POLICY STUDY

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ACTUAL PAY:
A SURVEY OF MISSOURI PUBLIC SCHOOL SUPERINTENDENT SALARY AND BENEFIT PACKAGES

By Audrey Spalding

I. INTRODUCTION

In this interesting paper, Show-Me Institute researcher Audrey Spalding analyzes a topic that has received little systematic study: the compensation of school superintendents. School superintendents are the CEOs of our public school districts. Missouri school districts spend roughly $9,500 per student in current operating expenses. This rises to nearly $13,000 per student when capital expenditures are included. Superintendents, with the approval of their boards, make important decisions about how these resources are allocated. They make staffing decisions, including hiring and firing teachers and principals. They set pay and benefits for these staff. They invest in technology and curricula. They open and close schools. In many of our counties, the public school system is the largest employer by far. This makes the school superintendent — and the jobs and resources he controls — a very important person.

So, how are these education decision-makers compensated? Which superintendent and district factors explain differences in superintendent pay? In this study, Spalding attempts to answer these questions by drawing on two new sources of data. The first are salary data reported to the Missouri Department of Elementary and Secondary Education (DESE). These data are routinely reported to DESE by districts, but they are not reported by DESE to the general public. Spalding filed a sunshine request to obtain several years of these reported salary data. However, there is more to executive compensation than just salaries. To get a fuller picture of compensation, Spalding made sunshine requests to all Missouri school districts for superintendent contracts. These contracts provide important data about other benefits that superintendents receive, including the use of cars, additional annuities, vacation time, bonus pay, etc. She coded much of these contract data and worked them into her analysis.

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After publication of this report, interested readers will be able to access the underlying data — including all of the superintendent contracts, on the Show-Me Institute's website. This project thus advances the institute's mission to provide solid economic analysis of public policy, and also to increase government transparency.

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II. DETERMINING SUPERINTENDENT COMPENSATION

Public school superintendents are responsible for the fiscal and organizational management of school districts and are generally the most publicly visible district employees. Superintendents are well paid for that work, earning the largest salaries within their school districts. In the 2007–08 academic year, nearly one third of Missouri superintendents earned more than $100,000 each year,[1] while Missouri administrators earned an average salary of $69,147, and teachers an average of $35,505.[2] For the 2008–09 and 2009–10 academic years, as school districts across the state made substantial budget cuts in response to declining property tax revenues, the average full-time superintendent salary continued to increase, albeit slightly. In the 2008–09 academic year, the average salary for full-time superintendents was $105,717, and increased to $106,368 in the 2009–10 academic year.[3]

Complicating an examination of superintendent compensation is the fact that salary alone does not paint an accurate picture of total superintendent pay. In addition to more traditional public school employee benefits, such as health insurance and employer retirement contributions, superintendents employed by large, comparatively wealthier school districts often earn substantial nontraditional benefits. Automobile allowances and annuity payments are the most frequent forms of additional compensation awarded, and can increase a superintendent's total pay by a substantial amount. For several superintendents, those two benefit types add up to more than $20,000 in additional pay, amounting to a significant pay boost. For example, the Springfield superintendent earned a $44,000 annuity on top of his $149,750 salary during the 2006–07 school year, according to his employment contract — a nearly 30-percent increase in pay.

In a national survey of superintendents, Glass and Franceschini (2007) estimated that non-salary benefits are an even more substantial portion of total compensation. They wrote that once annuities, retirement costs, auto reimbursements, term and whole life insurance, professional development allowances, Social Security contributions, and other benefits are taken into account, a superintendent's non-salary compensation can equal 50 percent of his or her actual salary.[4]

When scholars examine employee compensation, they look for the rationale behind that compensation. That is, they assume that employees are awarded a

large salary to compensate aspects of their job, not simply because the company has the money available to spend. Similarly, this study searches for the structure of Missouri superintendent pay, and seeks to identify which factors cause school boards, in practice, to reward superintendents.

A survey of superintendent contracts reveals that few Missouri superintendents are awarded salaries based on their performance. In some instances, pay for Missouri superintendents is based on the same schedule used for teachers. Of the contracts reviewed for this study, the pay for at least 47 superintendents had been calculated using a salary schedule. Other superintendents operated under employment contracts that specified percentage or dollar increases in the superintendent's salary for each year, ruling out the possibility of performance-dependent salary increases. Still others stipulated that the school superintendent would receive the same percentage increase in pay as that awarded to teachers. Finally, at least 65 contracts included language noting that salary increases were dependent on the superintendent's evaluation.

The issue of superintendent pay and how it is awarded is both a district-level and a statewide issue, because superintendent salaries and benefits are funded with public dollars. Missouri school districts get the bulk of their revenues from three sources: local property taxes, state funding, and federal funds.[5] Missouri school districts receive, on average, approximately 46 percent of their operating budgets from local property tax revenues, 44 percent from state sources, and about 10 percent from federal sources.[6]

Young (1997) suggested that one way the general public can gauge how effectively a school district is managing its budget is by looking at how much the school board pays its superintendent. Using this method, an examination of the distribution of superintendent salaries in relation to district size is appropriate, and can be incorporated into a discussion of district budget management. Buchanan (2006) postulated that large superintendent salaries are not tied to performance or responsibility, but that awarding superintendents a high salary is one way by which school boards try to indicate to district residents that they have hired "the best."

Regardless of whether either of these hypotheses are correct, the fact that school districts are funded publicly means that we can look at the structure of superintendent pay and ask what exactly local residents, as well as state taxpayers, are getting for the nearly $50 million spent each year on superintendent salary. Which factors determine a superintendent's salary, and are school districts rewarding superintendents for improved district performance? Finally, if Missourians dislike a district's superintendent compensation practices, what actions can they take in response?

The present study is an attempt to answer those broad questions by exhaustively examining superintendent salary and benefits. Although superintendent salary amounts and benefit packages are public information,[7] they are rarely compared among a wide range of school districts. The Missouri Department of Elementary and Secondary Education (DESE) collects superintendent salary data,

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but does not collect any additional benefit or contract information. Other states, such as Nebraska, do collect information about superintendents' non-salary benefits and additional compensation.[8] But, as far as we are aware, no state collects superintendent contracts, which are often the best source of detailed information concerning total superintendent compensation. With salary data collected from the DESE, along with a sample of several hundred superintendent employment contracts, it is possible to explore thoroughly the issue of Missouri superintendent compensation.

This study examines the following aspects of Missouri school superintendent compensation:

- The roles and responsibilities of the superintendent.
- The superintendent hiring process.
- The general structure of superintendent compensation, including various fringe benefits.
- The variations between Missouri superintendent salaries based on superintendent characteristics and school district characteristics.
- Potential correlation between salary increases and increased student academic success.
- The superintendent salary raises that school districts award, based on a survey of Missouri superintendent employment contracts.

Superintendent Roles and Responsibilities

The role of a school superintendent, in general terms, is to serve as an executive who meets with the school board to determine district policy, and then finds operational ways to implement that policy. The superintendent is also a major source of information for the board. At school board meetings, the superintendent will make informational reports regarding student academic performance, the state of the budget, community relations, and other issues.

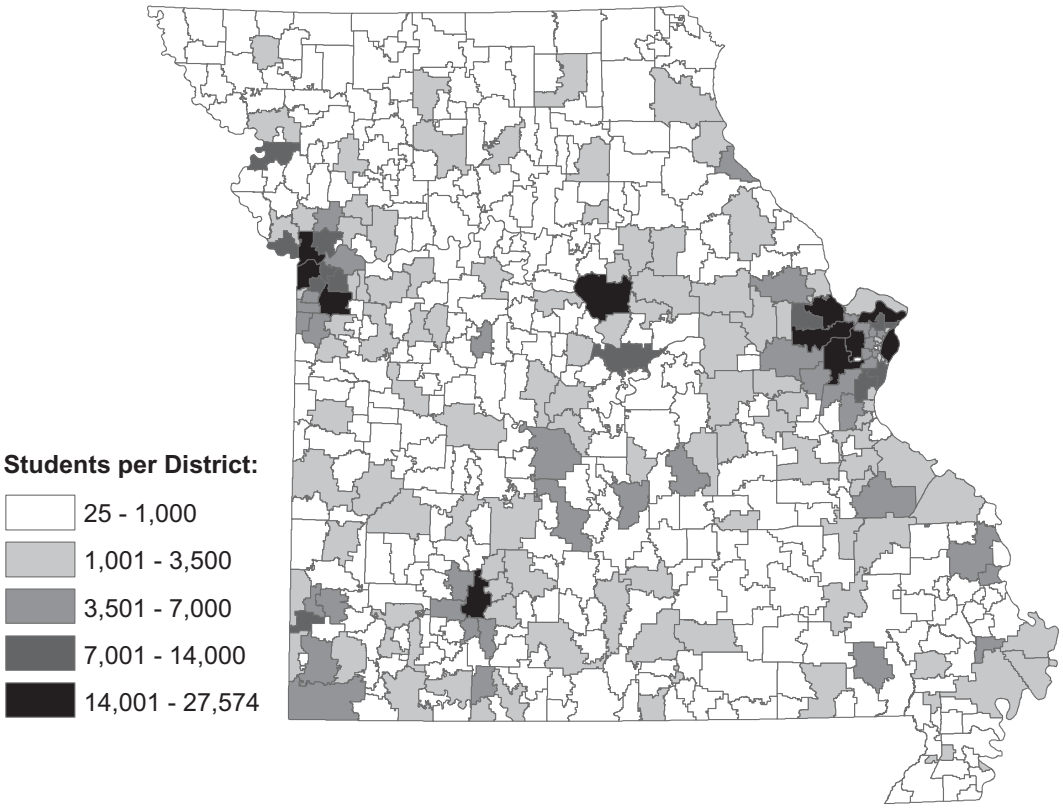
Often, the superintendent will also issue recommendations for board decisions. It is important not to underestimate the power and influence of a school district's superintendent. According to a national survey of superintendents led by Thomas Glass, a professor of leadership at the University of Memphis, nearly 90 percent of superintendents reported that their respective boards of education accepted superintendent-recommended policies 90–100 percent of the time.[9]

The specific responsibilities and characteristics that a superintendent's job entails depend a great deal on the relationship between the school board and superintendent, whether the district has a central office administrative staff to assist the superintendent, and the size of the school district.

The Effects of District Size

As of the 2009–2010 school year, Missouri had 521 traditional public school districts, excluding charter schools, special school districts, and state schools for the blind and deaf.[10] Although Missouri has two very large districts in Saint Louis and Kansas City, the majority of the districts are small. As shown in Figure 1, more than 70 percent of the state's public

Figure 1 — Missouri Public School District Enrollment, 2007–08



school districts had fewer than 1,000 students enrolled in 2007–08.

The role of the superintendent is different according to the size of the school district, and school districts in Missouri vary wildly in size. For example, the superintendent at the Saint Louis Public School District (student enrollment: 27,554) has a set of responsibilities likely much different from those of the superintendent at the Knox County School District (student enrollment: 563).

Missouri has some extraordinarily small school districts, and their superintendents may, in fact, work at the district's only school. The superintendent at Crane R-III (student enrollment: 745) during the 2007–08 school year simultaneously worked as an elementary school principal and as a special coordinator for the district, while the Holliday C-II district superintendent's contract stipulated that she work three quarters of the time as a "superintendent/ principal," and the remainder of the time as a school librarian.

At even smaller districts, the superintendent position is a part-time job, if it exists at all. In the 2008–09 academic year, eight superintendents were employed part-time, according to state data. With the exception of the Columbia Public School District, which had hired one of its former superintendents part-time while the district searched for a full-time replacement, and the Washington School District, which enrolls more than 4,000 students, the districts with part-time superintendents are extremely

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small: Enrollment at six of the eight districts ranged from 38 to 208 students. In fact, districts with such a small district size may do away with the position of superintendent altogether, opting instead to have the district's school principal fill the managerial role.

As Glass and Franceschini found in their 2007 national study of superintendents, although school districts of all sizes expect their superintendents to serve as educational leaders, and most expect their superintendents to serve as managerial leaders, more than 15 percent of school boards for districts with student enrollment of 3,000 or more also expect their superintendents to serve as political leaders.[11]

Bruce Buchanan, a long-time education reporter, wrote in his book *Turnover at the Top: Superintendent Vacancies and the Urban School*:

> Most urban superintendents must deal not only with their school board but with other elected bodies, such as a city council, a board of county commissioners, and a state legislature.

To further illustrate just how political the leadership at urban school districts can be, Buchanan recounted how Saint Louis Mayor Francis Slay recruited four candidates during the Saint Louis Public Schools school board election of April 2003. Slay's campaign, Buchanan wrote, gave candidates $50,000, and a number of corporations and allies of the mayor contributed close to $200,000 more. The mayor's four candidates won, he wrote, and were thus the majority on the district's seven-member board.

"New superintendent Creg Williams will have to keep them — and the mayor — happy if he is to succeed and survive in St. Louis," Buchanan wrote.[12]

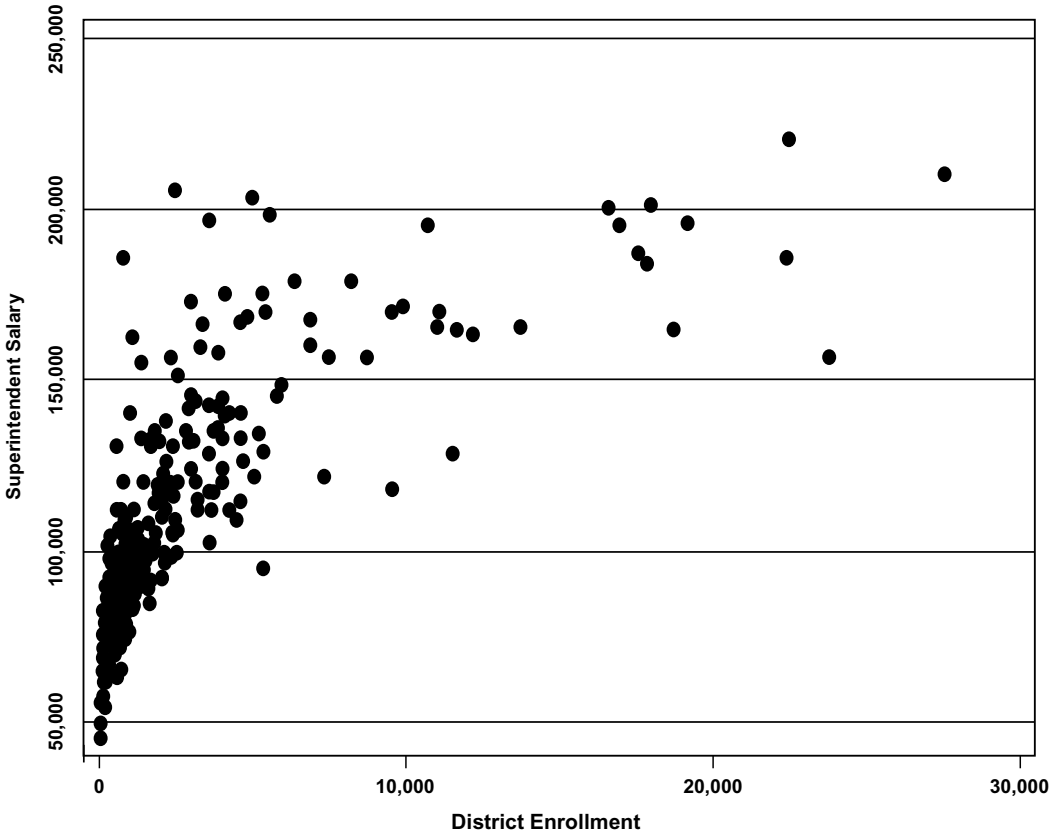
In addition to navigating city politics, superintendents at larger districts also spend a great deal of time communicating with school board members. According to Glass' survey, more than 45 percent of superintendents at districts with 25,000 students or more reported spending six hours or more in direct communication with board members, substantially more than superintendents of mid-size districts, of which only 24 percent reported spending more than six hours in direct communication with the board.

Large district superintendents deal with a great deal of bureaucracy. Buchanan wrote:

> In small districts, the superintendent might visit each school once or twice a week. He or she becomes part of the school, learning which teachers need help with math lessons or which leaky sinks need fixing in the restrooms. A big-city superintendent may not visit every school during the course of an entire year. With so much to do at central office, it becomes easy for a superintendent to become isolated from the day-to-day problems and challenges of running a school.[13]

Small district superintendents do not have to contend with the additional layers of district bureaucracy present in large districts, but they do confront another set of problems. It is rare for small districts to employ a central office staff. Instead, the details of budget planning and district

Figure 2 — Superintendent Salaries and District Enrollment, 2007–08



operations are left to the superintendent, regardless of whether the superintendent has had training specific to these specialized responsibilities. As Lars G. Bjork noted in *The Politics of Leadership*:

> Superintendents in small, often rural districts must attend to the nuances of community cultures and power structures as well as function with the lack of administrative support staff. As a consequence, they have a more direct hand in district operations than their urban counterpart.[14]

From a glance at Missouri superintendent salary numbers, it is apparent that as school district enrollment increases, so does superintendent salary. Figure 2 illustrates this trend, with superintendent salaries plotted in relation to school district enrollment for the 2008 school year.

Moreover, superintendents for extremely large, urban districts tend to earn outsized compensation packages, for reasons that will be explored further in this study. To use a local example, Creg Williams, the superintendent at Saint Louis Public Schools (SLPS) during the 2005–06 academic year, was awarded a four-year $250,000 contract, as well as up to $30,000 extra in performance bonuses, a $1,500 monthly expense account, a district-provided car, an annuity of $7,500, and up to $20,000 in moving expense reimbursements, according to Williams' 2005–06 employment contract.[15]

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Table 1 — Mean Salary of Missouri Superintendents, Compared Among Enrollment Quartiles, for the 2007–08 School Year

ENROLLMENT QUARTILE	ENROLLMENT	SALARY MEAN
1st	<356	$72,454
2nd	356–733	$85,023
3rd	734–1,848	$96,094
4th	1,849+	$141,106

Salary figures exclude health and life insurance, as well as nontraditional benefits. The table does not include data from charter schools or special school districts.

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Of course, as Buchanan noted, Williams' contract wasn't especially large when compared to other U.S. superintendents of urban cities. In fact, he notes, the SLPS considered paying another superintendent candidate more than $400,000 in salary alone.[16]

Table 1 shows a breakdown of superintendent salary for the 2007–08 academic year. As you can see in the table, salary for superintendents working in districts with enrollment of less than 1,849 (comprising districts in the first three quartiles) is fairly similar, increasing slightly as district enrollment increases. However, for superintendents working at districts with student enrollment of more than 1,848, there is a large jump to a mean salary of $141,106 — a nearly $50,000 increase from the average salary earned by superintendents in the third quartile.

The Hiring Process and Salary Negotiation

One of the main duties of a district's school board is to hire a superintendent, and the hiring process can proceed in a number of ways. The school board can look outside the district for candidates with administrative experience, either through direct contact or by employing agencies to scout throughout the state, or even across the country. Typically, a number of candidates are interviewed by the board for the position and are ultimately chosen with a limited amount of public input, although there have been exceptions.

Districts can also hire from within, promoting a central administrative office staff member, or even a principal. The Columbia School District, with an enrollment of more than 17,000 students, found its arguably most-loved superintendent in recent memory when it promoted one of its employees up through the ranks of teacher, counselor, principal, director of transportation, associate superintendent, and, finally, to superintendent — twice.[17] There is a common perception that the practice of promoting district employees to the superintendency, rather than hiring outside candidates, is more common at small districts. However, Glass' national survey reveals the opposite. Only 23.9 percent of superintendents working for districts with fewer than 300 students reported being promoted from within the district, whereas 42.1 percent of superintendents at districts with more than 25,000 students reported being promoted from within.

In addition to attempting to find a quality candidate, the process of hiring a superintendent includes a lengthy discussion of superintendent compensation. When board members determine how much to pay a superintendent, they often consider the amounts that nearby, or similar, school districts are paying. However, geography

and a wide variation in school district characteristics can leave school board members with a fairly small pool of comparable superintendent salary and benefit packages to consider before negotiations.

Phil Young, professor at the University of California–Davis and co-director of its Joint Doctoral Program in Educational Leadership, wrote that, absent comparison districts, school boards can look at a potential superintendent's former salary as a way to determine how much to offer.[18] If a school board is hiring a first-time superintendent, though, no such data are available for comparison. Furthermore, if a superintendent is moving up from a smaller district, establishing how much of a pay increase is justified to compensate for the increased responsibilities and demands at a larger district is an inexact science, especially for those without regression analysis tools.

Another factor impacting superintendent salary negotiation is public perception. Although some community groups may perceive a large salary and benefit package to be excessive and wasteful, school board members don't want to pay a superintendant too little. If the public perceives total compensation to be an indicator of a superintendent's ability, school board members may attempt to pay higher salaries so that they can be seen as having hired "the best," thereby refuting claims that they aren't doing everything they can to improve the school district. As Buchanan bluntly states:

> A well-paid, highly visible superintendent becomes a lightning rod to draw away some of that pressure. Board members can tell their constituents, we're paying him [or her] a lot of money to do the job. They hope—perhaps foolishly—that a single superintendent can lead their district to the promised land of academic success, fiscal health, and community support. If so, then a six-figure salary seems well worth it.[19]

Although a superintendent can earn a high salary through exceptional performance, a high salary is not a predictor for excellent performance. A high salary alone does not a good superintendent make.

Evaluation Process

There are three broad types of superintendent evaluation: global, criteria-driven, and data-driven.[20] Global judgment can take the form of board discussions of superintendent performance, or a descriptive narrative report of what the superintendent has accomplished. Examples of criteria-driven evaluation include printed rating forms or a checklist of duties that a superintendent is supposed to perform. Because records and meetings regarding personnel issues, which include performance ratings and discussions, are closed under the Missouri Revised Statutes, researchers are able to obtain records of these two types of evaluation only if a school district voluntarily makes them available, or if superintendents self-report the form and the outcome of their evaluation process. On the other hand, data-driven information, especially of student academic achievement, can be easily accessed.

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Available literature about superintendent evaluation suggests little focus on the use of numeric measures of student academic achievement. Theodore Kowalski, who has written extensively about the superintendency, provides an overview of which roles and responsibilities superintendents can expect in his textbook for superintendents, *The School Superintendent: Theory, Practice and Cases*.[21] Kowalski divides superintendent responsibilities into categories of district-level leadership, material resources management, human resources management, and community leadership. Kowalski discusses instructional leadership as a component of a superintendent's district-level responsibilities, noting that research has shown that superintendents can improve instruction indirectly through activities such as collaboration and strategic staff development.

An unfortunate result of the lack of objective superintendent performance measures, according to Candoli et al., as well as Hoyle and Skrla (1999), is that personality and political factors play an oversized role in the hiring and firing process.[22] Hoyle and Skrla provided the following suggestions for further improving superintendent evaluation, so that the process would focus on superintendent performance rather than political factors: a specific evaluation time; job and district-specific evaluation; multiple sources of evaluation data, including parent, student, and teacher input; use of established superintendent evaluation methods; and school board training about how to conduct an evaluation process.[23]

Hoyle and Skrla's approach appears to be part of a movement toward a more precise, outcome-based evaluation process for superintendents, if not a change in actual practices. Candoli, et al., noted that "there is growing agreement that educational evaluations must be grounded in assessments of student progress."[24]

Although superintendant compensation has not previously been directly based on student outcomes, it appears that this practice may be changing. In 2005, professors John R. Hoyle, Lars G. Bjork, Virginia Collier, and Thomas Glass published *The Superintendent as CEO: Standards-Based Performance*, a book with a title that itself suggests the use of numeric performance measures. The authors called for more specific standards for the superintendency, and the use of outcome measures. They wrote that although superintendent evaluation processes vary widely, communities have increasingly held superintendents responsible for student performance and financial management since the 1980s.[25]

Recent legislation may also be providing a new incentive for districts to include student performance in administrator evaluations. The No Child Left Behind Act, passed in 2001, mandated that assessment of school districts as a whole must use student performance on standardized tests as a measure. In fact, repeated failure to meet performance standards can result in financial penalties for schools.[26] If a Missouri school fails to meet Adequate Yearly Progress standards for two years in a row, the district must offer students

the opportunity to transfer to another school within the district where students are performing better on the state standardized test. After a third year of failure, the school must provide tutoring services. If the school fails to meet AYP standards five years in a row, school administrators may be replaced.

DESE does suggest using performance data, including attendance rates, dropout rates, and student performance on the state standardized test as part of a superintendent's evaluation,[27] along with written self- and school board evaluations of the superintendent's success in areas less numerically measurable, such as communication and management.

Missouri school districts report and track student performance on the state standardized test, and test scores have become more of a focus in the news media. Given these penalties, the fact that communities are increasingly holding superintendents responsible for student performance, and that DESE itself suggests using academic performance data in a superintendent's evaluation, it is reasonable to expect that school administrators are paying some attention to student performance on standardized tests and that school board members may be using scores to evaluate superintendent performance.

III. LITERATURE REVIEW

A number of studies have attempted to tease out which school district and superintendent characteristics are correlated with higher superintendent pay. A review of these studies gives us a good foundation for further research, and suggestions for where to begin our analysis.

The study most applicable to this survey of superintendent compensation was conducted by Ronald Ehrenberg, a labor economics professor at Cornell (and co-author of *Modern Labor Economics*), Richard Chaykowski, a professor at Queen's University, and Randy Ehrenberg, a former vice principal in New York's Ithaca City School District. The study aimed to see whether higher superintendent salaries were correlated with increased student academic performance, by examining salaries of New York superintendents for the years 1978–1983 with data collected from the New York Department of Education. The authors also sent a survey to New York superintendents, asking them to list the criteria they believed school board members used to evaluate them.[28]

Economists often use regression equations as a tool to check the effects of a number of characteristics on a specific variable. A regression equation enables researchers to hold a number of characteristics constant (such as school district enrollment, superintendent education level, or superintendent age), in order to focus on the marginal impact of a single characteristic (such as district resident poverty level) on the examined variable (in this case, superintendent salary). This type of analysis allows us to compare superintendent salary among many districts, despite their differences.

Ehrenberg, Chaykowski, and Ehrenberg used a wage regression equation to compare superintendent

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salary with superintendent, school district, and district resident characteristics. The two superintendent characteristics found to translate into higher pay were age and years of tenure in the school district.[29] The authors also found that other characteristics correlating with higher superintendent pay included large school districts, wealthy school districts, high per-capita personal income, and a large percentage of district residents possessing a bachelor's degree or higher. Other district and superintendent characteristics that were not found to be statistically significant in a 5-percent two-tailed test included the percentage of nonwhite district residents, superintendent education level, whether the district was in an urban area, the percentage of residents who had children, and the percentage of residents who owned their homes.[30]

Ehrenberg, Chaykowski, and Ehrenberg also tested whether student academic achievement was correlated with higher superintendent pay. In a survey, superintendents were asked to list criteria that they believed their school boards had used in their evaluations. The majority of surveyed superintendents listed public relations, school board relations, employee management, fiscal management, and curriculum development as evaluation criteria. Only 31 percent of surveyed superintendents listed student academic achievement.[31] These survey results suggest that testing whether superintendent salaries are based on job performance may be difficult, because the most-used performance criteria are difficult to measure. The authors tested whether above-average student performance on the state math test was correlated with increased pay for superintendents, and found that there appeared to be a slight positive relationship.[32] If, as the surveyed New York superintendents indicated, student academic achievement is not a common concern when school boards are evaluating their superintendents, this could explain the positive but weak relationship between increased student academic achievement and superintendent pay.

Another superintendent wage regression study conducted in 2002 replicated Ehrenberg, Chaykowski, and Ehrenberg's findings in part. Kenneth Meier, a professor of political science at Texas A&M University, and Vicky Wilkins, an associate professor at the University of Georgia School of Public and International Affairs, examined Texas superintendent pay with a logarithmic wage regression. The authors used data from more than 1,000 school districts over a period of four years, and focused on whether gender and race were significant factors in the determination of a superintendent's salary.[33]

Meier and Wilkins tested fewer variables than had been included in the New York superintendent study. They did not test district resident variables, such as family income and percentage of residents with college degrees. Instead, by using data only from the Texas Department of Education, they were able to analyze all available observations, after cleaning the data of obvious errors. Unfortunately, if researchers try to piece together a dataset from two or more sources, they often end up with fewer observations, because one source of data may exclude information that the other does not, and *vice versa*.

By using data from a single source, Meier and Wilkins had fewer characteristics to test, because they didn't attempt to combine U.S. Census data or other data sources with the Texas Department of Education data, but they also did not have to exclude observations from their dataset.

The characteristics that Meier and Wilkins found to be statistically significant were budget size, percentage of district funds that came from local sources, experience, age, tenure, and whether the superintendent had a doctorate. Interestingly, the authors also included a variable to measure superintendent performance — the percentage of students who passed Texas' standardized test the previous year — and found it to be statistically significant, though small. For each additional percentage point of students passing the standardized test, Meier and Wilkins found that superintendent salary increased by 0.09 percent.[34]

Phil Young, a professor at the University of California–Davis, examined superintendent pay using a wage regression model, although his study included fewer observations and variables than either of the previously discussed studies. As with the other studies, Young found superintendent compensation to be highly correlated with school district characteristics. Using a wage regression based on 173 observations of superintendents, Young found that superintendent district experience, previous experience, district enrollment, and a geographic cost measure were statistically significant determinants of superintendent pay. Although he regressed superintendent salary against only four variables, his model had a high correlation coefficient; the model had an R^2 value of 0.68, which means that Young's model of superintendent compensation fit well with the actual data.

These three studies together provide a list of variables we can expect to be positively correlated with superintendent pay: school district enrollment, district resident education level, superintendent education level, and superintendent experience. We can also expect a higher percentage of students from low-income families and rural school districts, as well as a higher percentage of district residents with a low education level, to be negatively correlated with superintendent pay. We can expect the impact of gender and race to be small, given the findings of Meier and Wilkins. Given the findings from Ehrenberg, Chaykowski, and Ehrenberg, we can expect the race of district residents to have no effect on pay.

Young's superintendent compensation model does not add additional variables to our list, but if school boards are following his suggestions to make formal decisions about which superintendent characteristics merit additional pay, we would expect the coefficients of our regression to reflect the relative value that school boards place on certain superintendent characteristics.

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IV. DATA

Model of Supervisor Salaries

Ehrenberg and Smith (2009) surveyed many of the models used to understand employee compensation, but the present

Under the theory of compensating wage differentials, we would expect that when considering two otherwise identical superintendents, the one working at a school district with a higher percentage of students and families living below the poverty level would be paid more.

study will focus on three basic factors that are thought to impact employee pay.

The first, referred to in economics literature as "compensating wage differentials," is the additional compensation awarded to employees for difficult and/or demanding work conditions. In the context of superintendent salary, a large percentage of school district students coming from families at or below the poverty level could make the district superintendent's job more difficult. Under the theory of compensating wage differentials, we would expect that when considering two otherwise identical superintendents, the one working at a school district with a higher percentage of students and families living below the poverty level would be paid more.

The second factor, known as "human capital," is the commonplace practice of paying more to employees with higher levels of education, training, and tenure. The reasoning behind this practice is that accumulated human capital either makes an employee inherently more productive, or, as explained in *Modern Labor Economics*, that an employee who has acquired an advanced degree is signaling that he or she is more productive. It is important to note that some types of human capital may not actually produce or reflect increased employee productivity. For example, the most common salary structure for Missouri schoolteachers is a system that takes into account only an employee's years of experience and level of education. Within that pay structure, increases in salary are not awarded to employees who improve with years of experience or additional education, but instead to all employees as they advance through the district's "salary schedule." (For a sample salary schedule, see Appendix 1.) The district assumes that steps up the schedule indicate gains in employee productivity, but many studies have demonstrated that this is not the case. Eric Hanushek, longtime education researcher and senior fellow at Stanford University's Hoover Institution, wrote:

> More importantly, the traditional teacher salary scheme only rewards experience and the possession of advanced education degrees but neither of these, with the exception of initial experience levels, has been shown to be consistently related to student performance.[35]

The third factor, which provides the impetus for the present study, is pay for performance — also known as "merit pay." Ideally, employees would work harder and more efficiently if they knew that their performances would be rewarded. This theory holds that if school boards rewarded their superintendents for implementing organizational changes that increased student academic performance, we would expect to see superintendents spending more time working to achieve improved student performance.

To test the importance of these three factors on superintendent pay, we collected data from three sources:

1.) We requested via email employment contracts from each of Missouri's 521 public school superintendents, and made follow-up phone calls to nonresponsive superintendents. We received a total of 451 contracts and other replies from superintendents

detailing the amount and extent of their salary and benefits, for a response rate of nearly 90 percent.

2.) In addition to the contracts collected, we requested five years of superintendent salary data from DESE. That data included each superintendent's name, gender, race, age, highest degree earned, annual salary, and whether the superintendent worked part- or full-time. DESE provided all information requested except superintendent age data, which the department does not collect.

3.) We obtained U.S. 2000 Census data, organized by school district, from the Missouri Office of Social and Economic Data Analysis (OSEDA). This data allowed us to include variables for school district resident education level, percentage of minority district residents, and whether a school district was classified as urban or rural.

Our regression analysis does not include additional compensation, such as annuity and car payments. DESE does not collect that information, and although we collected non-salary compensation data from the requested employment contracts, we obtained data from only one year, with remarkable omissions regarding the value of health and life insurance payments. Superintendent contracts rarely specify the value of the health insurance provided to a superintendent and his or her family, so we can only know that a superintendent received health or life insurance, not the value of that compensation.

Included Districts

The superintendent data from DESE, when combined with Census 2000 data and cleaned of nontraditional school districts and superintendents who worked part-time or made $40,000 or less per year (which is likely evidence that a superintendent is working part-time), have 2,217 total observations. This includes observations of 461 unique school districts during a five-year period, or 88 percent of all Missouri school districts, a figure considerably higher than Ehrenberg, Chaykowski, and Ehrenberg's average response rate.

Table 2 lists average enrollment, free or reduced-price lunch eligibility, superintendent salary, and number of excluded rural districts from those districts that were excluded for having either part-time superintendents or superintendents earning less than

Superintendent contracts rarely specify the value of the health insurance provided to a superintendent and his or her family, so we can only know that a superintendent received health or life insurance, not the value of that compensation.

Table 2 — Characteristics of School Districts Excluded From Dataset

YEAR	N	MEAN ENROLLMENT	FREE/REDUCED-PRICE LUNCH	MEAN SUPERINTENDENT SALARY	NUMBER OF PART-TIME SUPERINTENDENTS EARNING MORE THAN $40,000 PER YEAR	NUMBER OF RURAL DISTRICTS EXCLUDED
2004	46	206	51.4	$35,006	16, avg. $49,094	32
2005	49	284	49.2	$36,417	16, avg. $52,524	36
2006	46	507	48.9	$43,185	21, avg. $57,754	33
2007	38	748	47.9	$44,366	21, avg. $57,069	20
2008	36	872	49.6	$40,361	22, avg. $47,870	24

Total Excluded Observations: 215

Table 3 — Characteristics of School Districts Included in Dataset

YEAR	N	MEAN ENROLLMENT	FREE/REDUCED-PRICE LUNCH	MEAN SUPERINTENDENT SALARY	NUMBER OF RURAL DISTRICTS INCLUDED
2004	438	1,987	45.3	$87,052	203
2005	432	1,994	46.5	$88,897	199
2006	437	2,036	46.5	$91,941	203
2007	455	1,985	46.8	$94,803	218
2008	452	1,948	47.3	$98,669	212

Total Included Observations: 2,217

$40,000 per year. Table 3 lists the same variables as Table 2, but for superintendents included in the dataset. Six of the nontraditional school districts that were excluded from the dataset are not included in Table 2.[36]

Not surprisingly, the excluded districts were much smaller, had higher percentages of students receiving free and reduced-price lunches, and paid superintendents less.

To model superintendent salary, we regressed actual salary data against school district, superintendent, and district resident characteristics, using ordinary least squares.

V. WAGE REGRESSION EQUATION

To model superintendent salary, we regressed actual salary data against school district, superintendent, and district resident characteristics, using ordinary least squares. The regression was logarithmic. Keeping in mind the earlier discussion of compensating wage differentials, human capital factors, and merit pay, you will notice that the equation below does not include variables to measure pay for performance.

The final form of the model is:

$$Log(salary) = \beta_1([log(enroll)]+\beta_2(frlpct) +\beta_3(male)+\beta_4(spec)+\beta_5(doct)+\beta_6(black)+ \beta_7(yrexdi)+\beta_8(yrexdisq)+\beta_9(publicexp)+ \beta_{10}(pctnonwhite)+\beta_{11}(pcthighdegree)+ \beta_{12}(k8)+\beta_8(urb)+\beta_{13}(rural)+\beta_{14}(y2005)+ \beta_{15}(y2006)+\beta_{16}(y2007)+\beta_{17}(y2008)$$

The variables for student enrollment, students eligible for free or reduced-price lunch (a proxy measure for low-income residents), percentage of residents with an advanced academic degree, and whether a district is rural or urban, are measures of compensating wage differentials — factors that either make a superintendent's job more easy or difficult, all else being equal. The variables for which degree a superintendent possesses, years of public school experience, and years of experience at his or her school district are measures of human capital factors. Finally, the variables for whether a superintendent is male or black are designed to tease out whether school boards tend to award higher salaries to superintendents for factors beyond their control.

Descriptions of variables included in the model are detailed in Table 4. Further explanation of less straightforward variables follows.

Race

The provided superintendent race information included race classifications for white, black, Hispanic, and Native American superintendents. The included data contained 10 observations of Native American superintendents (two

superintendents were observed for five years) and five observations of Hispanic superintendents, which was not enough to test whether being Native American or Hispanic resulted in a wage penalty. Thus, the model only included a variable for whether a superintendent was African American.

Rural School Districts

As explained at the beginning of this study, Missouri has many extremely small school districts, as well as several large districts located in dense cities. To test for inherent differences between districts in rural and urban areas, we used a measure (also used by OSEDA) that takes into account the density of an area and the distance from a large city. From eight classifications of areas as "Rural Non-Metro" and "Urban Fringe of Mid-Size City," we made two: Urban or Rural. If the district was classified as either a "Large City" or "Urban Fringe of a Large City," we labeled it Urban. If the district was labeled "Rural Non-Metro," we labeled it Rural. All other districts were left unlabeled. Missouri also has several school districts that provide education for students only up to the eighth-grade level. We created a dummy variable, K8, to test whether superintendents in those districts made more or less than K–12 districts, all else being equal. Dummy variables are used as a method of taking into account characteristics that have only two possible outcomes. In this case, a school district is either a K–8 district (K8=1), or it isn't (K8=0). Table 4 shows that dummy variables were also used for whether a superintendent was male, had a specialist degree, had a doctorate, worked at an urban district, was African American, and worked at a rural district, as well as a set of dummy variables for whether the superintendent worked during the academic years ending in 2005, 2006, 2007, or 2008.

Missouri has many extremely small school districts, as well as several large districts located in dense cities. To test for inherent differences between districts in rural and urban areas, we used a measure (also used by OSEDA) that takes into account the density of an area and the distance from a large city.

Table 4 — Variables Included in Superintendent Wage Regression

VARIABLE	MEAN	STD. DEV.	DESCRIPTION
LOGSAL	11.39	0.28	Logarithm of superintendent salary in that year
LOGENROLL	6.79	1.16	Logarithm of student enrollment in that year
FRLPCT	46.54	15.69	Percentage of district students receiving free or reduced-price lunch in that year
MALE	0.82	0.39	Equal to "1" if the superintendent is male, "0" if the superintendent is female
SPEC	0.59	0.49	Equal to "1" if the superintendent's highest earned degree is a specialist degree
DOCT	0.31	0.46	Equal to "1" if the superintendent's highest earned degree is a doctoral degree
BLACK	0.02	0.13	Equal to "1" if the superintendent is African American
YREXDI	8.64	7.85	Years of experience the superintendent has working in that district that year
YREXDISQ	136.23	232.5	The square of yrexdi
PUBLICEXP	24.20	7.75	Years superintendent has worked in any capacity in Missouri's public education system
PCTNONWHITE	6.19	10.62	The percentage of district residents who were classified as nonwhite in the year 2000
PCTHIGHDEGREE	18.12	12.05	The percentage of district residents with a bachelor's degree or higher in the year 2000
K8 DIST	0.04	0.20	Equal to "1" if the district is a K-8 district, "0" if the district is a K-12 district
URB	0.14	0.35	Equal to "1" if the district is classified as "urban,"
Y2005			Equal to "1" if the year was 2005
Y2006			Equal to "1" if the year was 2006
Y2007			Equal to "1" if the year was 2007
Y2008			Equal to "1" if the year was 2008

Table 5 — Logarithm of Annual Salary (Logsal)
Observations: 2,217; Adjusted R^2: 0.8603; Academic Years 2003–04 Through 2007–08

VARIABLE	COEFFICIENT	STANDARD ERROR	t
LOGENROLL	0.14656	(0.0030)**	48.53
YREXDI	0.00399	(0.0009)**	4.42
YREXDISQ	-0.0001	(0.00003)**	-4.16
PUBLICEXP	0.0037	(0.0003)**	11.65
DOCT	0.1006	(0.0089)**	11.25
SPEC	0.0503	(0.0078)**	6.47
PCTHIGHDEGREE	0.0034	(0.0003)**	13.36
PCTNONWHITE	0.0016	(0.0003)**	4.52
FRLPCT	-0.0007	(0.0002)**	-3.35
RURAL	-0.0153	(0.0060)**	-2.54
SUBURB	—	—	—
URB	0.1218	(0.0086)**	14.18
BLACK	-0.0406	(0.0229)*	-1.78
MALE	0.0265	(0.0059)**	4.46
K8 DIST	0.0463	(0.0117)**	3.96
Y2004	—	—	—
Y2005	0.0204	—	—
Y2006	0.0580	(0.0072)**	8.08
Y2007	0.0936	(0.0071)**	13.15
Y2008	0.1322	(0.0071)**	18.53
constant term	10.092	(0.0255)**	396.85

* Statistically significant at the 0.10 level.
** Statistically significant at the 0.05 level.

Consistent with previous superintendent wage regressions, we found that superintendent salary is highly correlated with district characteristics.

In situations with more than two outcomes, such as which year the superintendent worked, or what level of education he or she had, we create a dummy for each alternative, which is why there are separate dummy variables for the academic years ending in 2005, 2006, 2007, and 2008. In order for this form of analysis to work, when using a dummy variable for a characteristic with more than one possible outcome, we must leave out one of the alternatives. In this case, we omitted a dummy variable for the academic year ending in 2004, and another dummy variable for whether a superintendent held a bachelor's degree.

Educational Information

We tested whether a higher-educated district population was correlated with a higher superintendent salary. The most exact data came from the 2000 U.S. Census, and had been organized by school district by the Missouri Office of Social and Economic Data Analysis. We created a variable, *pcthighdegree*, representing the percentage of district residents who hold a bachelor's degree or a more advanced degree.

VI. WAGE REGRESSION RESULTS

School District Characteristics

Consistent with previous superintendent wage regressions, we found that superintendent salary is highly correlated with district characteristics. Our regression, with an adjusted R^2 of 0.86 (a measure of how well the model fits with the actual data; the highest value possible is 1), models the collected superintendent salary data quite well and reaffirms the findings of Young, Meier and Wilkins, and Ehrenberg, Chaykowski, and Ehrenberg.

As found before in previous studies, district size — measured in our regression by student enrollment — plays the largest role in determining superintendent pay. The coefficient in our model of the logged student enrollment variable is 0.1465. This is not surprising; Ehrenberg, et al., found a range from 0.11 to 0.127 for the coefficient of logged enrollment, while the variable of logged budget size used by Wilkins and Meier, which is directly linked to student enrollment, had a coefficient of 0.1558. Superintendents themselves alluded to the wage difference between large and

small school districts when responding to requests for their contracts. Several superintendents contacted from smaller, rural school districts joked that they weren't getting the outsized salaries that superintendents of much larger districts receive.

Other school district characteristics found to be statistically significant were the percentage of students that received free or reduced-price lunch, the percentage of district residents who held a college degree, the percentage of nonwhite residents, whether the district served only grades K–8, and whether the district was urban or rural.

Most significant of those factors, after student enrollment, is the urban variable (equal to 1 if the district is urban; equal to 0 if it isn't). If a district is classified as urban, that adds about 12 percent onto the superintendent's salary, all else being equal. This may be because superintendents in large cities have more community and/or political involvement, as emphasized by Buchanan, or because city residents value educational leadership more than others.

A common perception among many Missouri school administrators is that rural superintendents have a great deal of responsibility in exchange for a relatively small salary. The coefficient of the dummy variable for "ruralness" is negative, but nearly 10 times smaller than the urban variable's coefficient. If a school district is classified as "rural," the superintendent suffers about a 1.5-percent decrease in salary, all else being equal. The decrease in salary associated with working in a rural district may in fact be larger. As shown in Table 2, more than half of the excluded observations of traditional school districts were rural districts, and many of the part-time superintendents not included in our survey are employed in rural districts.[37]

The positive correlation between salary and a superintendent working for a K–8 school district was not expected. The finding is quite statistically significant, and the coefficient is relatively large.

The percentage of residents who hold a college degree is positively correlated with higher superintendent pay, although the coefficient of 0.003 is fairly small. One reason for this could be that people with college degrees tend to value education more, which they demonstrate by spending years — and, often, quite a bit of money — earning a higher degree. Their tendency to value education more than people who opted not to continue their education after completing high school may also indicate that they value a superintendent's services more than others, and are willing to pay more for them. However, this result could instead be attributable to the fact that people who possess college degrees tend to earn more, and so this characteristic serves as a proxy for higher wages and property values among district residents.

We tested whether including variables for those with a low level of education (the percentage of district residents who had left school before the ninth grade, and the percentage of residents who had attended but not graduated from high school) affected superintendent salary. When included in the model, the variable for district residents who had left school before the ninth grade was not statistically significant at either the 5- or 10-percent levels (coefficient: -0.0001; t-score: -1.60).

Other school district characteristics found to be statistically significant were the percentage of students that received free or reduced-price lunch, the percentage of district residents who held a college degree, the percentage of nonwhite residents, whether the district served only grades K–8, and whether the district was urban or rural.

Another way to test the characteristics for which superintendents are rewarded is to look at the fixed effects of school districts, and examine the effects of changes in non-district variables.

The positive coefficient (0.0008) for the percentage of nonwhite residents in the district was unexpected. Ehrenberg, Chaykowski, and Ehrenberg found no correlation between the race of district residents and superintendent pay. Two explanations could explain this positive relationship. First, it could be that nonwhite Missouri residents think that superintendents should be paid more. It could also be that the smallest, poorest, and most rural districts in Missouri have few nonwhite residents, and that the variable representing race is picking up some of the significance of the urban and income variables.

District Fixed Effects Estimates

Another way to test the characteristics for which superintendents are rewarded is to look at the fixed effects of school districts, and examine the effects of changes in non-district variables. The most significant result of this test is the change in the coefficient of our variable measuring whether a superintendent is African American. Whereas in the wage regression there was a salary penalty of nearly 4 percent for being African American, there is very little penalty for an African American superintendent replacing a white superintendent in the same district, according to the analysis. This result is not necessarily meaningful; only four school districts in the data set hired two superintendents of a different race during the five-year period surveyed.[38]

Table 6 — Logarithm of Annual Salary (Logsal), Absorbing School Districts
Observations: 2,217; Adjusted R^2: 0.9488; Academic Years 2003–04 Through 2007–08

VARIABLE	COEFFICIENT	STANDARD ERROR	t
YREXDI	0.0045	(0.0010)**	4.76
YREXDISQ	-0.00009	(0.00003)**	-2.60
PUBLICEXP	0.0041	(0.0004)**	11.37
DOCT	0.0694	(0.0089)**	7.82
SPEC	0.0228	(0.0076)**	3.02
FRLPCT	-0.0011	(0.0005)**	-2.23
BLACK	0.0022	(0.0264)	0.08
MALE	0.0266	(0.0067)**	3.95
Y2005	0.0210	(0.0044)**	4.76
Y2006	0.0587	(0.0044)**	13.34
Y2007	0.0947	(0.0044)**	21.52
Y2008	0.1320	(0.0045)**	29.66
constant term	11.20	(0.0253)**	442.49

* Statistically significant at the 0.10 level.
** Statistically significant at the 0.05 level.

Academic Achievement

Up until this point, variables to test whether superintendents are paid for performance were left out of the wage model. Here, we test the correlation of student academic achievement with superintendent salary using Missouri's standardized state test, the Missouri Assessment Program (MAP). The MAP test assesses student proficiency in mathematics, communication arts, science, and social studies. After taking the test, students are classified as either below basic, basic, proficient, or advanced. Students in the proficient and advanced categories have met the state standards for their grade levels in the tested subject area. School districts are rated by the state based on students' MAP scores, and can even lose funding or control if too few students meet state goals for a long period of time.[39]

We used the MAP mathematics test as our measure of student achievement.[40] This test is administered each year to grades 4, 8, and 10 within all public

school districts,[41] but DESE aggregates proficiency across grades to create one proficiency percentage for an entire district, which is reported in its Adequate Yearly Progress report. A district's mathematics AYP score represents the percentage of students scoring proficient or above on the MAP mathematics test — the score used to measure student achievement. The standards for proficient, advanced, basic, and below basic changed between the 2004–05 and 2005–06 academic years,[42] so, for the sake of comparability, only student scores from years 2005–06, 2006–07, and 2007–08 were used.

We used two methods to test whether superintendent pay is correlated with student performance on the state's standardized test. The first method, used by Meier and Wilkins, included a variable for the percentage of students scoring proficient or higher on the state standardized test in the previous year within the wage regression. Including the previous year's student MAP scores in the regression equation for superintendent pay had no explanatory effect for either 2007 or 2008 superintendent salaries.[43]

A modification of this test created a variable, *increaseMAP07*, equal to "1" if the percentage of students scoring proficient or better on the MAP in the academic year ending in 2007 was higher than it was in the academic year ending in 2006. In a regression of 2007–08 superintendent salaries, that variable had a positive coefficient, in line with what we would expect. However, it was not statistically significant at either the 5-percent or 10-percent levels.

The second method was to test whether an improvement in student test scores resulted in a larger salary increase for a district's superintendent, and whether a decline in student test scores resulted in a smaller-than-average salary increase, or even a salary decrease. To test this, we compared the change in a superintendent's salary between the 2006–07 school year and the 2007–08 school year with the change in student math MAP scores from the 2005–06 school year and the 2006–07 school year. A model of the equation is shown below. In it, ΔW_t is the change in a superintendent's salary between time period "t-1" and period "t," and ΔMAP_{t-1} is the change in student MAP scores between time period "t-2" and "t-1."

$$\Delta W_t = b0 + b1\ \Delta MAP_{t-1}$$

The rationale behind this model is that school board members would know whether student achievement was increasing over time (between 2005–06 and 2006–07) when setting the superintendent's salary for the following year (2007–08). If school board members were considering test score movement when looking at superintendent pay, we would expect that if MAP scores increased, so would superintendent salary.

According to our analysis (results in Table 7), there is no measurable

According to our analysis (results in Table 7), there is no measurable relationship between superintendent salary changes during the 2007–08 school year and the change in student achievement on the MAP mathematics test between the 2005–06 and 2006–07 school years.

Table 7 — Regression of Superintendent Wage Changes Between the 2006-07 and 2007-08 School Years
Adjusted R^2 = -0.0012

VARIABLE	COEFFICIENT	STANDARD ERROR	t
deltaMAP0706	39.15	52.08	0.75
constant term	5177.653	267.1106**	19.38

* Statistically significant at the 0.10 level.
** Statistically significant at the 0.05 level.

Of the 451 contracts and responses reviewed, which we have made available online, nearly all included a clause to ensure that a superintendent would never be paid less in the future than the amount awarded in the current contract.

relationship between superintendent salary changes during the 2007–08 school year and the change in student achievement on the MAP mathematics test between the 2005–06 and 2006–07 school years.[44]

Contracts

Depending on the school district, a superintendent employment contract can be as brief as a single page, or can span 10 pages or more. Nearly all superintendent contracts include the following details:

- *Duration* — stipulates exactly how long the superintendent is employed at the district. Missouri superintendents generally operate under three- or two-year contracts. According to Glass' survey, 62.8 percent of superintendents reported working under two- or three-year contracts, with 25.6 percent reporting that their contract had a duration of four years or longer.
- *Responsibilities* — includes, in general terms, what the school board expects of its superintendent.
- *Salary* — the exact amount that the superintendent will be paid for his or her first year of work is included, along with provisions detailing how future salary increases will be determined.
- *Benefits* — details additional benefits awarded to the superintendent (more common in larger districts).
- *Days Off* — can include vacation, sick leave, professional leave, or leave of absence.
- *Evaluation Process* — notes how, and how often, the superintendent will be evaluated.
- *Termination* — explains which activities can trigger the termination of the superintendent's employment contract.

DESE does not keep information on non-salary benefits, such as district-paid retirement accounts. The contracts we requested provide us with benefit information not collected by DESE, allowing us to conduct a brief survey of both superintendent non-salary benefits and evaluation measures.

Of the 451 contracts and responses reviewed, which we have made available online,[45] nearly all included a clause to ensure that a superintendent would never be paid less in the future than the amount awarded in the current contract. More than 30 percent of superintendents received salary increases as a result of automatic or across-the-board district raises. Of those, 12 percent of the contracts stated that superintendents were awarded automatic, specific increases in salary, or that their salaries would remain the same, without mentioning the superintendent's evaluation with the district's school board or the district budget situation as a factor in determining future salary increases. More than 8 percent were awarded the same percentage increase in salary that teachers or administrators received that year, while more than 10 percent were awarded raises based on the district's strict salary schedule. A few stipulated that the superintendent's salary would be based on the school district's budget.

Roughly 14 percent were given raises based on their annual evaluations. A select

few had specific procedures written into their contracts that amounted to merit pay, either for meeting district goals, or based on board members' perceptions of the superintendent's performance.[46] This review and Ehrenberg, Chaykowski, and Ehrenberg's survey findings demonstrate that a relatively small proportion of superintendents expect to be evaluated on the basis of student academic achievement, and help explain our finding of the lack of a positive relationship between the residuals of our superintendent wage regression and MAP score regression.

For a more detailed description of how Missouri superintendents expect to be evaluated, we can look to the DESE guidelines for superintendent evaluation. A little more than 16 percent of the collected contracts specifically mentioned that the district superintendent would be evaluated under published DESE guidelines. Those guidelines include consideration of MAP scores in the evaluation process, but it is only one of many measures suggested for objective superintendent performance evaluation.[47] Others can be far more subjective, such as completion of school goals and "accomplishment of the goals identified on the principal's professional plan."

Benefits

Kowalski's superintendency textbook lists a range of benefits that school districts can provide to superintendents. Table 8 reiterates his listing of areas where the fringe benefits granted to superintendents might exceed the benefits awarded to other school employees.

Table 8 — Types of Additional Compensation That May Be Awarded to Superintendents

INDIRECT COMPENSATION	INSURANCE	LEAVES
Annuities, tax shelters	Disability	Professional
Expense allowances	Health	Number of paid vacation days
Automobile	Liability	
Payment of professional membership dues	Life	
Relocation costs		
Retirement payments		

Source: Kowalski, Theodore, *The School Superintendent: Theory, Practice and Cases*, Sage Publications, Inc., 2006.

Our survey of Missouri superintendent employment contracts includes the range of benefits Kowalski listed, as well as others. We found benefits such as district-provided cell phones, Internet connections, expense accounts for community events, a country club membership, and a house.[48] Within each category, there was wide variation. One superintendent in a wealthy district may receive more than $10,000 each year to pay for his car, while another superintendent in a more rural area said his car was donated to the district by State Farm Insurance and rebuilt by the school district's auto shop class.[49]

Table 9 details the most frequently awarded types of non-salary benefits, along with the average enrollment and percentage of students receiving free or reduced-price lunch in school districts awarding those benefits. Of the contracts surveyed, 26.1 percent of Missouri superintendents received either an annuity, a car allowance, or a district-provided car.[50] Based on this survey of benefits, our regression analysis provides the lowest possible estimate for superintendent pay, because car allowances, annuities, and other fringe benefits can add thousands more to the amount a district pays its superintendent.

A little more than 16 percent of the collected contracts specifically mentioned that the district superintendent would be evaluated under published DESE guidelines. Those guidelines include consideration of MAP scores in the evaluation process, but it is only one of many measures suggested for objective superintendent performance evaluation.

Table 9 — Extent of Car Allowances, Annuities, and Cars Awarded to Missouri School Superintendents

BENEFIT	NUMBER RECEIVING	PERCENT OF SURVEYED CONTRACTS	AMOUNT	MEAN SALARY	FRLPCT	ENROLLMENT
Car allowance	104	23	$4,621	$121,962	43	4,166
Annuities	31	6.9	$10,508	$133,355	39	5,641
Car	28	6.2	District-provided car	$127,323	42	5,297

Full-time superintendents, total observations: 452.
Salary, percentage of students receiving free or reduced-price lunches, and student enrollment figures are all from the 2007–08 school year.
No superintendents earning $40,000 per year or less were found to receive an annuity, a car allowance, or a district-provided car.

This analysis suggests that fringe benefits do not replace compensation, but instead supplement it.

These results are comparable to the survey of southeastern Missouri superintendent benefits during the 1994–95 academic year conducted by I. Sue Shephard, dean of the College of Education at Southeast Missouri State University. Shephard found that 93.2 percent of surveyed superintendents (N=88) were awarded some sort of transportation compensation, in the form of a provided car, mileage allowance, or annual allowance. She found that 23.8 percent of districts awarded superintendents a car allowance, very similar to the 22.6 percent found in the present study. However, Shephard reported that 12.5 percent of southeastern Missouri school districts provided a car, more than twice the percentage found in the present study's survey of superintendent contracts. This large difference may be attributable to a change in how superintendents are compensated. It may also be that some districts award cars to superintendents without listing them as a benefit in the superintendent's employment contract.

Shephard found that 13.6 percent of southeastern Missouri school districts awarded tax-sheltered annuities to superintendents, a rate nearly twice as high as that found in the present study (6.9 percent). According to Shephard, a large majority of those annuities were for amounts of less than $10,000, with only one superintendent receiving an annuity for more than $25,000.

Annuities

If annuities were awarded to superintendents as part of their total compensation package, then we would expect that superintendents receiving annuity payments earn smaller nominal salaries than superintendents who do not receive annuity payments working in districts of similar size and wealth. The same negative relationship can be deduced for car allowances and district-provided cars.

To test this inverse relationship between salaries and fringe benefits, we added dummy variables for annuity payments, a district-provided car, and a car allowance to the superintendent wage regression equation. The inclusion of those variables added little additional explanatory value to the model and were not statistically significant.

This analysis suggests that fringe benefits do not replace compensation, but instead supplement it. If money given to a superintendent to pay for car expenses were considered a form of salary by school boards, we would expect a negative relationship between salary and that variable. We consider the

Table 10 — Comparison of Annuity Payments Awarded to Missouri School Superintendents Among Salary Quartiles, and by Percentage of District Students Eligible for Free or Reduced-Price Lunches

QUARTILE	NUMBER OF SUPERINTENDENTS RECEIVING ANNUITY PAYMENTS	MEAN FRLPCT	ANNUITY PAYMENTS MEAN	ANNUITY PAYMENTS MINIMUM	ANNUITY PAYMENTS MAXIMUM
1st	2	57.85	$2,300	$1,200	$3,400
2nd	2	58.5	$1,200	$1,200	unknown[51]
3rd	7	41.6	$8,221	$2,700	$12,500
4th	22	36.25	$12,534	$2,400	$44,000

* Mean of *frlpct* for all Missouri school districts, excluding charter and special schools.

positive relationship, in which only wealthy districts would provide car payments to superintendents, already accounted for in our variable *frlpct*, a measurement of the percentage of students eligible for free or reduced-price lunch.

Furthermore, we can look at the distribution and range of annuity payments, along with the percentage of district students eligible for free or reduced-price lunches, for evidence that annuities are awarded to higher-paid superintendents working at school districts with relatively wealthy residents.

As illustrated in Table 10, superintendents earning salaries within the lower first and second quartiles were awarded relatively small annuity payments, if any. Of the first 226 superintendents, only four were awarded annuity payments. In contrast, superintendents earning salaries within the upper third and fourth quartiles were awarded much larger annuity payments. But the superintendents in the fourth quartile earned by far the most and largest annuity payments. Of 113 superintendents earning salaries greater than $112,000, 22 earned annuity payments with a mean of $11,694. These annuity payments can be a substantial portion of a superintendent's compensation. For example, the Independence School District superintendent, who was awarded an annuity payment of $30,000, earned $200,000 during the 2008–09 school year, which put his annuity payments at 15 percent of his salary.

One possible explanation for these large annuity payments is that they could be retirement payment alternatives for mobile superintendents who expect to work in other states later in their careers. Because all full-time Missouri public school district employees, except those in Kansas City and Saint Louis, are required to participate in the state's Public School Retirement System (PSRS), the presence of annuity payments for superintendents is unexpected. Under PSRS, the school district and employee each contribute an equal percentage of the employee's salary into the system for retirement purposes, unless, as in a few cases, the school district also pays the superintendent's portion of the PSRS contribution. The fact that superintendents are receiving annuity payments on top of other retirement payments may suggest a weakness in PSRS. Specifically, we wondered whether superintendents who received annuity payments were concerned about losing retirement benefits if they left Missouri.

To explore this further, we contacted four Missouri school superintendents who

Because all full-time Missouri public school district employees, except those in Kansas City and Saint Louis, are required to participate in the state's Public School Retirement System (PSRS), the presence of annuity payments for superintendents is unexpected.

When considering superintendent compensation, it is important to look at the extras. As demonstrated in our survey of superintendent contracts, even a totaling of salary and annuity amounts ignores a significant portion of superintendent compensation.

received annuity payments as additional compensation. Three of these four superintendents worked at relatively large school districts — those who we thought may have worked or considered working outside of Missouri. The fourth worked at a smaller district. All four contacted superintendents defended PSRS as a strong asset for Missouri public school employees. Three[52] superintendents said annuity payments were used to offset the compensation differences between public school superintendents and the amount that an individual charged with running a similarly sized corporation would be paid. Because superintendent salaries are public information, disguising a portion of a superintendent's compensation as annuity payments could serve as a means by which school boards and superintendents attempt to avoid a measure of public scrutiny. It should be noted, however, that annuity payments and any other contractual benefits awarded to superintendents are available under the same Missouri public information statute that addresses superintendent salary. Total superintendent compensation is only hidden when the person or news organization requesting superintendent compensation information fails to understand that annuity payments are an annual and additional form of compensation.

VII. CONCLUSION

When considering superintendent compensation, it is important to look at the extras. As demonstrated in our survey of superintendent contracts, even a totaling of salary and annuity amounts ignores a significant portion of superintendent compensation. In order to give readers an accurate depiction of a superintendent's compensation, education reporters should not report salary alone — they should also report non-salary benefits awarded to superintendents.

Furthermore, Missourians should ask whether the school board has included specific provisions in the superintendent's contract to reward him or her for a job well done. As in other professions, superintendent compensation should be structured around a specific superintendent's abilities and strengths, as well as on his or her job performance. Previous empirical studies have shown little or no correlation between a superintendent's compensation and student academic achievement on state standardized tests. Our analysis confirms these results, years after the passage of the No Child Left Behind Act. Additionally, the vast majority of Missouri superintendents had no specific evaluation mechanism written into their employment contracts, other than that they would be evaluated. Roughly 14 percent of contracts stated explicitly that salary increases were dependent on some sort of evaluation. We are aware of no previous estimate.

It seems that school board members look to other school districts to determine the amount that they will pay their superintendent. This behavior should lead to a fairly predictable superintendent compensation package, with little variation, which could explain why our model fits so well with actual salary data. Anecdotally, some school districts determine their superintendent

salary by taking a simple average of the amounts that other districts pay. The Lindbergh School District, for example, uses a list of 11 specific school districts in its superintendent contract to arrive at the superintendent's salary. Lindbergh averages the salaries awarded to the other district superintendents during the previous year, and multiplies that average by 111 percent to establish its superintendent's salary.

A public discussion is needed in each district regarding how school board members arrive at the salary and benefits awarded to their superintendent. Just because a superintendent is awarded a modest level of compensation doesn't mean that the structure and rationale behind that decision is good — or effective. Based on our review of employment contracts, the superintendents awarded non-salary benefits were not paid less than we would expect, given the characteristics of each of the superintendent, district residents, and school districts in question. That analysis suggests that non-salary benefits do not replace salary, but instead supplement it. Given that school districts are currently scrambling to find areas of district spending to cut, a good discussion for school board members and district residents to have would be whether some of the perks awarded superintendents, such as automobile and event allowances, should take budgetary priority over other school district expenditures.

As Bruce Buchanan suggested in *Turnover at the Top*, the very generous compensation awarded to superintendents may have nothing to do with encouraging or rewarding performance, but instead may be a form of public perception insurance for school boards. If school district residents suspect that this is the motivation behind school board members' large salary offers, they can speak up at their district's board of education meetings to point out that board members should manage district money more effectively. Barring that, if district residents are upset about how school board members are managing the superintendent and school district expenditures, they can vote in the next April school board election. Turnout in school board elections is historically low, and increased voter participation from district residents interested in the management of their school district likely could nudge board members in a better direction.

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Based on our review of employment contracts, the superintendents awarded non-salary benefits were not paid less than we would expect, given the characteristics of each of the superintendent, district residents, and school districts in question.

APPENDIX 1

Columbia School District Teacher's Salary Schedule
2007-2008 • 189 Days • $30,514 Base; $34,353 Minimum

	I		II		III		IV		V		VI		VII		VIII		
	B.S.		BS + 15 or 150		MS		MS + 15		MS + 30		MS + 45		MS + 60		M.S. + 75 / DOCTORATE		
Step	Salary	Index	Salary	Index	Salary	Index	Salary	Index	Salary	Index	Salary	Index	Salary	Index	Salary	Index	Step
1	$ 34,353		$ 34,353		$ 34,353	1.125	$ 35,549	1.165	$ 36,770	1.205	$ 37,990	1.245	$ 39,211	1.285	$ 40,431	1.325	1
2	$ 34,353		$ 34,353		$ 35,549	1.165	$ 36,770	1.205	$ 37,990	1.245	$ 39,211	1.285	$ 40,431	1.325	$ 41,652	1.365	2
3	$ 34,353		$ 34,353	1.12	$ 36,770	1.205	$ 37,990	1.245	$ 39,211	1.285	$ 40,431	1.325	$ 41,652	1.365	$ 42,873	1.405	3
4	$ 34,353	1.12	$ 35,397	1.16	$ 37,990	1.245	$ 39,211	1.285	$ 40,431	1.325	$ 41,652	1.365	$ 42,873	1.405	$ 44,093	1.445	4
5	$ 35,397	1.16	$ 36,617	1.20	$ 39,211	1.285	$ 40,431	1.325	$ 41,652	1.365	$ 42,873	1.405	$ 44,093	1.445	$ 45,314	1.485	5
6	$ 36,617	1.20	$ 37,838	1.24	$ 40,431	1.325	$ 41,652	1.365	$ 42,873	1.405	$ 44,093	1.445	$ 45,314	1.485	$ 46,534	1.525	6
7	$ 37,838	1.24	$ 39,058	1.28	$ 41,652	1.365	$ 42,873	1.405	$ 44,093	1.445	$ 45,314	1.485	$ 46,534	1.525	$ 47,755	1.565	7
8	$ 39,058	1.28	$ 40,279	1.32	$ 42,873	1.405	$ 44,093	1.445	$ 45,314	1.485	$ 46,534	1.525	$ 47,755	1.565	$ 48,975	1.605	8
9	$ 40,279	1.32	$ 41,499	1.36	$ 44,093	1.445	$ 45,314	1.485	$ 46,534	1.525	$ 47,755	1.565	$ 48,975	1.605	$ 50,196	1.645	9
10	$ 41,499	1.36	$ 42,720	1.40	$ 45,314	1.485	$ 46,534	1.525	$ 47,755	1.565	$ 48,975	1.605	$ 50,196	1.645	$ 51,417	1.685	10
11	$ 42,720	1.40	$ 43,941	1.44	$ 46,534	1.525	$ 47,755	1.565	$ 48,975	1.605	$ 50,196	1.645	$ 51,417	1.685	$ 52,637	1.725	11
12	$ 42,820	*$ 100*	$ 45,161	1.48	$ 47,755	1.565	$ 48,975	1.605	$ 50,196	1.645	$ 51,417	1.685	$ 52,637	1.725	$ 53,858	1.765	12
13	$ 42,920	*$ 100*	$ 45,261	*$ 100*	$ 48,975	1.605	$ 50,196	1.645	$ 51,417	1.685	$ 52,637	1.725	$ 53,858	1.765	$ 55,078	1.805	13
14	$ 43,020	*$ 100*	$ 45,361	*$ 100*	$ 49,281	*1.615*	$ 51,417	1.685	$ 52,637	1.725	$ 53,858	1.765	$ 55,078	1.805	$ 56,299	1.845	14
15	$ 43,120	*$ 100*	$ 45,461	*$ 100*	$ 49,586	*1.625*	$ 51,722	*1.695*	$ 53,858	1.765	$ 55,078	1.805	$ 56,299	1.845	$ 57,519	1.885	15
16	$ 43,240	*$ 120*	$ 45,561	*$ 100*	$ 49,891	*1.635*	$ 52,027	*1.705*	$ 54,163	*1.775*	$ 56,299	1.845	$ 57,519	1.885	$ 58,740	1.925	16
17	$ 43,360	*$ 120*	$ 45,681	*$ 120*	$ 49,891		$ 52,332	*1.715*	$ 54,468	*1.785*	$ 56,604	*1.855*	$ 58,740	1.925	$ 59,961	1.965	17
18	$ 43,480	*$ 120*	$ 45,801	*$ 120*	$ 49,891		$ 52,332		$ 54,773	*1.795*	$ 56,909	*1.865*	$ 59,045	*1.935*	$ 61,181	2.005	18
19	$ 43,600	*$ 120*	$ 45,921	*$ 120*	$ 49,891		$ 52,332		$ 54,773		$ 57,214	*1.875*	$ 59,350	*1.945*	$ 62,402	2.045	19
20	$ 43,720	*$ 120*	$ 46,041	*$ 120*	$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655	*1.955*	$ 63,622	2.085	20
21	$ 43,720		$ 46,161	*$ 120*	$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 64,843	2.125	21
22	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 65,148	*2.135*	22
23	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 65,453	*2.145*	23
24	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 65,758	*2.155*	24
25	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 65,878	*$ 120*	25
26	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 65,998	*$ 120*	26
27	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 66,118	*$ 120*	27
28	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 66,238	*$ 120*	28
29	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 66,358	*$ 120*	29
30	$ 43,720		$ 46,161		$ 49,891		$ 52,332		$ 54,773		$ 57,214		$ 59,655		$ 66,478	*$ 120*	30

APPENDIX 2: ADDITIONAL TABLES

Table 11 — Testing for School District Clusters Within Superintendent Wage Regression; Logarithm of Annual Salary (Logsal); Standard Errors Adjusted for 461 School District Clusters Observations: 2,217; R^2: 0.8614

VARIABLE	COEFFICIENT	STANDARD ERROR	t
logenroll	0.1466	(0.0061)**	24.09
yrexdi	0.0040	(0.0015)**	2.63
yrexdisq	-0.0001	(0.00005)**	-2.63
publicexp	0.0037	(0.0006)**	6.35
doct	0.1006	(0.0140)**	7.17
spec	0.0502	(0.0110)**	4.58
pcthighdegree	0.0034	(0.0006)**	6.10
pctnonwhite	0.0016	(0.0007)**	2.44
frlpct	-0.0007	(0.0004)*	-1.74
rural	-0.0152	(0.0107)	-1.43
urban	0.1218	(0.0174)**	6.99
black	-0.0406	(0.0370)	-1.10
male	0.0265	(0.0090)**	2.95
k8	0.0463	(0.0219)**	2.11
y2005	0.0204	(0.0034)**	5.98
y2006	0.0580	(0.0046)**	12.50
y2007	0.0936	(0.0055)**	17.08
y2008	0.1322	(0.0060)**	21.91
constant term	10.10	(0.0438)**	230.33

* Statistically significant at the 0.10 level.
** Statistically significant at the 0.05 level.

Table 12 — Additional District Resident Education Variables Included; Logarithm of Annual Salary (Logsal); Includes Variables for Percentage of District Residents With Less Than a Ninth-Grade Education and Percentage of District Residents Who Finished Ninth Grade but Did Not Finish High School Observations: 2,217; R^2: 0.8618

VARIABLE	COEFFICIENT	STANDARD ERROR	t
Logenroll	0.1445	(0.0030)**	47.95
Yrexdi	0.0039	(0.0009)**	4.37
Yrexdisq	-0.0001	(0.00003)**	-4.09
Publicexp	0.0038	(0.0003)**	11.96
Doct	0.1005	(0.0089)**	11.29
Spec	0.0501	(0.0077)**	6.47
Pctlessthan9th	-0.0011	(0.0007)	-1.60
Pctsomehighschool	0.0040	(0.0009)**	5.07
Pcthighdegree	0.0040	(0.0003)**	13.59
Pctnonwhite	0.0015	(0.0003)**	4.41
Frlpct	-0.0012	(0.0002)**	-4.99
Rural	-0.0119	(0.0060)**	-1.98
Urban	0.1222	(0.0085)**	14.29
Black	-0.0397	(0.0229)*	-1.74
Male	0.0240	(0.0060)**	4.03
K8	0.0425	(0.0117)**	3.63
y2005	0.0208	(0.0072)**	2.90
y2006	0.0582	(0.0071)**	8.14
y2007	0.0943	(0.0071)**	13.32
y2008	0.1332	(0.0071)**	18.77
constant term	10.6	(0.0262)**	384.34

* Statistically significant at the 0.10 level.
** Statistically significant at the 0.05 level.

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NOTES

1 **According to DESE salary data, average superintendent salary was $96,711 in 2008, based on 490 observations of full-time superintendents earning more than $40,000. Of those superintendents, 31.2 percent earned more than $100,000.**

2 **According to DESE salary data of full-time teachers and administrators.**

3 **According to DESE salary data. Mean salary was computed from 293 observations of full-time district superintendent salary available for both 2009 and 2010.**

4 **Glass and Franceschini (2007), p. 15.**

5 **Of course, as with every average, there are some outliers. For example, the Clayton, Brentwood, and Ladue school districts all receive more than 95 percent of their funding from local sources, while the Naylor, Ripley, and Cooter districts all receive more than 70 percent of their funding from state and federal sources.**

6 **Percentages from DESE school finance data for year 2009. Charter schools and special school districts were included in this analysis.**

7 **Salary information for any public official is available under the federal Freedom of Information Act and Missouri Revised Statutes 610.010, 610.023, 610.024, and 610.026.**

8 **The Nebraska Department of Education collects two categories of non-salary compensation. The first category, benefits, includes insurance payments, the school district's share of retirement and FICA payments, the IRS value of housing and automobile allowances, and deferred compensation. The second category, additional compensation, includes bonus, incentive, and performance pay, as well as pay for extracurricular duties and stipends.**

9 **Glass and Franceschini (2007), p. 80.**

10 **Based on an analysis of DESE school district finance data for the 2009–10 school year.**

11 **Glass and Franceschini (2007), p. 79.**

12 **Buchanan (2006), p. 67.**

13 **Ibid., p. 35.**

14 **Bjork (2005), p. 5**

15 **Contract made available by PubDef.net**

16 **Buchanan (2006), p. 118.**

17 **Dillon, Ashley, and Jennifer Ledbury, "Ritter will work to restore confidence in the district," *Columbia Missourian*, Aug. 13, 2008. Online here: tinyurl.com/348mo5x**

18 **Young (2007).**

19 **Buchanan (2006), pp. 151–152.**

20 **Candoli, Cullen, and Stufflebeam (1997).**

21 **Kowalski (2006).**

22 **Candoli, Cullen, and Stufflebeam (1997), p. 36.**

23 **Hoyle and Skrla (1999), pp. 415–417.**

24 **Candoli, Cullen, and Stufflebeam (1997), p. 11.**

25 **Hoyle, Bjork, Collier, and Glass (2005).**

26 **Missouri Department of Elementary and Secondary Education (2006).**

27 **Missouri Department of Elementary and Secondary Education (2003).**

28 **Ehrenberg, Chaykowski, and Ehrenberg (1988).**

29 **Ibid., p. 389.**

30 **The impact of a superintendent's sex or race on salary was not tested.**

31 **The survey had a response rate of 80 percent, and student academic achievement was the eighth-most-listed evaluation criterion.**

32 **Authors used a lagged math performance variable to measure student academic performance. For superintendents who**

did not switch districts, the authors found that a 1-percent increase in student scores on the sixth-grade state math test led to a 0.007-percent increase in superintendent salary.

33 Meier and Wilkins (2002).

34 To put this coefficient's size into perspective, it was substantially smaller than the coefficient for logged budget size (0.1558), but equal to the coefficient for the superintendent age variable.

35 Hanushek and Rivkin (2004).

36 Those districts are: the Pemiscot County Special School District, Missouri School for the Blind, Missouri School for the Deaf, the Special School District of St. Louis County, the State Schools for the Severely Handicapped, and University Academy. The average superintendent salary at those districts in 2008 was $104,035.

37 Of the total observations during the 2004–08 period, 140 part-time superintendents worked in rural school districts. For the 2007–08 school year, 24 part-time superintendents worked in rural districts.

38 Those districts were Grandview, Kansas City 33, Jennings, and Saint Louis Public Schools.

39 Missouri Department of Elementary and Secondary Education (2006).

40 We created a variable for the percentage of students scoring proficient or higher on the state communication arts test. When included in the superintendent salary regression equation for the following year, the communication arts variable had a positive relationship with superintendent salary, but was not statistically significant. The 2006 score variable had a p value of 0.293; the 2007 score variable had a p value of 0.698.

41 Missouri Department of Elementary and Secondary Education (2006).

42 Ibid.

43 The t-score for the ppluspct06 variable was 0.11 in the regression of 2007 superintendent salaries, and -0.30 for the *ppluspct07* variable in the regression of 2008 superintendent salaries.

44 The same results are found when repeating this regression analysis for the same time periods, but using the aggregate district scores on the MAP Communications test (the t statistic for MAP variable was 0.74).

45 The 451 superintendent contracts and responses we collected are available online here: showmedaily.org/superintendent-contracts

46 The 2008 employment contract for the Cape Girardeau 63 district awards the superintendent an annual salary increase between 2 and 5 percent, depending on board evaluation. The 2007 employment contract for the North Kansas City 74 district offers its superintendent $7,500 if district goals are met. The 2007 employment contract for the Parkway C-2 district automatically awards its superintendent half of the average increase awarded administrators, plus a percentage increase determined by a board vote on superintendent performance.

47 Others are: student attendance, dropout rates, discipline referrals, national standardized tests, parent participation in school processes, graduation rates, suspension rates, course failure rates, contextual demographic data, perceptual data from various groups. See: Missouri Department of Elementary and Secondary Education Administrator Evaluation Committee, "Guidelines for Performance-Based Principal Evaluation," 2003.

48 Thirty superintendents, or 6.4 percent of the surveyed sample, were awarded cell phones or cell phone allowances. The Independence School District pays its superintendent $3,600 each year for him and his family to attend community meetings, receptions, and dinners; the Bronaugh R-VII School District's superintendent employment contract lists the physical location of a house as one of the superintendent's benefits.

49 According to an interview with the Webster Groves School District superintendent on Sept. 25, 2008.

50 Of the 452 surveyed superintendents, 118 received at least one of the three types of benefits listed.

51 The Gideon district awards its superintendent annuity payments that increase by $600 each year. The current superintendent has worked for the district for 21 years. From his current three-year contract, we cannot state with certainty when the annuity payments began.

52 The other, from the Cooter school district, said he received annuity payments in lieu of district-provided health insurance payments.

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