of Teacher and Race During Reading Group Instruction," *Journal of Negro Education* 51(Winter): 50-59.

Arthur, Brian W. 1994. *Increasing Returns and Path Dependence in the Economy.* Ann Arbor: University of Michigan Press.

Bidwell, Charles E. and John D. Kasarda. 1975. "School District Organization and Student Achievement," *American Sociological Review* 40: 55-70.

Barnard, Chester I. 1968. *The Functions of the Executive.* Cambridge, Mass: Harvard University Press.

Brookover, Wilbur B. 1985. "Can We Make Schools Effective for Minority Students?" *Journal of Negro Education* 54: 257-268.

Burtless, Gary. 1996. *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success.* Washington: Brookings.

Cole, Beverly P. 1986. "The Black Educator: An Endangered Species," *Journal of Negro Education* 55(Summer): 326-334.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander B. Mood, Frederic D. Weinfeld, and Robert L. York. 1966. *Equality of Educational Opportunity.* Washington, DC: Government Printing Office.

Evans, William N., Shelia E. Murray, and Robert M. Schwab. 1997. "Schoolhouses, Courthouses, and Statehouses after Serrano," *Journal of Policy Analysis and Management* 16(Winter): 10-31.

Fuller, Bruce, Costanza Eggers-Pierola, Susan D. Holloway, Xiaoyam Liang and Marylee F. Rambaud. 1996. "Rich Culture, Poor Markets: Why Do Latino Parents Forego Preschooling?" *Teachers College Record* 97: 400-418.

Gamoran, Adam. 1987. "The Stratification of High School Learning Opportunities," *Sociology of Education* 60: 135-155.

Gamoran, Adam and Robert D. Mare. 1989. "Secondary School Tracking And Educational Inequality: Compensation, Reinforcement, or Neutrality?" *American Journal of Sociology* 94(March): 1146-1183.

Hanushek, Eric A. 1996. "School Resources and Student Performance." In *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success,* Gary Burtless ed., Washington: Brookings.

Hanushek, Eric A. and Richard R. Pace. 1995. "Who Chooses to Teach (and Why)?" *Economics of Education Review* 14:107-117.

Hedges, Larry V. and Rob Greenwald. 1996. "Have Times Changed? The Relation between School Resources and Student Performance." In *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success,* Gary Burtless ed., Washington: Brookings.

Hindera, John. 1993. "Representative Bureaucracy: Imprimis Evidence of Active Representation in the EEOC District Offices," *Social Science Quarterly* 74(March): 95-108.

Hindera, John and Cheryl Young. 1998. "Representative Bureaucracy: The Theoretical Implications of Statistical Interactions," *Political Research Quarterly* 51(September): 655-72.

Jencks, Christopher and Meredith Phillips. 1998. *The Black-White Test Score Gap.* Washington: The Brookings Institution.

Kerr, Brinck and Kenneth R. Mladenka. 1994. "Does Politics Matter? A Times-Series Analysis of Minority Employment Patterns," *American Journal of Political Science* 38: 918-943.

Kershaw, Terry. 1992. "The Effects of Educational Tracking on the Social Mobility of African Americans," *Journal of Black Studies* 23: 152-169.

Kilgore, Sally B. 1991. "The Organizational Context of Tracking in Schools," *American Sociological Review* 56: 189-203.

Lee, Valerie E. and Anthony S. Bryk. 1988. "Curriculum Tracking as Mediating the Social Distribution of High School Achievement," *Sociology of Education* 61: 78-94.

Lockwood, Robert E., and James E. McLean. 1997. "Twenty-Five Years of Data on Educational Funding and Student Achievement: What Does It Mean?" *Educational Research Quarterly* 21:3-12.

Meier, Kenneth J. 1984. "Teachers, Students and Discrimination: The Policy Impact of Black Representation," *Journal of Politics* 46: 252-263.

Meier, Kenneth J. 1993. *Politics and the Bureaucracy. 3rd. Ed. Monterey, CA: Brooks-Cole.*

Meier, Kenneth J., Robert D. Wrinkle, and J.L. Polinard. 1999. "Equity and Excellence in Organizations," *American Review of Public Administration* 29 (March), 5-18.

Meier, Kenneth J. and Joseph Stewart. 1991. *The Politics of Hispanic Education*. Albany: SUNY Press.

Meier, Kenneth J. and Scott Robinson. 2000. "Path Dependence and Organizational Behavior: Bureaucracy and the Impact of Internal Standards." Texas A&M University typescript.

Moore, Helen A. and David R. Johnson. 1983. "A Reexamination of Elementary School Teachers' Expectations: Evidence of Sex and Ethnic Segmentation," *Social Science Quarterly* 64(September): 460-475.

Mosher, Frederick C. 1968. *Democracy and the Public Service.* Oxford University Press.

Murray, Sheila E. 1995. "Two Essays on the Distribution of Education Resources and Outcomes." Unpublished PhD. dissertation, Department of Economics, University of Maryland.

Natriello, Gary, Aaron M. Pallas and Karl Alexander. 1989. "On the Right Track? Curriculum and Academic Achievement," *Sociology of Education*, 62(April): 109-118.

Necochea, Juan and Zullmara Cune. 1996. "A Case Study of Within District School Funding Inequities." *Equity & Excellence in Education* 29: 69-77.

North, Douglas C. 1990. *Institutions, Institutional change and Economic Performance.* Cambridge: Cambridge University Press.

Nye, B.A., J. Boyd-Zacharias, B.D. Fulton, and M.P. Wallenhorst. 1992. "Smaller Classes really are Better," *American School Board Journal* May: 31-33.

Oakes, Jeannie. 1985. *Keeping Track: How Schools Structure Inequality.* New Haven: Yale University Press.

Pierson, Paul. 2000. "Increasing Returns, Path Dependence, and the Study of Politics." *American Political Science Review* 94 (June): 251-268.

Polinard, J. l., Robert D. Wrinkle and Tomas Longoria. 1990. “Education and Governance: Representational Links to Second Generation Discrimination.” *Western Political Quarterly*: 631-646.

Polinard, J. L., Robert D. Wrinkle, Tomas Longoria and Norman Binder. 1994. *Electoral Structure and Urban Policy: The Impact on Mexican American Communities.* Armonk, New York: M. E. Sharpe.

Rainey, Hal G. 1997. *Understanding and Managing Public Organizations*. San Francisco: Jossey-Bass.

Selden, Sally Coleman, Jeffrey L. Brudney, and J. Edward Kellough. 1998. “Bureaucracy as a Representative Institution: Toward A Reconciliation of Bureaucratic Government and Democratic Theory,” *American Journal of Political Science* 42 (July): 716-29.

Serwatha, Thomas S., Sharian Deering and Ann Stoddard. 1989. "Correlates of the Underrepresentation of Black Students in Classes for Gifted Students," *Journal of Negro Education* 58(Autumn): 520-530.

Shavit, Yossi. 1990. "Segregation, Tracking and the Educational Attainment of Minorities: Arabs and Oriental Jews in Israel," *American Sociological Review* 55(February): 115-126.

Theilemann, Gregory S. and Joseph Stewart, Jr. 1996. "A Demand Side Perspective on the Importance of Representative Bureaucracy," *Public Administration Review* 56: 168-73.

Weiher, Gregory. 2000. "Minority Student Achievement: Passive Representation and Social Context in Schools," *Journal of Politics* 62: 886-895.

Wilson, Kathryn. 2000. "Using the PSID to Study the Effects of School Spending," *Public Finance Quarterly* 28: 428-51.

**Table 1. The Determinants of The Racial Composition of Street Level Bureaucrats**

| | Dependent Variable = % Black Teachers | | Dependent Variable = % Latino Teachers | |
|---|---|---|---|---|
| Independent Variable | Slope | Error | Slope | Error |
| % Black/Latino Administrators | .315 | .020<br>(15.98) | .549 | .018<br>(30.90) |
| % Black/Latino Representatives | .038 | .016<br>(2.37) | .093 | .018<br>(5.21) |
| % Black/Latino Students | .262 | .014<br>(19.00) | .214 | .016<br>(13.33) |
| **Control Variables** | | | | |
| School Quality | -.084 | .015<br>(5.61) | -.077 | .031<br>(2.49) |
| Black/Latino Education % | -.003 | .005<br>(.58) | .047 | .015<br>(3.10) |
| Black/Latino Poverty | -.009 | .004<br>(2.13) | .000 | .011<br>(.03) |
| Low Income Students | .015 | .007<br>(2.25) | .023 | .019<br>(1.23) |
| Teachers Salaries (000) | .089 | .074<br>(1.20) | .357 | .154<br>(2.33) |
| Teacher Experience | .097 | .066<br>(1.47) | -.377 | .133<br>(2.83) |
| Class Size | .185 | .083<br>(2.22) | .329 | .170<br>(1.93) |
| State Aid Percentage | .001 | .006<br>(.11) | .014 | .011<br>(1.27) |
| Funding per Student (000) | .307 | .234<br>(1.31) | .429 | .472<br>(.91) |
| Adjusted R-Square | .73 | | .84 | |
| F | 232.79 | | 441.27 | |
| Standard Error | 3.40 | | 6.87 | |
| N of Cases | 1022 | | 1022 | |

t-scores are in parentheses.

**Table 2. The Determinants of Gifted Class Assignments**

| | Dependent Variable = % Black Gifted | | Dependent Variable = % Latino Gifted | |
|---|---|---|---|---|
| Independent Variable | Slope | Error | Slope | Error |
| % Black/Latino Teachers | .490 | .035 (14.11) | .640 | .032 (20.11) |
| % Black/Latino Administrators | .075 | .024 (3.09) | -.010 | .026 (.41) |
| % Black/Latino Representatives | -.016 | .018 (.91) | .027 | .018 (1.46) |
| % Black/Latino Students | .287 | .018 (16.23) | .378 | .018 (21.45) |
| **Control Variables** | | | | |
| School Quality | -.040 | .017 (2.30) | -.182 | .033 (5.57) |
| Black/Latino Education % | .002 | .006 (.28) | .033 | .016 (2.07) |
| Black/Latino Poverty | -.016 | .491 (3.31) | -.030 | .011 (2.65) |
| Low Income Students | .004 | .007 (.61) | .083 | .019 (4.29) |
| Teachers Salaries (000) | .173 | .083 (2.09) | .209 | .157 (1.34) |
| Teacher Experience | -.202 | .074 (2.74) | -.302 | .136 (2.22) |
| Class Size | .021 | .094 (.22) | .311 | .177 (1.76) |
| State Aid Percentage | .021 | .095 (.22) | .034 | .012 (2.94) |
| Funding per Student (000) | .595 | .287 (2.08) | .792 | .524 (1.51) |
| Adjusted R-Square | .76 | | .90 | |
| F | 248.76 | | 712.56 | |
| Standard Error | 3.74 | | 6.90 | |
| N of Cases | 1010 | | 1010 | |

t-scores are in parentheses.

**Table 3. The Determinants of Vocational Assignments**

| Independent Variable | Dependent Variable = % Black Vocational Slope | Error | Dependent Variable = % Latino Vocational Slope | Error |
|---|---|---|---|---|
| % Black/Latino Teachers | .029 | .020 (1.49) | .083 | .017 (4.98) |
| % Black/Latino Administrators | .081 | .013 (6.02) | -.004 | .014 (.27) |
| % Black/Latino Representatives | -.017 | .010 (1.73) | .020 | .010 (2.11) |
| % Black/Latino Students | .968 | .010 (95.98) | .935 | .009 (101.15) |
| **Control Variables** | | | | |
| School Quality | -.008 | .010 (.85) | .026 | .017 (1.52) |
| Black/Latino Education % | .670 | .337 (1.99) | .014 | .009 (1.59) |
| Black/Latino Poverty | -.360 | .281 (1.28) | -.010 | .006 (1.66) |
| Low Income Students | -.003 | .004 (.65) | .012 | .010 (1.16) |
| Teachers Salaries (000) | .109 | .048 (2.26) | -.014 | .085 (.17) |
| Teacher Experience | -.122 | .042 (2.91) | -.162 | .072 (2.25) |
| Class Size | -.067 | .056 (1.18) | .030 | .097 (.31) |
| State Aid Percentage | .006 | .004 (1.57) | .009 | .006 (1.46) |
| Funding per Student (000) | -.060 | .159 (.37) | .676 | .273 (2.47) |
| Adjusted R-Square | .97 | | .98 | |
| F | 2684.57 | | 3845.10 | |
| Standard Error | 2.05 | | 3.52 | |
| N of Cases | 958 | | 958 | |

t-scores are in parentheses.

**Table 4. Path Dependence: Early Decisions Shape Results**

| Independent Variable | Dependent Variable = Black Pass Rate Slope | Error | Latino Pass Rate Slope | Error |
|---|---|---|---|---|
| **Path Decisions** | | | | |
| Gifted Classes | .545 | .114 (4.77) | .145 | .048 (2.99) |
| Vocational Assignments | -.229 | .073 (3.14) | -.179 | .034 (5.28) |
| % Black/Latino Teachers | -.188 | .132 (1.42) | .064 | .114 (1.14) |
| % Black/Latino Administrators | -.057 | .083 (.68) | -.051 | .038 (1.35) |
| % Black/Latino Representatives | .005 | .058 (.09) | -.013 | .027 (.48) |
| **Control Variables** | | | | |
| School Quality | .989 | .089 (11.16) | .804 | .052 (15.47) |
| Black/Latino Education % | .057 | .038 (1.52) | .050 | .030 (1.69) |
| Black/Latino Poverty | -.130 | .027 (4.71) | -.028 | .019 (1.46) |
| Low Income Students | -.039 | .034 (1.13) | .012 | .010 (1.16) |
| Teachers Salaries (000) | .177 | .390 (.45) | -.053 | .031 (1.73) |
| Teacher Experience | -.099 | .343 (.29) | .112 | .215 (.52) |
| Class Size | .315 | .552 (.60) | -.442 | .302 (1.46) |
| State Aid Percentage | .071 | .029 (2.46) | .066 | .018 (3.60) |
| Funding per Student (000) | .423 | 1.913 (.22) | .954 | .931 (1.03) |
| Adjusted R-Square | .30 | | .31 | |
| F | 18.23 | | 28.58 | |
| Standard Error | 11.91 | | 9.77 | |
| N of Cases | 607 | | 894 | |

t-scores are in parentheses.