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Sexual Politics in the California Public K-12 Superintendency and District Office
Personnel System

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education

by

Jennifer W Stuckey

March 2012

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Dedication

For my husband and my son

ABSTRACT OF THE DISSERTATION

Sexual Politics of the California Public K-12 Superintendency and District Office
Personnel System

by

Jennifer W Stuckey

Doctor of Philosophy, Graduate School of Education
University of California, Riverside, March 2012
Dr. Douglas E. Mitchell, Chairperson

A review of literature suggests women superintendents face several

disadvantages gaining access to positions as public school district superintendents. This

study focused on 1) which characteristics applied to the prediction of women

superintendents in California public K-12 system; 2) if the predecessor's sex predicted

for the successor's sex; 3) whether the percentages of women districts office staff

changed because of districts' hiring of women superintendents. The data include

districts that appointed new superintendents between 2000 and 2008, N=1690. Logistic

regression was used and found doctoral degree, years of educational service, years in

the district, large suburbs and large cities, API, and student enrollment total were the

seven predictors show significance for women superintendents. Cross-tabulation was

then applied to test whether the predecessor's sex influences the successor's sex, χ^2 (1)

= 1120 .361, p = .000 < .05, revealing that the association between superintendent's sex

before turnover was significant. That is, if districts had women superintendents before, it is easier for women successors to enter these districts again. One repeated, one within ANOVA was used to test whether superintendent's sex influence the percentage of female district staff. The results found it was not significant to determine the rate of increase based on superintendent's sex. Women superintendents did not increased the percentages of female district office staff; rather, women were more likely to enter districts with larger female principal percentages than men. The percentages of female principals and student services staff increased overtime for both women and men superintendents, but the rate of increase was not significant.

This study concludes with only examining the percentages of new hired women superintendents, there were 27.3%. However, if we used historical record of women superintendents, the percentages increased from 8.25% in 1985 to 31.7% in 2008. Women superintendents won a small numbers of districts that used to be men. If we examined by the high status districts, women superintendents were more likely to be in large suburbs and large cities with higher API scores than men superintendents.

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Chapter I: Introduction

Ever since the first official superintendent was appointed in 1837 in Buffalo, New York, the role of school superintendent has been characterized differently in different periods. The title for that first superintendent was "school inspector," and the responsibility of the superintendent in that period was to assist the school board to ensure teachers would implement a common curriculum for public schools (Brunner, Grogan, and Bj⬚rk, 2002; Griffiths, 1966; Kowalski, 2006). Between 1850 and 1900, the superintendents' roles were characterized as teacher-scholar. Superintendents not only provided standards of best practice for public school administration as master teachers but also were authors of professional journal articles about history, pedagogy, and philosophy (Callahan, 1962, Kowalski, 2006). In the period from 1890 to 1930, "Ellwood Cubberly, George Strayer, and Franklin Bobbitt, joined political elites in demanding that school administrators learn and apply the principles of the scientific management" (Kowalski, 2006, p. 40). The responsibilities for superintendents of this period included serving as both instructional leader and business manager. In 1930-1950, superintendents' roles changed again to include political leadership because school officials were forced to lobby state legislatures for limited fiscal resources available to school districts. From the 1950s to 1967, two new factors led to the conception of the role of the superintendent as a social scientist: the establishment of school administration as an academic discipline and the employment of systems theory for superintendents to recognize how external political, social, and economic systems

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affected school organizations (Callahan, 1962; Kowalski, 2006). After 1967, the role of superintendent changed once more to that of communicator. "Communicative expectations for administrators reflect a confluence of reform initiatives and the social environment in which they are being pursued" (Kowalski, 2006, p. 47). As communicators, superintendents need to be aware of the politics of districts. That is, superintendents need to be able to report to the board about districts' activities as well as to communicate to the staff and the community. Several studies have characterized the importance of superintendents in the 21st century lies in their capacity to understand the political structure of the school board and to handle conflicts within the local communities (Bjärk & Kowalski, 2005; Carter & Cunningham, 1997; Cooper & Fusarelli, 2002; Dana & Bourisaw, 2006; Heck & Hallinger, 1999; Hoyle et al., 2005; Spring, 2005).

Representation of Women in the Superintendency

Despite the evolution of the roles of the superintendent over different periods of time since the position was first established, the access of women to the position has seldom been specifically addressed. Among those studies that do address this issue, a "glass ceiling" effect has been most prevalent conclusion. Some studies find that the superintendent position is the most male-dominated executive position of any profession in the United States (Bjärk et al., 2005, p. 32; Dana & Bourisaw, 2006; Glass et al., 2000; Glass & Franceschini, 2005). These studies suggest that the public school

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superintendency has been the slowest of all public K-12 administrative positions to integrate women; thus, suggesting the persistence of a "glass ceiling" blocking the access of women educators to the superintendency (Brunner, 1999, 2000; Dana & Bourisaw, 2006; Grogan, 1996; Ortiz, 1982; Shakeshaft, 1999; Tallerico, 2000).

Some current studies note that while the percentage of women superintendents is small, their numbers are steadily increasing (Bj rk et al., 2005; Cooper & Fusarelli, 2002; Glass et al., 2000; Glass & Franceschini, 2007). A survey of superintendents conducted by Kowalski et al. (2011) shows that women superintendents have increased representation overtime, "24.1% were females [in 2011]" compared to "a mere 1.2% reported in 1982 (Glass, 1992)" (pp. 17-18).

Potential Different Perspectives of This Study

There are different perspectives from which to discuss sexual segregation in educational leadership. Collins et al. (1993) identify four different frameworks to explain sexual inequality, each of which has been formulated by various scholars. The frameworks are: socio-biology, socialization, sexual politics, and cultural/historical. Although they will not be used in this study, this section briefly discusses the perspectives of socio-biology, socialization, and cultural/historical. Sexual politics theory will be used in this study and will be addressed individually in the following section.

Sexual segregation is not unique to educational leadership. Other studies of sexual inequality also discuss disadvantages in various organizations that accrue due to

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a person's biological sex. These include, to list a few, Wright and Jacob's (1994) discussion of men who left the computer engineering occupation all together because it had become feminized; Rich's (1995) discussion of how various banking positions prefer one sex over the other. Men also face sexual inequality in certain occupations. Williams (1995) discusses the ways sexual segregation influence men's access to and willingness to stay in certain types of occupations that are viewed as "women's jobs" (i.e. elementary teaching, nursing, social work, and librarians). These studies, though not directly related to women superintendents, help this study to build a complex understanding of sex stratification in organizations. That is, there can be more than one framework to discuss sexual inequality in the superintendency. For example, to discuss briefly, a sociobiology framework can be used to discusses how women and men's biological differences limit women's (and also men's) opportunities in certain occupations and organizations. On the other hand, a socialization framework focuses on how women and men are socialized into different gender roles which then lead to stereotypical definitions of women as teachers and men as managers. Finally, a cultural and historical framework notes how specialized organizational positions shape a stratified structure. While these, and other, frameworks can provide a valuable vantage on the question of sexual segregation in district offices, the data that I collected for this study cannot address various aspects of these frameworks. Hence, only sexual politics theory will be used in this study.

Sexual Politics Theory

The theoretical framework that this study employs is sexual politics theory. Sexual politics stresses "that politics is intrinsic to the forms that gender relations take, and that gender relations are always being contested" (Franzway & Fonow, 2011, p. 26). Collins et al. (1993) see sexual politics as one of the characteristics of sexualized organizational structures which are grounded on conflict arising from an unequal distribution of political power between men and women. This study documents the fact that, despite traditional views of the superintendency as male dominated, women educators are increasingly challenging men's power and are, with increasing success, competing with men to gain access to, and remain in, the superintendency.

Sexual political theory also asserts that a predecessor's sex influences the likelihood of their successor's sex. Philips (2005), in a study of law firms, discovered that law firm founders' work cultures tend to be transferred with them when they move from one firm to another. If the founders of new firms have worked with women or women have been promoted to partner status in their previous firms, then they are more likely to treat men and women equally. And, if the founders of new firms have only worked with women in the associate track or as subordinates, then they are not likely to promote women to partnership. The data reported here find that, as with the Phillips (2005) study of law firms, districts that have hired a woman superintendent

previously, are more likely to hire another woman than are districts which have not had a woman superintendent before.

Another aspect of sexual politics theory is the support within the organizations through networking and support from colleagues and staff. Studies have shown that women superintendents are more likely to network with each other or become mentors for fellow female superintendents, even though the percentage of women superintendents may be small (Blount, 1996; Brunner & Grogan, 2007; Dana & Bourisaw, 2006; Ortiz, 1982). One historical example was Ella Flagg Young, who at the beginning of the 20th century became the first woman superintendent for the Chicago public school system and the first woman president of the National Education Association (NEA). Young said "women are destined to rule the schools of every city...I look for a majority of big cities to follow the lead of Chicago in choosing a woman for superintendent. In the near future we shall have more women than men in executive charge of the vast educational system" (Blount, 1998; Tyack and Hansot, 1982, p. 180). One of the factors that benefited Young's superintendency was the support from female networks of friends, colleagues, and political allies. This support helped Young win the position of superintendent as well as gain the upper hand in political power struggles between several male politicians and the school board. Tyack and Hansot (1982) state:

> These groups and teacher associations persuaded thousands of
> women to sign petitions and to demonstrate support on two
> occasions-first when Young resigned in 1899 over the autocratic
> policies of the new superintendent and then in 1913 when members

of the school board harassed her. In Chicago, women's clubs were an important source of pressure for educational reform and served as significant allies to Young in her work (p. 197).

Using Young's example and the arguments from the sexual politics theory, this study expects that in districts which hire women superintendents, the percentage of women district office staff will increase their representation over time in order to form political support and secure the female leadership.

Educational organizations are the context within which the sexual politics of hiring women superintendents occurs, and sexual politics theory addresses the various elements that can be examined as possible factors influencing the hiring of women superintendents and the consequences of hiring women. The following section discusses how one of the elements, Academic Performance Index (API), from the California accountability policy, influences the sexual politics of superintendent hiring. The API scores measures how schools within districts perform by using several standardized tests at various grade levels. If a school does not meet the API target, then if within a certain time frame, the school does not show any academic improvement, and then the whole school staff will be replaced. If majority of the schools within a district are not able to meet the API target and cannot show any improvement, then it is possible to suggest that this district's superintendent will be replaced. API is related to women superintendents because it is a measurement of how women superintendents perform as leaders. If women superintendents are able to meet the API target, then they are more likely to stay or increase opportunities for women successors.

Accountability Policy as it Relates to the Hiring of new Superintendents

According to Hanson (2003), "school administrators are not in control of the external systems that play major roles in the conduct of affairs in their organizations" (p. 119). These external systems influence how district leadership positions turnover. For example, the No Child Left Behind Act of 2001 (NCLB, 2001), a testing-based accountability educational policy, has various impacts on school organizations. High-stakes tests promote alignment of the curriculum to the tests and consequently standardization of the curriculum (Hoyle, 2005). The accountability requirements of NCLB mean that test results can be used as a measurement of not only students' performance but also to evaluate the educational staff's job performance. If that performance has not met the standards that each state has planned, then interventions and sanctions will be applied to various schools and staff (NCLB, 2001; Hoyle, 2005). In California, the state's accountability plan is called the Academic Performance Index (API), which purpose is to "measure the academic performance and growth of schools on a variety of academic measures" (CDE, retrieved 2009). Prior to the NCLB Act of 2001, California had already engaged in the "creation of an educational accountability system" (CDE, retrieved 2009), the Public School Accountability Act (PSAA). The PSAA and API both use standardized testing to rank schools based on students' testing results. California Department of Education has collected academic performance data in order to make schools, educators, and district leaders accountable.

Based on the sexual politics theory described, men superintendents are expected to be located at high status districts. That is, districts which have more resources, are located in affluent neighborhoods, have majority white/Asian populations, have higher parental involvements and better academic achievement scores (Hochschild, 2003; Lareau, 2000; Lee, 1996). This study uses the district location and academic performance as two predictors for the hiring of women superintendents. Given the lower status attributed to women in previous research, if the sexual politics theory is true, women superintendents are less likely to be in suburban school districts. The districts with women superintendents are less likely to have API scores which meet or exceed the California requirement of 800.

Purposes of This Study

There are two purposes of this study. The first purpose is to examine several characteristics indentified by recent women superintendency studies to understand how these characteristics influence the politics of hiring superintendents in California K-12 public school systems. These characteristics are: years of educational service, years in the district, ethnicity, educational level, student enrollment, average parent educational level, API scores, district locale, the percentage of students who are in lunch program NSLP), and the percentage of students who are English Language Learners. Previous studies have shown that there are differences between men and women superintendents in terms of these characteristics. For example, some superintendents

have earned doctorates but others have not. Grogan (1996) and Wickham (2007) suggest that although districts often advertize for superintendent candidates indicating that the doctoral degree is preferred, but not required, the degree has become increasingly standard for superintendent candidates (Carter & Cunningham, 1997; Glass et al., 2000; Hoyle et al., 2005). A detailed review of these characteristics can be found in Chapter II. The characteristics are derived from studies that discuss a glass ceiling effect for women superintendents. However, this study is not designed to demonstrate whether California public K-12 districts have or lack a glass ceiling effect on women superintendents.

The second purpose of this study is to test whether districts that hired women superintendents have larger percentages of women district office personnel than those districts that hired men superintendents. This purpose is to show that women superintendents increase the representation of women staff because the female network can help women to secure a district's leadership positions.

Research Design Overview

This study uses data from the California Basic Educational Data Base System (CBEDS), which is collected by the California Department of Education (CDE) annually and includes every superintendent and certificated professional educator in the state's public K-12 system. Data were also collected from the National Center of Educational Statistics (NCES) Common Core Data (CCD) and CDE's API Data Files to provide district

characteristics for this study. This study included public school districts in California that

experienced a turnover from 2000 to 2008. The large sample size reduces the

probability of error. In addition, although budget constraints have prevented CDE from

publishing the *California School Directory* every year, in years when it has been

published, the printed copy of the *Directory* enables verification of the accuracy of

calculation for superintendent turnover. The data file that is discussed in Chapter III

presents an accurate picture of California superintendency turnover.

This study selected the years from 2000 to 2008 as the study period because API

data exists only after 1999. The 2009-10 data from the CBEDS's PAIF are not included in

the data because the CDE had not yet published the data in time for this study.

Longitudinal data are important in this study because not every district in California had

a turnover for each of the study years. As a result, a multiple-year dataset expanded the

study sample allowing for more reliable conclusions.

Significance of This Study

This study provides a unique approach to the study of female leadership;

examining how sexual politics influences district hiring patterns. Through analysis of the

appointment of women and men superintendents in the California public K-12 system

from 2000 to 2008, it examines whether women are winning the competition for the

superintendency. This study defines women winning the superintendent competition as

reaching equal percentage with men superintendents. Equality does not mean shifting

the superintendency from all men to all women because then the superintendency becomes another segregated occupation. Then this study examines some factors that previous women superintendent studies have discussed, such as years of teaching experience, years in the district, educational level, ethnicity, academic performance scores, and district locations to determine how these factors predict the likelihood of women superintendents. It also examines whether the predecessors' sex influences the successors' sex that is whether districts that have hired women superintendents in the past are more likely to hire women superintendents again. Finally, this study examines how the percentage of female district office employees changes when districts hire women superintendents. This percentage change reflects whether women superintendents would sponsor female district office staff in order to support their superintendency.

Study Overview

This dissertation is divided into five chapters. Introducing the study and determining the research questions driving the study are included in Chapter I. Chapter II begins with a review of how superintendents' responsibilities change over time because of social function changes and how different educational policies provide various challenges for superintendents. Then it reviews the literature of women superintendent studies and summarizes the reasons why there are so few women superintendents. Chapter II also reviews sexual politics theory and accountability policy.

Chapter III provides a description of the methodology utilized to conduct this study,

indicating the collection and analysis of the data. Chapter IV provides a summary of the

data and then a detailed account of the findings resulting from testing the hypotheses

of this study. Chapter V includes discussion of the findings, conclusions and

recommendations for practice, aspirants, and further study. A comprehensive reference

list and appendices are attached following Chapter V.

Chapter II Theoretical Framework

Historical Background

In the mid-19th century, Horace Mann and other Common School crusaders transformed Americans' "quest for enlightenment, economic opportunity, moral improvement, and a new kind of citizenship, into support for a particular institution, the common school" (Tyack & Hansot, 1982, p. 28). The common schools started to formalize American education organizations with teacher training through normal schools, longer school days, and more structured school management (Blount, 1998; Perlmann & Margo, 2001; Rury, 1991; Tolley & Nash, 2002; Tyack & Hansot, 1982; Tyler, 1985). The common school "is an institution to create and strengthen democratic community as inclusive, equitable, and assimilative. It replaces a loose, inchoate system of local and private education" (Meyer, 2006, p. 56). Common school movements also brought another change into American education organizations, that is, the feminization of teaching (Tyack & Hansot, 1982; Tallerico & Blount, 2004; Blount, 1998). The feminization of teaching, in turn, led to what Strober and Tyack (1980) have described as women teach but men manage; that is to say a career disadvantage for women educators who have faced glass ceiling affects from the mid-20th century to the present. The glass ceiling effect refers to an invisible barrier that prevents women educators from advancing to managerial positions (Padavic & Reskin, 2002). The sexual division of labor arrangement of women teaching and men managing was not conceptualized as an

inequality in the late 19th century. The feminization of teaching was initially hailed as a means for women to work outside their homes; it also encouraged women's intellectual growth (Nash, 2005; Tolley & Nash, 2002).

As the school organization structure was changing because of changes in the external social environment, school administrators, including the newly created city and district superintendants, were hired to perform specialized tasks (Blount, 1998; Hanson, 2003; Tyack & Hansot, 1980). As Blount (1998) has described, this sex-role specialization in the education workforce was influenced by several cultural phenomena. First, after the Civil War, military veterans served as superintendents and operated schools as military organizations in order to recreate the model of efficiency they had experienced in the military. Second, women were well trained as teachers but their training did not enable them to be appointed as school leaders (Blount, 1998, pp. 48-53; Shakeshaft, 1999). The sex-role specialization of women teachers and men managers should not be seen as indicating that one sex is better than the other but a historical arrangement to insure the best qualified candidates would be selected for each position within an increasingly specialized school system.

Another theoretical perspective which may help us interpret the historical arrangement of employment in schools is Durkheim's notion of the division of labor. Durkheim (1985) does not directly address teaching or gender structure in *The Division of Labor.* Rather, his discussion concerns the division of labor as individuals "in sufficient

contact to be able to act and react upon one another" (Durkheim, 1987, p. 50). The growth of the population, the development and the creation of cities, as well as the increase of communication and transportation methods, are "the results of struggle for existence" (Durkheim, 1985, p. 51) and affect the structure of the division of labor. Extending from Durkheim, the evolution of the sexual structure of educational organizations reflects the changing and renegotiation of social contracts between men and women over the period from the 19th century to the 21st century.

Nevertheless, even in the early 20th century there were women educators who, in the terms we have just been using, successfully renegotiated their individual social contracts to enter the superintendent position, such as the famous Ella Flagg Young of Chicago and Susan Miller Dorsey of Los Angeles (McGregor, 1953; Webb & McCarthy, 1998). "[By] 1930, women accounted for nearly 28 percent of county superintendents and 11 percent of all superintendents nationwide" (Blount, 1998, p. 61). Changing education goals benefit women's successful renegotiation of the social contract by entering the superintendency. According to March (1978), "[e]ducation organizations are organized anarchies. The term is used to describe organizations in which technologies are unclear, goals ambiguous, and participation fluid" (p. 223). Labaree (1997) points out that historically, citizens have had competing goals for education: "preparing citizens for a democracy, preparing workers to strengthen the economy, and preparing individuals to compete for social positions" (p. 39). The competition between public goods and private goods was already apparent in the education system of the

19th and 20th centuries and has carried over into the 21st century (Spring, 2005). The common school system was pursued, in part, to create a sense of patriotism in immigrants, but then with the changing social structure of the Industrial Revolution, the goal of education became to partake in the efficiency model of factories and produce future workers. Hence, the shifting education goals created different demands on participants and different standards with which to judge who can perform tasks to achieve the "desired ends" (Scott, 2003, p. 22).

The variety of functions that superintendents have been expected to fulfill represent these ever-changing educational goals and shifting "desired ends" envisioned for the American public school education. As educational policies have increasingly emphasized accountability, the political function of a superintendent has likewise grown significantly. The job of the 21st century superintendent demands long workdays; certain job descriptions of a superintendent can include teaching and learning, human resources management, budget, transportation, facilities maintenance, building construction, as well as demands that he or she comply to or implement local, state and federal regulations (Carter & Cunningham, 1997; Hoyle et al., 2005; Cooper & Fusariselli, 2002, Bjórk et al., 2005; Glass et al., 2000; Glass & Franceschini, 2007). All these responsibilities necessitate working closely with staff, the school board and outreach to the community. The position itself requires any superintendent to work as a politician because of increasingly differing expectations for schooling, and thus "as individuals and groups engage policymakers to support their interests, conflict is inevitable. District

leaders, including school board members, need to understand that politics is ultimately a process through which individuals and groups can reconcile their interests" (Keedy & Bjᴣrk, 2002, p. 123). "The superintendency has always been dominated by men," (Glass and Franceschini, 2007, p.5) as have other political positions, such as governor or congressional representative; therefore, as the role of current superintendents becomes more like that of politicians it reinforces the stereotype that men lead while women compete to gain access to leadership/political positions.

Research on the Characteristics of Women Superintendents

Grogan and Shakeshaft (2011) found that in the 2007-08 Schools and Staff Survey by the U.S. Department of Education, for both elementary and secondary public schools, women constitute 75.9% of teachers and 50.3% of principals (Table 2.1, p. 28). The authors argue that the teacher position is the beginning of the career path towards becoming a superintendent. Given the large representation of women teachers, the authors find that women educators were under represented in superintendent positions. The following summarizes research on women superintendents that offers some explanation for why there are so few of them.

Mobility

Cooper et al. (2000) designed a national survey study of a randomly selected sample of 1,719 school superintendents. These superintendents were "most attracted to the type of district in which they currently work, with 92.9 percent indicating they

would like to work in a district 'similar to the one where they now work'" (p. 18). Cooper et al. (2000) found that of the superintendent sample, suburban districts were the most attractive, followed by rural districts. Inner-city districts were the least attractive overall, "with 81.7 percent of respondents indicating 'Low or No' attraction to them" (p. 18). Large urban districts had "only 31 percent of respondents finding them moderately or highly attractive" (p. 19). The authors found that both women and men superintendents of their sample preferred suburban districts over the inner-city, rural, and large/urban districts (p. 25).

Studies suggest aspiring women superintendents may be less willing to relocate for this top level position as a result of the impact it may have on their children or spouse's career (Dana & Bourisaw, 2006; Ortiz, 1982; Brunner, 1999; Tallerico, 2000). The lack of mobility in combination with duties as wife and mother continue to be bigger barriers for women than for men (Dana & Bourisaw, 2006). For those who do move to take up the superintendent position, it can often be a burden. A study has reported that commuter marriages have become more common with 20% of female superintendents reporting this change in their lifestyle in order to assume the position (Grogan & Brunner, 2005). One of the women superintendents that Dana & Bourisaw (2006) interviewed described the job as migrant work, packing up every few years to move to a distant community and going through the resettlement process all over again.

More Years of Work Experience

It is argued in the women superintendent studies those women candidates may not have certain types of skills, such as lack of training in school finance, facilities and management because of their years spent in teaching. Fusarelli et al. (2000) define the special skill sets that superintendents possess and those that school boards require: building construction/bond Issues, human relations, labor relations, race relations, curriculum design, staff development, community relations, finance/budgeting, and technology. The lack of financial and other administrative related experience is associated with woman superintendent candidates possibly because they are likely to spend more time in classrooms teaching before entering school administrations. The conclusion from Ortiz (1982) and Tallerico (2000) is that among the women superintendents they have interviewed, these superintendents tend to have more teaching experience (average of 15 years) in comparison to men superintendent candidates (average of 5 years). Cooper et al. (2000) found of their national superintendent survey that "female superintendents tended to remain in *classroom teaching* significantly longer (8.99 years) than their male counterparts (6.62 years)...And years in the central office were also significantly different by gender, with men at 15.62 total years and women 12.99 years" (p. 23). The findings from Cooper et al. (2000) showed, of their sample, women superintendents spend more years in the classroom than men, while men superintendents have more administrative experience gained through spending more years at the central office.

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Dana & Bourisaw (2006) suggest that women educators who apply to administrative positions "tend to be older than males...They also have more years of service in education than their male counterparts" (p. 109). "Female [superintendent] candidates spend half or more of their professional career in the classroom, usually ten to fifteen years" (Dana & Bourisaw, 2006, p. 111). The American Association of School Administrators (AASA) began to publish studies about the work conditions for superintendents every 10 years in 1923. "In the 2000 study, 60% of women superintendents indicated they had spent at least 10 years in classroom teaching. Past 10-year studies show male superintendents spending 5 years in the classroom" (Glass & Franceschini, 2007, p. 16). Some studies suggest that the result of women superintendent candidates spending longer years in the classroom can be interpreted as leading to women not having enough exposure to administrative experience which puts them at a disadvantage compared to male superintendent candidates; hence, women superintendent candidates are less likely to receive the school board's offer. Some studies showed among their sample population, even if women superintendent candidates have the same level of administrative experience as their male competitors, because of the extra years they spend in the classroom, they may find themselves too old compared to men superintendent candidates who apply to the same position; this too limits their chances of being hired (Dana & Bourisaw, 2006; Glass & Franceschini, 2007; Tallerico, 2000).

Educational Level

In terms of educational levels for women superintendents, recent studies found that women superintendents tend to have more advanced degrees than men superintendents (Brunner & Grogan, 2007; Dana & Bourisaw, 2006; Glass et al., 2000; Glass & Franceschini, 2007; Grogan & Shakeshaft, 2011). The advanced degree can help women superintendent candidates compete for opportunities to enter the occupation. Glass (1997) suggests that "possession of a doctoral degree appears to have been an important factor in the entry of women and minorities to the superintendency...The possession of a doctorate is consistent with an emerging trend for boards of education to seek superintendents who are expert instructional leaders" (p. 26). Glass (2000) found that among the national sample, women were also found to be more highly educated with 52% of female superintendents holding doctoral degrees in comparison to only 41% of men. In Glass & Franceschini (2007), the authors found that the 2006 national sample "shows 58% of women superintendents possessing a doctoral degree. In the past three AASA studies, higher percentages of women superintendents held a doctoral degree than their male counterparts" (p. 41).

District Size

Existing research indicates that men and women superintendents are located in districts of different sizes. Cooper et al. (2000) found in their sample, that 22.7% of women superintendents were located in large districts. Glass & Franceschini (2007)

state the trend of where women superintendents are located since 1992. In the 1992 10-year study, "female superintendents tended to be clustered in smaller districts (Glass, 1992). This new trend may be due to a greater number of experienced female central office administrators stepping into larger districts. It may also be attributable to school boards being more willing to hire female superintendents" (Glass & Franceschini, 2007, p. 17). In the most recent AASA study by Kowalski et al. (2011), of their survey sample, "nearly half the female superintendents (48.7%) identified the location of their employing district as *rural*; in the 2000 study, the figure was 48.5% (Glass, Bjӧrk, & Brunner, 2000)" (p. 86). The sample of the AASA 2010 study showed 52.6% of women superintendents were located at districts with 300 to 2,999 students while 61.4% of men superintendents were found in districts of this size. 33.1% of women superintendents were located in districts with 3,000 to 24,999 students while the figure was 26.6% for men superintendents. 2.6% of women superintendents led districts with 25,000 or more students which compares to 3.2% for men (Kowalski et al., 2011, Table 7.1, p. 86).

In the Tallerico & Burstyn (1996) study, the women superintendents they interviewed who worked at both small and large districts described working at small districts as having to "do it all by yourself" (p. 650) with limited resources, administrative staff, peer support, and lack of staff professional development. On the contrary, in large districts, superintendents can delegate tasks to various assistant

superintendents or administrative staff instead of bearing all the responsibilities

themselves. Glass & Franceschini (2007) state,

> [the] 1950 10-year study found 6.7% of superintendents to be female
> and mostly serving small rural districts. By the time of the 2000 study,
> 16.7% of superintendents were female with many still serving small
> districts. The 2006 study finds 21.7% of responding superintendents to
> be female. The distribution of female superintendents according to
> district size is more evenly balanced than in past studies. In a listing of
> urban superintendents since 1990 a noteworthy number of these
> positions have been or are currently held by females (p. 61, 63).

In some small and rural districts, superintendents have certain teaching

responsibilities in addition to administrative responsibilities while in larger, urban

districts superintendents mainly focus on administrative services (Bjᵒrk & Kowalski,

2005; Glass & Franceschini, 2007).

California's Accountability Policy Overview--Related to the use of API scores

In 1999, the California legislature passed the Public Schools Accountability Act

(PSAA) of 1999 (PSAA, 1999). This act consisted of three components: a) the state

Academic Performance Index, known as the API. b) The Immediate

Intervention/Underperforming School Program. c) The Governor's High

Achieving/Improving Schools Program. The PSAA focus on student achievement requires

school principals and district leaders to maintain annual improvement in students'

learning or undergo public scrutiny. Students' performance is measured by test results

from standardized tests and reporting (STAR) programs and California High School Exit

Examination (CHSEE) as well as other indicators (PSAA Team of CDE, 2010) in the spring

of each year. The scores are calculated and weighted differently each year by the California Department of Education. The score is the school's Academic Performance Index (API), a single number on a scale of 200 to 1000 that indicates how well a school performed the previous year, based on several standardized tests in the subjects of reading, math, and English Language Art. An API is calculated for the whole school and each of its "numerically significant subgroups," including socioeconomically disadvantaged students, English learners, and students with disabilities. API scores are used to rank schools statewide, compare schools with similar demographics, and determine eligibility for the state's award and intervention programs. California State requires that schools meet the API target of 800 or face sanction. A school with base API of 800 must maintain it's API of at least 800. Schools identified as low performance schools participate in the state's low performing schools program on the basis of their state rank, not their similar school rank (PSAA team of CDE, 2010; Mintrop & Trujillo, 2007).

API is California's main measure of school performance and according to Powers (2004), API reinforces the unequal conditions that were presented in Williams v. State of California: qualified teachers, current textbooks, and adequate and safe facilities. Williams v. State of California was a class action lawsuit on behalf of California's public school students which was filed in state court in May 2000 to make the state address inequalities in its public schools (Powers, 2004). The pattern of socioeconomic class differences created different educational outcomes for public school students, such as

less effective teachers for poor districts or higher rates of parents volunteering in their

children's schools in high socioeconomic school districts (Houchschild, 2003; Lareau,

2000). Inequality of socioeconomic class leads to unbalanced resources for districts.

That is, wealthy districts are more likely to have better qualified teachers than poor

districts (Houchschild, 2003; Powers, 2004) and therefore, district locations lead to

different outcome for the API scores. According to the previous section's review that

women superintendents were more likely to be found in rural districts, and given by

what Houchschild (2003) and Powers (2004) have studied, then it is likely to suggest

rural districts are low performing school districts.

Sexual Politics Theory

Sexual politics theory has developed in the last five decades to account for the

relative political success of men and women as they compete for access to positions of

power and influence. Newton (2006) focuses on the heightening of superintendents'

roles as political leaders because of increasingly diverse communities, legislative

challenges, less funding due to economic difficulties, and "challenges to conventional

authority" (p. 558). Superintendents not only negotiate with political groups but also

assure local communities of their concerns about educational issues. The author

suggests that neither women nor men educators agree that "the notion of mixing

politics and education is [tasteful];" nevertheless, "men are most often associated with

the [political] role" (p. 559). The author further states "responsibility of political

leadership most often falls to the superintendent who is most often male" (p. 559) in some large public school districts.

In the discussion of sexual politics theory in Collins et al. (1993), the authors traced the notion back to kinship and agrarian-patrimonial societies that use sex as an exchange item to make not only social ties but also political alliances in order to "determine the inheritance of economic property" (p. 199). The sexual alliance politics determine the connection with the ruling class but is not so strict of servant class women because the servant class lacks status. "The honor of a family is tied to the sexual purity of its women, and violations of sexual property are violently punished. Women of the peasant and servant classes are much less restricted because of their work and their corresponding lack of status honor" (p. 199). When kinship and agrarian-patrimonial societies evolved to bureaucratic industrial societies, the sexual alliance politics diminishes but male specialization of viewing women as objects or passive still continues. The authors suggest when women try to break into a masculine organization or specialization, "others mobilize against them for violating the cultural ideal" (Collins et al., 1993, p. 202). In sum, these authors discuss sexual politics theory as reflecting sexualized organizational structures grounded in the distribution of political power resources and the conflict between men and women for limited access to power and civil rights.

Rapid changes in the society of the 19th and early 20th centuries influenced the conception of masculinity for middle-class men. Men's strength and authority over both women and the lower class constituted the masculine image of power constructed in the 19th century. Men not only had to build "muscle, through repetitive exercises of control over impulse" but also fulfill "the duty, to protect and direct those weaker than himself: his wife, his children, or his employees" (Bederman, 1995, pp. 11-12). Kimmel (1996) discusses how both the Industrial Revolution and Taylor's "scientific management" changed the traditional environment of men at work in the beginning of the 20th century. Men not only lost control over their work schedules but also their status at work due to newly created manager and supervisor positions. Immigration and women's suffrage movements also influenced men's power to control society, workplaces, education, and economic resources (Bederman, 1995; Glenn, 2002). Bederman (1995) emphasizes that "partisan politics were seen as a proving ground for male identity. Political campaigns were male rituals celebrating participants' identities both as party members and as men. At the same time, electoral politics dramatized and reinforced men's connection, as men, to the very real power of the government. Men objected so strenuously to woman suffrage precisely because male power and male identity were both so central to 19th century electoral politics" (p. 13).

Since 1941, the federal governments have published bills to ensure equality employment for race, color or national origin. The Equal Pay Act of 1963 was the first bill to address equal work and equal pay for both men and women to prevent sex-based

wage discrimination. The Civil Rights Act of 1964 prohibits discrimination of employment based on race, sex, color, religion, and national origin. This Act also created the U.S. Equal Employment Opportunity Commission (EEOC), to eliminate unlawful employment discrimination. These Acts and bills help women to start to gain opportunities to enter occupations that used to dominate by men. Blount (1998) notes that while these Acts have helped women to win sex-discrimination lawsuits "against some school systems and educational organizations, women still have not come close to attaining equitable representation in school administration the way it is now structured" (p. 145). Women are gaining ground in the superintendent position in California but the race is still on for more opportunities for women to reach this position.

In more recent examinations of the superintendency and local district politics, several studies have argued that the political structure and conflicts of the local communities are significant factors in superintendent selection and retention, regardless of the superintendent candidate's sex (Spring, 2005; Dana & Bourisaw, 2006; Heck & Hallinger, 1999). Philips (2005) does not address public school superintendents; his study of law firms' hiring patterns can help us understand hiring patterns in relation to men and women. Philips (2005) studies law firms and discovers that law firm founders' work experience can be transferred from parent firms to new firms. Hence, if the founders have worked with women or women have been promoted to partner status in the parent firms, then the founders are more likely to treat women lawyers equally as men lawyers. On the contrary, if the founders of new firms have only worked

with women in the associate track or as subordinates, then the founders are not likely to promote women to the partner track.

Another aspect of sexual politics is social networking between members of same sex groups. This networking can increase a group's success in competing for limited access and power in school organizations. This means that we can expect that men administrators are more in favor of mentoring their male protégées. Therefore, when a district has a man as superintendent, we might expect that the percentage of men on staff would increase over time. This is because according to Dana & Bourisaw (2006), men have been successful in networking that "foster their own access to superintendent positions they desire" (p. 195). Women, on the other hand, used "the political and legal systems to fight for some measure of access to power in public schools, at least to the extent that power inheres in positions of school administration; yet women's representation in these positions is still far short of their proportion in the teaching force" (Blount, 1998, p. 51). Ella Flagg Young, who was the first woman superintendent for the Chicago public schools, shows how the politics of women's networks can benefit women superintendents. The conflict between the feminization of teaching and the bureaucratization of education angered "the militance of women teachers, shared by a handful of women administrators like Young" (Tyack & Hansot, 1982, p. 181). Young's success inspired women teachers and women's clubs to advocate for their rights during the suffrage period. Young also advocated for women teachers to lead the education systems of other big cities. Using Young as an example, it is likely to suggest that if

districts have women superintendents, then we should expect to see an increase in the percentage of women district office staff.

Chapter III Methodology-Data Description and Organization

Data Background

This chapter starts by describing how the data used for this study were collected

from public records maintained by the California Department of Education (CDE) and

the National Center for Educational Statistics (NCES). Annual data sets for the years

1999 through 2008 were collected. The CDE data were drawn from the Professional

Assignment Information Form (PAIF) files that are part of the California Basic

Educational Data System (CBEDS). These data are presented in two files, the base PAIF

data set contains a record for each certificated school district employee in the state and

a linked ASSIGN file contains the work assignments for each employee (with up to eight

assignment records per employee). In addition to the electronic PAIF data, State

published California school directories were consulted to cross validate the data.

Also collected from the CDE were annual records for the school level California

Academic Performance Index (API). This file records academic achievement data at the

school level; as described below the schools within each district were pooled to create a

district level average API score. The API file also provides an indicator of parent

education level which was averaged across the district. The API file also provides an

indicator of percentage of students who are participants in the free or reduced price

lunch program.

From the NCES, data found in the annual Common Core of Data (CCD) file were abstracted for each of the ten study years. The CCD provides a complete list of the public school districts and reports on a variety of demographic, location, and program characteristics. After abstracting and organizing the data as described below, a final data set was produced merging PAIF, API with the CCD data; using the CCD framework as a template.

Numbers of Districts

In 2008-09 there were a total of 1,043 public school districts in the NCES-CCD data file for California. This total includes:

58 County Offices of Education,

5 California Youth Authority Sites,

3 State Special Schools,

8 State Board of Education Charter Schools,

2 Statewide Benefit Charters,

550 Elementary School Districts,

84 High School Districts, and

333 Unified School Districts.

The total number varies from year to year as new districts are chartered; districts are reorganized or merged to create unified districts. This study examines only the regular elementary, high school and unified school districts because the other, more specialized

school districts are likely to have dissimilar policies and practices regarding the hiring of superintendents and other staff.

Common Core Data

According to NCES, "The Common Core of Data (CCD) is a program of the U.S. Department of Education's National Center for Education Statistics that annually collects fiscal and non-fiscal data about all public schools, public school districts and state education agencies in the United States" (NCES, 2010). The variables selected from the CCD for use for each of the years in this study are:

District Locale

K-12 Student Enrollment

Free-or-Reduced Price Lunch Program

LEP/ELL Students

There were two years (2006-07/2007-08) of the CCD data that did not have information for the students who are participants in the free or reduced price lunch program. The information for this variable of the missing years then came from the API file.

CBEDS Data

The California Basic Educational Data System (CBEDS) data are collected annually, in early October on a day designated by the CDE as "Information Day," and are usually certified and released in early summer. CBEDS consists of three data sets, a County/District Information Form (CDIF), a School Information Form (SIF), and the

Professional Assignment Information Form (PAIF). The data collected for this study, the

PAIF, is completed by all certificated employees (CDE CBEDS Administrative Manual,

2008, pp. 3-4).

The PAIF provides certificated staff characteristics:

Gender

Ethnicity

Highest Educational Level

Years of Educational Service (for both private and public teaching but not
substitute teaching)

Years in the District

Assignment (for both teaching and non-teaching codes)

Position

Credentials

Microsoft Access 2007© was used for initial data management. Individuals in the

PAIF main file were given the assignment code from the Assign file representing the

largest percentage of their work assignment. The result was a single record for each of

the more than 350,000 certificated district employees with a work assignment

accounting for the largest portion of their work life. For many high school teachers, the

file contained assignment codes for the five to seven classes they teach. Where more

than one of these assignments has the same percentage reported in the Assign file, the

first assignment was retained as representing that employee's work responsibility.

(Since the interest in this study is in the sex and administrative behavior of district

superintendents, missing information regarding classroom teaching assignments is of no particular interest).

Once the largest percentage assignment code was incorporated into the PAIF files, these files were imported to SPSS 17© where all subsequent data processing was performed.

API Data

California's Academic Performance Index (API) stems from California's Public Schools Accountability Act of 1999 (PSAA, 1999). The API measures the academic performance and growth of schools based on a variety of tests and establishes a statewide ranking of schools according to those scores. The CDE distributes API data in several forms. Used in this study is the API base score which is scaled to range between 200 and 1,000. This score is described in more detail below. Also published are state rankings (by school type – elementary, middle and high schools), comparison rankings with 100 schools with similar enrollment demographics, and growth targets for the following year.

The API base score is a single number on a scale of 200 to 1,000 that indicates how well students in a school or district performed on the previous spring's tests. In addition to the API calculated for the whole school used in this study, API scores are also available for all "numerically significant subgroups," including socioeconomically disadvantaged students, English language learners, and students with disabilities.

Calculation of schools' API scores involves adjusting the base score each year and then

calculating a "growth" score which indicates how much above or below the base score

the current year's performance has been. The base score has to be recalculated each

year because the state has repeatedly modified both the tests used to measure

academic performance and the weighting assigned to other performance factors (such

as student attendance rates) used in assigning an overall API score. The base scores are

recalculated to adjust for the content of the assessment system and then the growth

score is calculated so that it can be reasonably (if not perfectly) compared with the base

score. The system is on a two-year cycle; a "base" scores for the one year and a

"growth" score in the next year. The Base API, which is usually released in the spring,

comes from the previous spring's test scores. That is the Base API released in spring

2008 reflects the scaled performance of the school when data were collected in the

spring of 2007.

API base scores are published for individual schools. To create a district wide API

base score school level API scores were multiplied by the number of students taking the

test in each school, added across the districts and then divided by the total number of

district test takers. This calculation was applied for all the years of the study period. API

base scores were collected each of the study years, and thus each district has its own

API base scores over the ten years of study. Then, to assess persistent district

performance over time, each district was assigned the average of their API scores over

the ten years of the study period.

A variable summarizing students' reports of their parent educational levels is also found in the API data files. This variable was processed in the same way as the school level API scores to produce a district wide measure of average parent education over the ten year study period.

Data set for This Study

The Common Core Data, the API data files, and the CBEDS' PAIF data files were connected using the district code variable which appears in these three data sets. The following table provides a list of variables that I use from the PAIF, API, and CCD data sets.

Table 3.1. Variable listing

Variable	Variable Label
newsuper9900	New super 9900
newsuper0001	New super 0001
newsuper0102	New super 0102
newsuper0203	New super 0203
newsuper0304	New super 0304
newsuper0405	New super 0405
newsuper0506	New super 0506
newsuper0607	New super 0607
newsuper0708	New super 0708
TURNOVERYR	Year of turnover
SCHOOLS0	Number of schools
API	District API
MEALS	Percent of students in the school lunch program (NSLP)
ELL	Percent of students who are ELL
PARENTALED	Average parent educational level
ENROLLTOTAL	K-12 total student enrollment
dislocale	District locale
educlev	Superintendent's educational level
superethnic	Superintendent's ethnicity

sgender	Superintendent's gender
PRETURNOVERG	Predecessor's gender before turnover
Super_YRD	Superintendent's years in the district
Super_YT	Superintendent's years of educational service
FE_GA_Percent	female general administration percent for yr 0
FE_SS_Percent	female student services percent for yr 0
FE_SE_Percent	female special education percent for yr 0
FE_PA_Percent	female program administration percent for yr 0
FE_AS_Percent	female asst super percent for yr 0
FE_PR_Percent	female principal percent for yr 0
FE_AP_Percent	female asst principal percent for yr 0
FE_PR_Percent1	1st yr female principal percent
FE_PR_Percent2	2nd yr female principal percent
FE_AS_Percent1	1st yr female asst super percent
FE_AS_Percent2	2nd yr female asst super percent
FE_AP_Percent1	1st yr female asst principal percent
FE_AP_Percent2	2nd yr female asst principal percent
FE_SE_Percent1	1st yr female special education admin percent
FE_SE_Percent2	2nd yr female special education admin percent
FE_GA_Percent1	1st yr female general admin percent
FE_GA_Percent2	2nd yr female general admin percent
FE_PA_Percent1	1st yr female program admin percent
FE_PA_Percent2	2nd yr female program admin percent
FE_SS_Percent1	1st yr female student services percent
FE_SS_Percent2	2nd yr female student services percent

Determining when Districts Hire new Superintendents

Once district superintendents have been identified by their Assignment codes in each year's PAIF data it becomes possible in most districts to determine when a new superintendent has replaced his/her predecessor. The identification of new superintendent hires preceded in nine steps. First a subset of PAIF records containing only the superintendents (codes 0100 = Superintendent and 0300 =

Superintendent/Principal) was created. Districts were identified using the first seven digits of the State's 14 digit County, District, School coding system. Usually, superintendents with 0100 codes work at district offices (the last seven digits of the CDS Code are all 0s) while superintendents with 0300 codes have school codes (the last seven digits of the CDS Code are not 0s) which means they work at school sites. If a district has both 0100 and 0300 codes, then I used a downloadable Public School Database file (Educational Demographic Office of CDE, 2011) to verify the 0300 codes for each of the cases. Public School Database file confirms that these districts have listed both charter school district and traditional unified school district. Then the charter school superintendents/principals with 0300 codes were not included in the final data table.

In order to determine whether there is a new superintendent hired in any given year, two contiguous single year PAIF files were merged together to examine whether the occupant of that office had changed in demographic or experience characteristics that indicate a different person had taken over the office. The public files released by CDE have no staff names or birthdates, but it was discovered that other indicators can reliably predict superintendent turnover. As the files were merged, significant numbers of missing cases were found, leaving some districts without a clear record as to whether the superintendent in one year was still in office the next year (Listed in Table 3.2 below). A substantial number of missing cases were resolved using printed copies of the *California School Directory* (CDE, 1999-2008).

The *California School Directory* lists contact information for districts and schools, CDS codes, student enrollment numbers, and names of superintendents. To locate information for missing cases, the CDS code from the PAIF data was used to find the districts in the *California School Directory*. If the same superintendent was named in years prior to, and following, the missing data point, it was assumed that the missing case did not involve a turnover. Where continuity was established, district reported superintendent data (sex, ethnicity, educational level, years of teaching, years in district, fully credential, and status) found in one year was reproduced for the missing year. Since the *Directory* (CDE, 1999-2008) list only superintendent names without demographic information for the superintendents that can be used for this study, the PAIF data is required to monitor superintendent personal and professional information. The *Directory* (CDE, 1999-2008) has not been published every school year, making missing case confirmation impossible in a few cases. Since the PAIF and Directory data are only compiled on an annual basis, districts with very rapid superintendent turnover may have had one or more superintendents whose time in office is unrecorded. Table 3.2 reports the number of missing cases each year, before and after using the published *Directory* to fill in cases missing in the PAIF.

Table 3.2. Number of Districts not Reporting Superintendent Data Each Year

PAIF Years	Missing Cases Count Before Using *Directory*	Missing Cases Count After Using *Directory*	Total N
1999-2000	68	18	899
2000-2001	49	13	895
2001-2002	42	7	895
2002-2003	61	15	892
2003-2004	37	8	899
2004-2005	53	8	885
2005-2006	95	24	895
2006-2007	66	21	883
2007-2008	77	38	881

Once missing cases information was located, two new variables were calculated: a superintendent personal identification (Personal ID) number and a superintendent professional identification (Professional ID) number. Superintendent personal identification number is a variable consisting of sex, ethnicity, years of teaching, and years in the district; superintendent professional identification number is a variable combining employment contract status, fully credentialed status, and educational level. The formulas for the superintendents' personal and professional identifiers are calculated as follows:

Personal ID = sex × 100,000 + ethnicity × 10,000 + years of teaching × 1000 + years in the district

Professional ID = status × 100 + fully credential × 10 + educational level

The formulas are designed to generate a unique number that preserves information for each. These unique identifiers can then be used to monitor whether a new superintendent has taken office. If a district has a continuing superintendent, then there should be a one year increase in educational service and in district service, while other variables stay the same. If a superintendent is new to a district, then it is expected that his/her Personal ID and/or Professional ID would change in ways other than incrementing the two service years variables.

An example may help to clarify interpretation of the Personal and Professional ID comparisons. Comparing ID numbers for any two consecutive years produces the following options (coded into a new variable labeled New Supt). Interpretation is done in nine steps:

Step 1. Subtract from the Personal ID in the target year the Personal ID from the previous year.

Step 2. Subtract from the Professional ID for the target year the Professional ID for the previous year.

Step 3. If the Personal ID difference is 101 (indicating one additional year of service in the profession and in the district), **and** the Professional ID difference is zero (indicating no change in contract status, credential status and education level), then conclude that there is no change in superintendent. Code the New Supt variable for that year to 1 = Not New.

Step 4. If the Personal ID difference is 202 or 303 **and** the professional ID

difference is zero, code the superintendent as Not New (1) because review of directory

data confirms that these differences are most often the result of early corrections in

district reported data, rather than replacement of the superintendent with a slightly

more experienced district insider.

Step 5. In the Personal ID is 101, **and** the Professional ID is greater than zero,

code the superintendent as Not New (1) because the Professional ID differences are

most likely to indicate improvement in education or employment status.

Step 6. If the Personal ID is not equal to 101 **and** the Professional ID is not equal

to zero, code the superintendent as Yes New (2).

Step 7. If the Personal ID is greater than 101 **and** the Professional ID is not equal

to zero, code the superintendent as Yes New (2), indicating that a more experienced

individual with different professional status characteristics has been appointed.

Step 8. If the Personal ID is equal to 202 or 303 **and** the Professional ID is not

equal to zero, code the superintendent as New Yes (2) indicating that this is probably a

new individual rather than simply recoding the experience variables.

Step 9. If either year still has a missing Personal ID or Professional ID after

comparing with Directory data, code the superintendent as Missing (3).

Applying these rules to the interpretation of the ID code differences means that whenever a superintendent changes from a man to a woman or a White to a Hispanic, reports a lower education level, or makes any other substantial change in reported status they will be identified as new to the district. When, as in the majority of cases, personal difference = 101, we can confidently say (after checking records with the published directories) that the district has not changed superintendents.

In some cases, superintendents have obtained advanced educational background or change their credential or contract status. These cases are indicated by positive differences in the Professional ID which, when other variables follow the expected pattern do not generally reflect a change of superintendents. However, in the small group of cases where the Professional ID code differences are negative while the Personal ID difference is 101 or 202, the probability is that this person is a new superintendent because a person's education and job status levels are very unlikely to downgrade over time.

The *California School Directory* (CDE, 1999-2008), despite not being published every year, provides two significant benefits to this study. First, it provides the information for the missing superintendent cases enabling inclusion of otherwise missing data points. Second, it validates the calculation formulas used for coding the PAIF data. Every case from the PAIF Personal and Professional ID calculations for each year was checked against names listed in the *California School Directory* (CDE, 1999-

2008). When my calculations show there is a new superintendent for a district, then there are two different names for superintendents listed for that district in the *California School Directory* (CDE, 1999-2008). Where the calculations indicate no superintendent change of the PAIF, then the *Directory* (CDE, 1999-2008) has same name for the two merged years. Therefore, the *California School Directory* validates the calculation formulas. It is important to note that superintendent turnovers appear in the *California School Directory* a year later than in the PAIF; for example, the turnover for PAIF 9900 appears in the *California School Directory* 2000 and *Directory* 2001. This is because the *California School Directory* (CDE, 1999-2008) is published around October of the previous year and the *Directory* is not published every year (for example, October 2000 for 1999-00 school districts listing), but the PAIF is published around June/July of the next year (June 2001 for 2000-01 school districts listing).

After the Determination was Made for Newly Hired Superintendents

Once all the cases of new superintendent appointments were calculated they were selected and aggregated into a new data set that is the final version of the data table used for this study. Table 3.3 lists how many districts had superintendent turnovers over the study period. The years are from 2000 to 2008 because, though the study period starts from 1999, the first identifiable turnovers appear in the year 2000.

Table 3.3. Numbers of Districts' Turnover

Year	Total N
2000	159
2001	176
2002	190
2003	200
2004	181
2005	195
2006	226
2007	182
2008	181

Staff Composition Calculations

Percentage of women staff was calculated from those with the assignment codes

listed in the CBEDS Administrative Manual ranging from 0103 to 0299. The Manual is

published yearly in order to help CBEDS coordinator and school principals to fill out

CBEDS information. The assignment codes do not change but new assignment codes

may be added to the existing file if there is a need for a new position for school districts.

The file is listed with the CBEDS PAIF downloadable data file

(http://www.cde.ca.gov/ds/sd/df/filespaif.asp/). This study hypothesizes that the

turnover of a superintendent influences the district office staff compositions. The four

categories for the district offices follows CDE's list: staff in program administration, staff

in general administration, staff in student services, staff in special education (CDE, 2007,

p. 40). Three assignment codes are separated out from the staff group as individual

variables for the study: assistant superintendent (0102), principal (0301), and assistant

principal (0302). Even though principals and assistant principals physically work at

school sites, they report to district offices often and sometimes to superintendents

directly and regularly (Tallerico and Burstyn, 1996).

Chapter IV Hypotheses, Testing, and Results

As described in Chapters I and II, sexual politics theory is grounded on the assumption that women and men compete for positions of power and prestige, the public school superintendency. It follows from this premise that the sex of a predecessor superintendent will predict a successor's sex because the gender bias in hiring will have been established in the predecessor's employment and would be expected to remain more or less constant within the political system of each school district. Additionally, we can infer from the underlying premise of sexual politics theory that the sex of each superintendent will be reflected in changes in the sexual composition of a school district's administrative staff as political competition leads the superintendents of each sexual group to sponsor and support staff members of the same sex. Moreover, sexual politics theory sees women as generally disadvantaged in the competition for superintendent appointments, leading to the expectation that women superintendents are more likely to be appointed in lower status, poorer school districts located in more challenging environments. Finally, sex-based status and power inequalities will mean that women must compensate for their disadvantages by acquiring more education and longer service records in order to win appointment to the superintendency.

In analyzing the data described in Chapter III, the premises derived from sexual politics theory lead to the following five main hypotheses:

H1: At the point of hiring, women superintendents will have more years of educational service (because they will take longer to win superintendency due to their political disadvantage). This hypothesis has two sub-hypotheses:

H1a: New women superintendents will have more total years in of educational experience as they work longer to gain access to one of these positions, and

H1b: New women superintendents will have more years of experience within the district that hires them (that is they will be locally promoted more slowly).

H2: At the time of their appointment, women superintendents will have significantly higher education levels than men.

H3: Though cultural changes and increasing political sophistication on the part of women will be reflected in some movement toward equal representation of men and women in the superintendency, this hypothesis has three sub-hypotheses:

H3a: Men will continue to receive a significant majority of California superintendent appointments throughout the 1999-2008 periods covered in this study.

H3b: Women will have increasing over the ten years of the study.

H3c: The sex of a successor superintendent will be strongly predicted by the predecessor's sex.

H3d: The sex of a newly hired superintendent will significantly predict changes in the sex composition of district administrators, including: (assistant/associate superintendents, central office administrators, principals/assistant principals, special education administrators.

H4: Women superintendents will be found in school districts that have:

H4a: Less suburban and more rural or urban locales (because suburban districts have higher socio-cultural prestigious).

H4b: Lower levels of parent education (because high parent education is associated with high social prestige).

H4c: Higher levels of student enrollment in the National School Lunch Program (NSLP), (because working with poor children has lower prestige).

H4d: Have lower total enrollments (because superintendent prestige and salary tends to go up with district size).

H4e: Have lower API scores (because higher scoring districts are more politically attractive).

H4f: Have higher proportions of English Language Learners (ELLs) (because work with ELLs is less prestigious).

H5: Once in office, superintendents will appoint more members of their own sex group to positions within school district administration.

Data Summary

Exhibit 4.1

Dependent Variable
- Superintendent's Sex
    - 1 = Male
    - 2 = Female

Independent Variables
- Educational Level
    - 1 = Doctorate
    - 2 = Masters plus 30 hrs or more semester hours
    - 3 = Masters
    - 4 = Bachelors plus 30 hrs, Bachelors, and Less than Bachelors
- Ethnicity
    - 1 = White
    - 2 = Non-White
- Superintendents' Years of Educational Service
- Superintendents' Years in District
- API
- Percent of students in the free or reduced price lunch program
- Percent of students as English Language Learner
- Average of Parental Educational Level
- Students enrollment
- District Locale
    - 1 = Large suburb
    - 2 = Mid/small suburb
    - 3 = Large city
    - 4 = Mid/small city
    - 5 = Distant rural
    - 6 = Fringe/remote rural
    - 7 = Town
    - 8 = Not reported

Exhibit 4.1 above shows the variables that uses for the hypotheses listed above. Each of the hypotheses listed above will first be subjected to a univariate test of the different contexts and characteristics of newly appointed men and women superintendents. These univariate tests will develop a general overview of the relationships between each independent variable and the sex of newly appointed superintendents. Following the univariate tests, logistic regression analysis will be used to generate a multivariate assessment of the ability of school district and superintendent personal characteristics to jointly predict whether women or men win appointment to open superintendent positions.

Analysis begins with an examination of the annual percentages of women superintendents among the newly hired superintendents (Total N=1690). This is followed by reviews. This is followed examination of the sex composition of superintendent's predecessors and the sexual composition of various subgroups of administrative staff in the district. The assessments of differences in superintendent personal characteristics (educational level, years of service, years in district) distinguishing appointments of men and women. These are followed by testing of district characteristics (district size, locale, percent NSLP, percent ELL, and average parent education).

Superintendent's ethnicity was not the focus of this study and before the discussion of the rest of the characteristics; here is a brief discussion of the ethnicity

variable. Among the newly hired superintendents, 85.3% of the women superintendents were white and 14.7% were non-white, *p* =.740. Eighty-four point seven percent of the men superintendents were white and 15.3% were non-white. This means white is the majority ethnic group for both women and men superintendents.

Figure 4.1 Mean Years of Educational Service
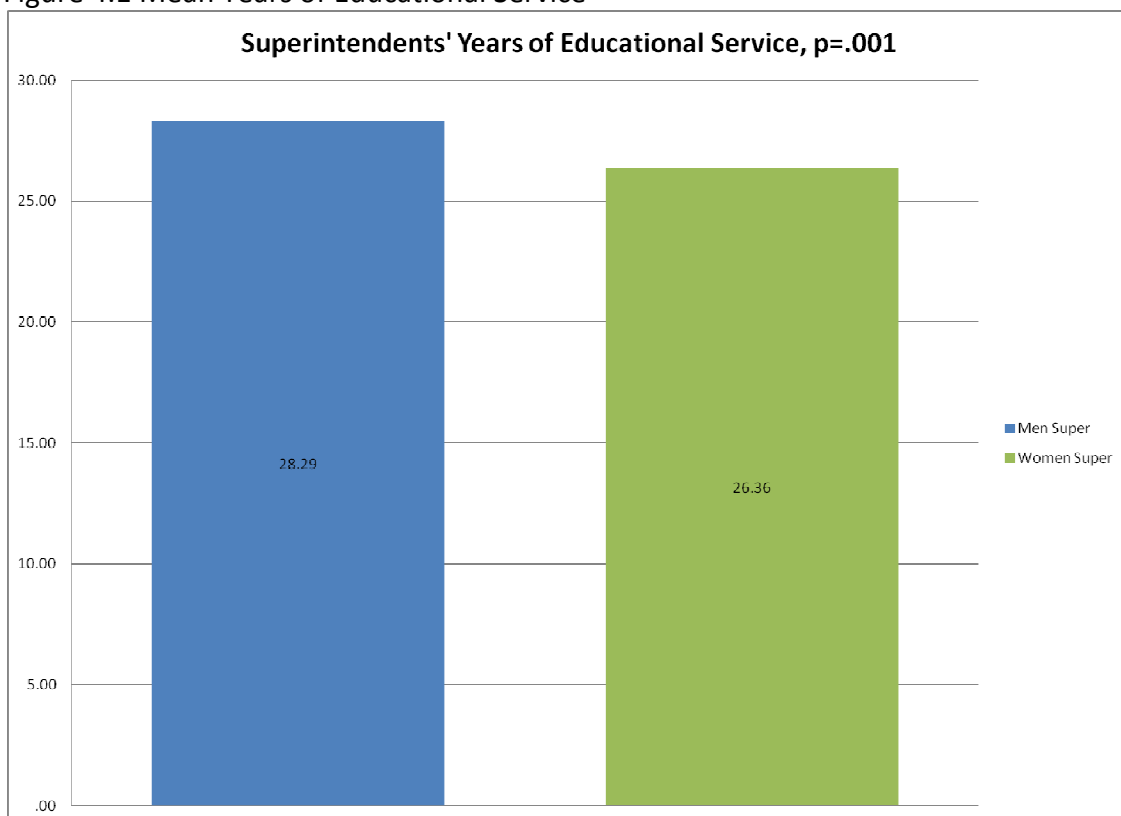
Figure 4.1 shows the result for H1a that newly hired men superintendents have an average of 28.29 years of educational service. By contrast, newly hired women superintendents have an average of just 26.36 years of educational service. This probably means women superintendents have unexpectedly fewer years of educational

service than men, *p* = .001. Since the data do not indicate whether the newly hired

superintendents have served as superintendents in other districts, and do not reveal

whether women move from one superintendency to another more frequently than

men, the difference in service years might be the result of more frequent and later

relocation by men, rather than an earlier entry into the superintendency by women. If,

however, relocations within the superintendency follow similar patterns for both sexes,

this finding challenges prior research findings that women take longer to reach the

superintendency. More research is needed on this question.

Figure 4.2 Mean Years in the District
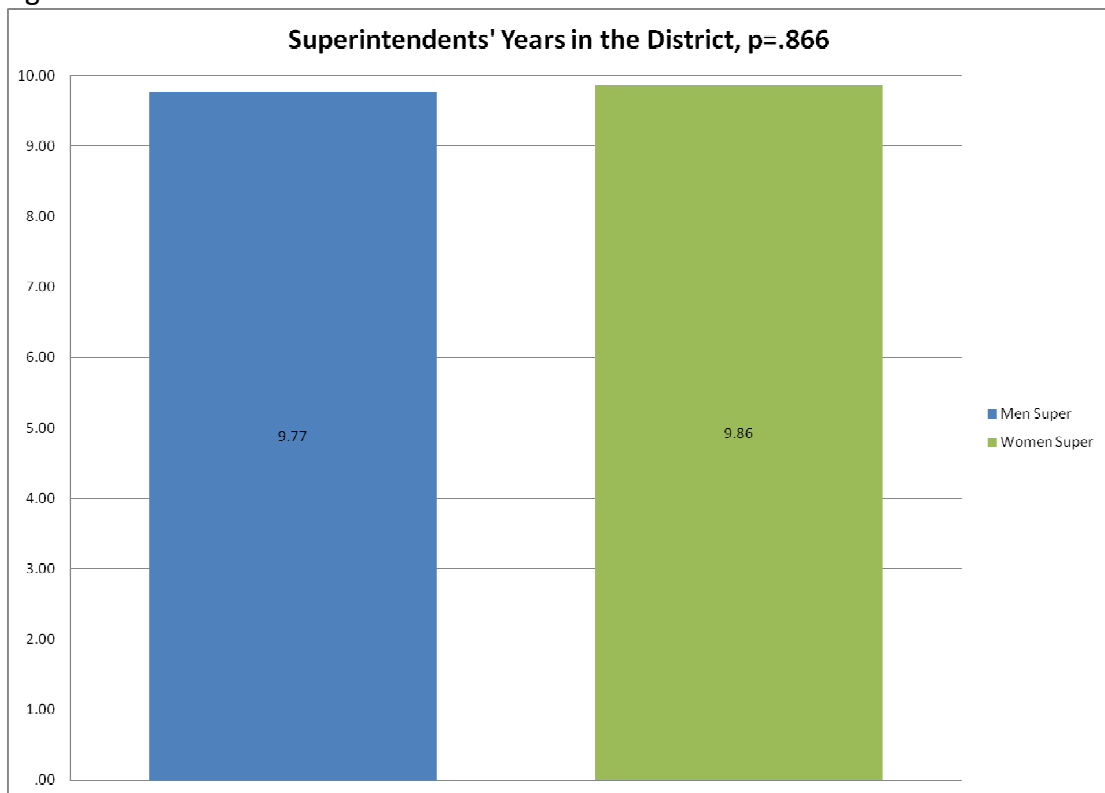
Figure 4.2 shows the results for H1b that newly hired women superintendents spend slightly longer time (9.86 years) within the districts that hire them than do men who average 9.77 years working in the district prior to appointment, p = .866. The numbers for both groups are substantial, however, indicating that school boards like hiring superintendents from among their current staff members. With an average of significantly more than 25 years of total experience before appointment for both sexes, the school boards do apparently expect their superintendents to have experience in more than one school district.

Figure 4.3 Percentages of Newly Hired Superintendents' Educational Level

Hired Superintendents' Education Levels, p=.071

	Doctoral	Masters degree plus 30 or more semester hours	Masters	Bachelors and Less than Bachelors
Women	46.8%	28.4%	19.2%	5.6%
Men	39.9%	33.8%	20.2%	6.1%

Figure 4.3 shows the result for H2 the education levels for newly hired women

and men superintendents, p =.071. As expected, this graph shows that superintendents

tend to have earned advanced degrees before being appointed to this position. Fewer

than 6% of all superintendents in this study had a bachelor's degree or less. The graph

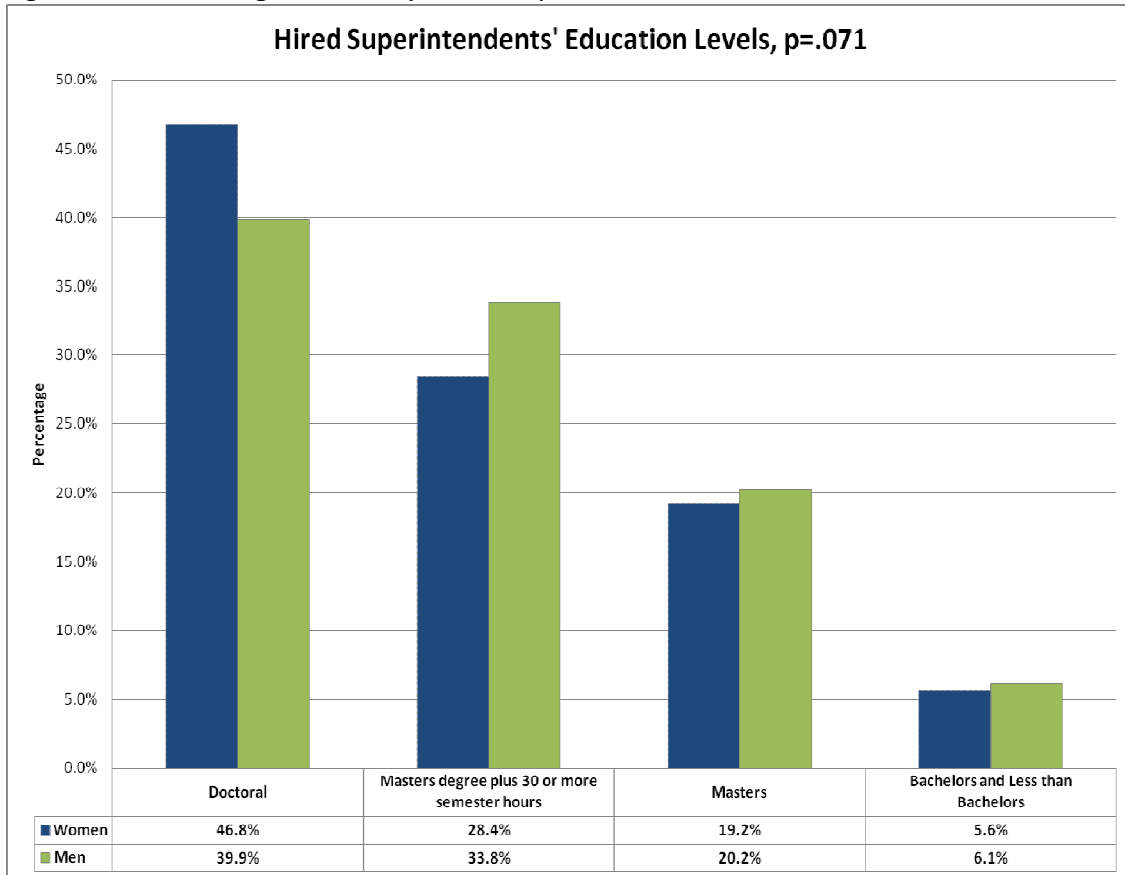also indicates that women, as predicted, tend to have more education than men at the

time of their appointments. Nearly half (46.8%) of women superintendents held the

doctoral degree while only four in ten (39.9%) of the men had doctoral degrees. The

pattern is reversed at the next education level (Masters Degree plus 30 or more hours).

Fewer than three in ten women (28.4%) had master's degrees plus 30 or more semester

hours while 33.8% of men had this level of education. About two in ten new

superintendents (both men and women) hold a masters degree without more advanced

training. This distribution of education levels echoes confirms the findings of previous

women superintendent studies find that more women superintendents hold doctoral

degrees than men superintendents. It is likely, therefore, that possessing more

advanced education credentials is helping women compete for the superintendency. It

is possible, however, that this relationship merely reflects a predilection of women to be

more interested in advanced training and that school boards hiring women

superintendents are getting ones with higher education levels simply because the pool

of women candidates is, on average, better educated.

Figure 4.4 Percentages of Women Superintendents That Were Hired During 2000~2008

Percentage of Districts' Hiring for Women and Men Superintendents, 2000~2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Women Superintendents	17.0%	29.7%	26.3%	24.6%	26.0%	32.0%	31.9%	26.4%	31.7%

$y = 0.0113x + 0.2166$
$R^2 = 0.4099, p=.040$
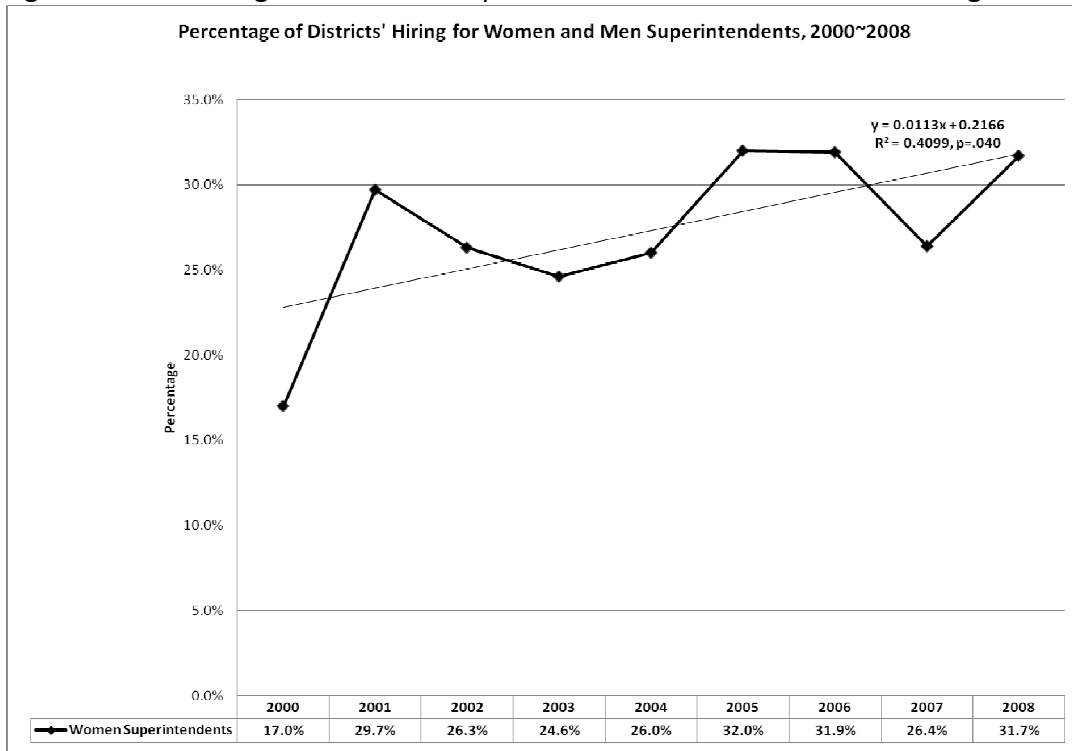
Figure 4.4 plots the results for H3a and H3b that the percentage of newly hired

California superintendents who were women each year during the years 2000 through

2008, p = .040. Three important conclusions are supported by the data plotted here.

First, women have never captured as much as 32% of the newly hired superintendents

in any year (the average over the ten year period is 27.3%). Second, the success of

women is quite varied (while four year to year differences are positive, three year to

year changes show women winning a smaller percentage of the new hires).

Nevertheless, and this is the third point, there is a modest trend line indicating that, on

average, women are securing a little more than one percent more of the open

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superintendent positions each year (with about 170 appointments per year, this means

that women are inching up at about 2 more successful applications per year). Though

the trend line on this graph is not highly significant (p = .040), it is remarkably good at

depicting a long term trend back as far as 1985[1]. In that year women occupied 8.25% of

the superintendence – in 2008 they controlled 31.7% of these positions. This represents

an increase of about 23% over 33 years, approaching nearly one percent per year.

If a district superintendent is a woman then her successor will probably also be a

woman (and vice versa for men).If, as sexual politics theory asserts, women are

competing for access to the superintendency in a "man's world," there should be a

greater willingness to replace one woman with another. That is, if resistance to

appointing women is the result of political bias and not the result of any kind of

performance weakness or an unpredictable or random access to this position, then

when any woman wins the superintendent position and performs adequately in that

role it would be natural for the school district to substantially lower its resistance to

hiring women. Therefore, districts having experienced women superintendents should

be ready to look more favorably on women applicants when the position becomes

vacant one again.

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[1] CDE's CBEDS of 1985

Table 4.1 Superintendent's Sex Before Turnover Predicts Next Superintendent's Sex

Variable	Turnover Women	Turnover Men	Total	χ^2
Before Turnover-Women	393	54	447	
Before Turnover-Men	63	1148	1211	1120 .361*
Total	456	1202	1658	

Note: * $p = .00 < .05$

H3c is easily tested. A simple two-by-two table of predecessor and successor superintendents by their sexual identities will quickly reveal whether the successors' sex is predicted by the predecessors' sex. This cross tabulation is shown in Table 4.1, along with the highly significant Pearson χ^2 assessment of predictive significance. As seen in the table, in fully 393 of 447 cases (88%) one woman was followed by another. The 1,120.36 χ^2 (df=1) for this tabulation has a p-value of essentially zero, indicating that there is no chance that this finding is the result of sampling error.

Among men, the same sex repeated hires is even more reliable. In only 5.2% of the 1,211 cases of replacing men superintendents was the successor a woman. The very slow movement in school districts toward equalizing opportunities for women candidates for the superintendency is suggested by the fact that women were followed by men only 54 times while men were replaced by women 63 times. The difference between these two change rates is well within the confidence interval for equal probability replacement rates, however, and thus should not be seen as reliable.

The Kramer's V for Table 4.1 is .822, confirming that the same gender successions account for well over 80 % of the cases in this study (the actual same sex succession rate is 93% for all superintendent replacements).

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Figure 4.5 Female Assistant Superintendent Percentage
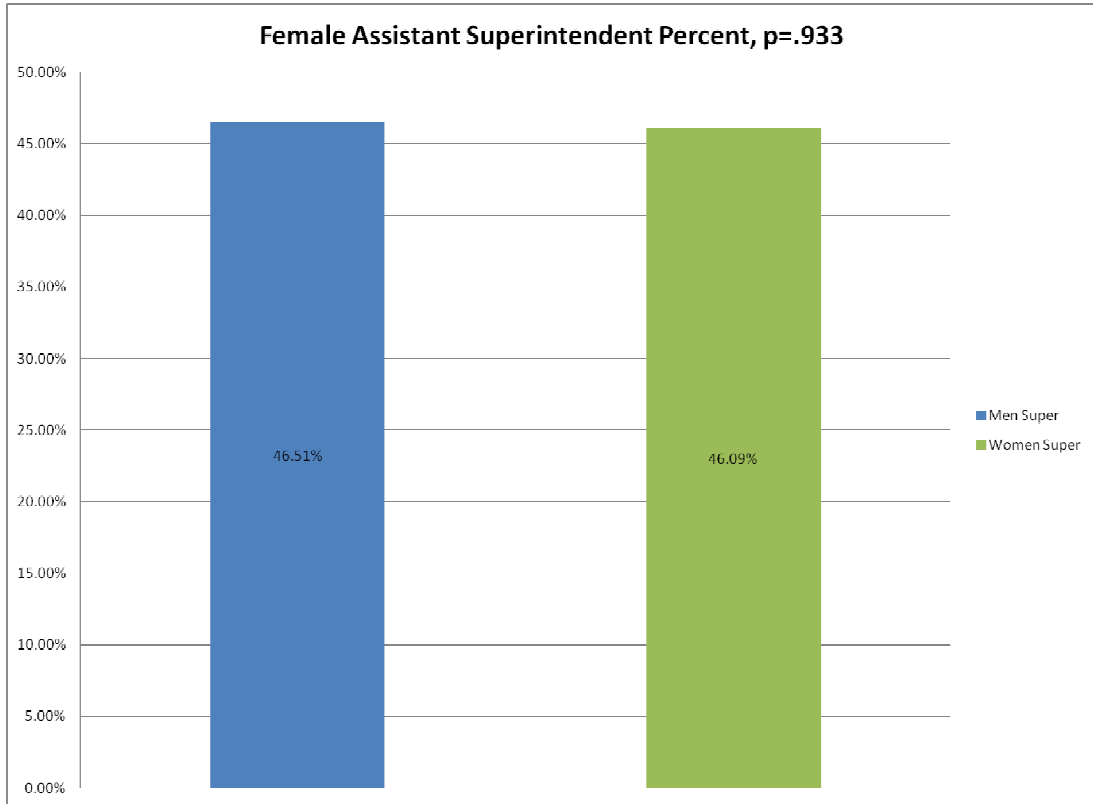
Figure 4.5 through Figure 4.11 displays the results for H3d. For newly hired men superintendents, the mean of percentage of female assistant superintendent is 46.51%. Women were appointed in districts with 46.09% of female assistant superintendents. With a *p* value equals to .933, there is not significant to distinguish superintendent's sex influences the percentage of female assistant superintendent.

Figure 4. 6 Female Principal Percentage
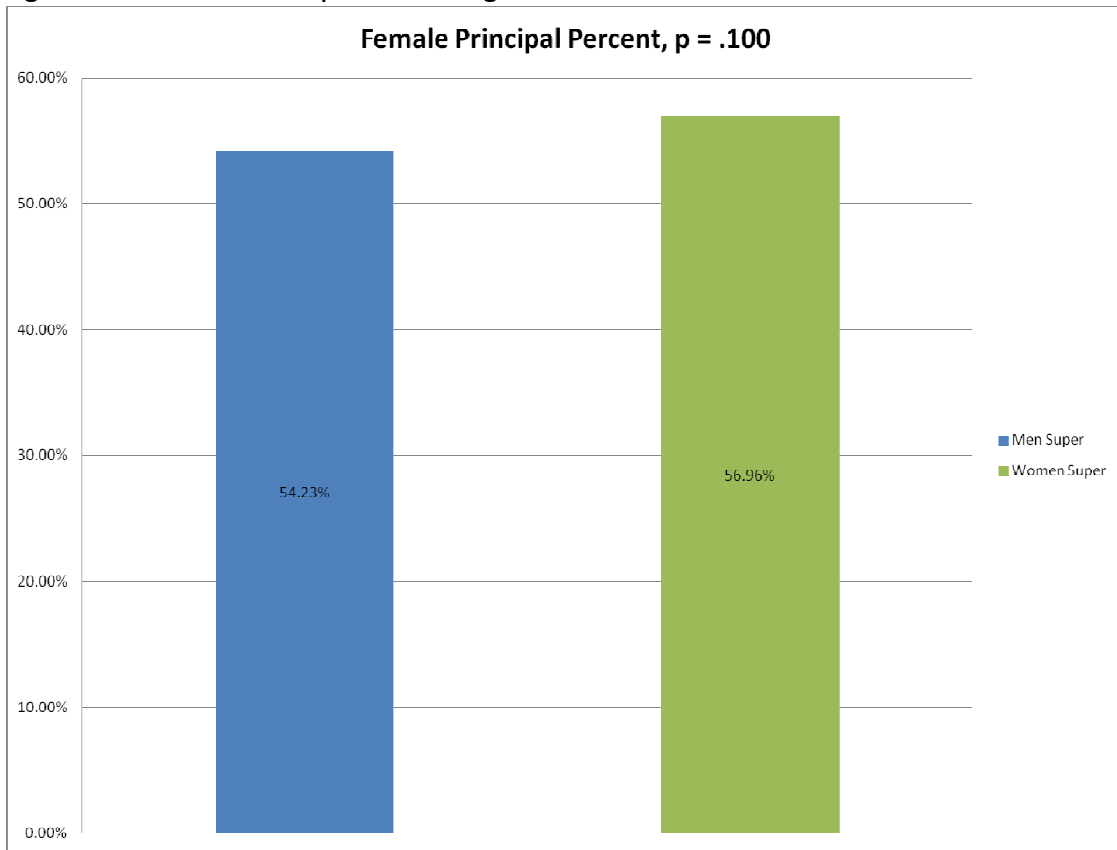
For newly hired men superintendents, the mean of percentage of female principal is 54.23%. Women were appointed in districts with higher percentage of female principal (56.96%). With a *p* value equals to .100 indicates that women superintendents are more likely to be appointed at districts with larger percentage of female principal than men.

Figure 4.7 Female Assistant Principal Percentage
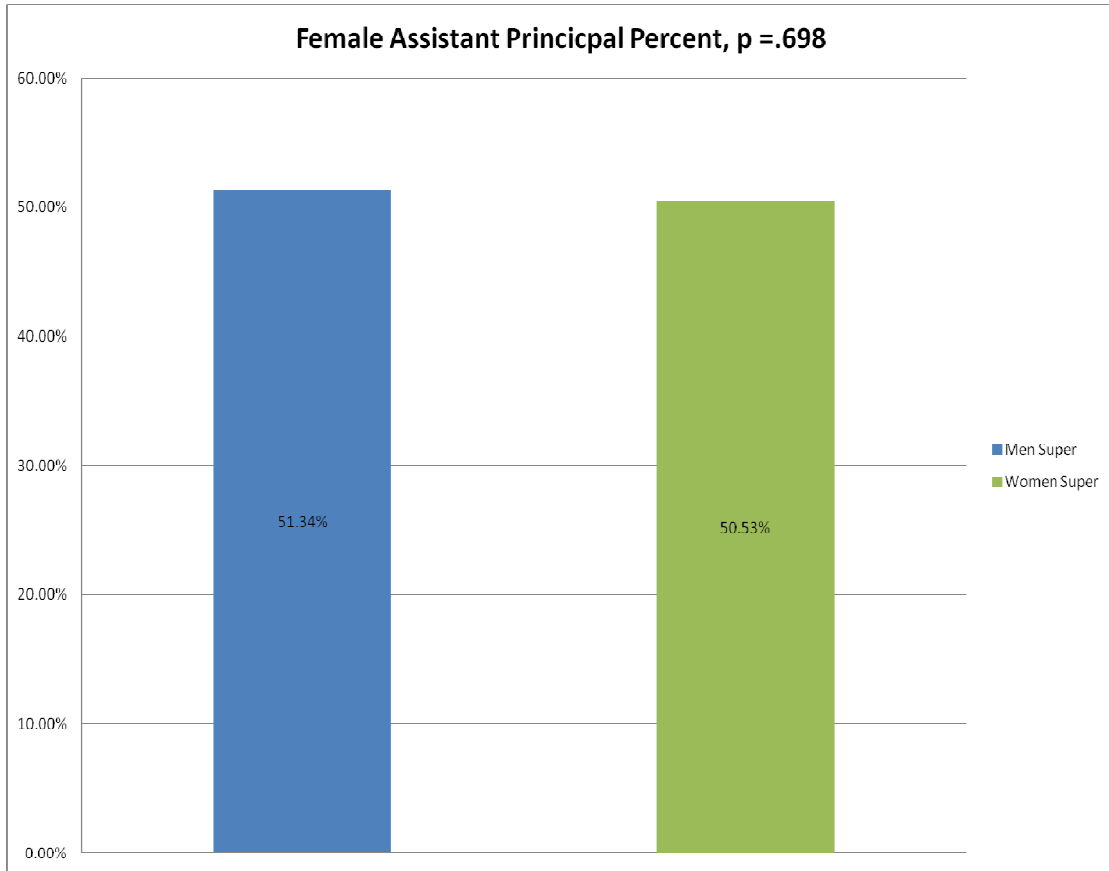
For newly hired men superintendents, the mean of percentage of female assistant principal is 51.34%. Women were appointed in districts with 50.53% of female assistant principal. With a *p* value equals to .698, there is not significant to distinguish superintendent's sex influences the percentage of female assistant principal.

Figure 4.8 Female General Administration Staff Percentages
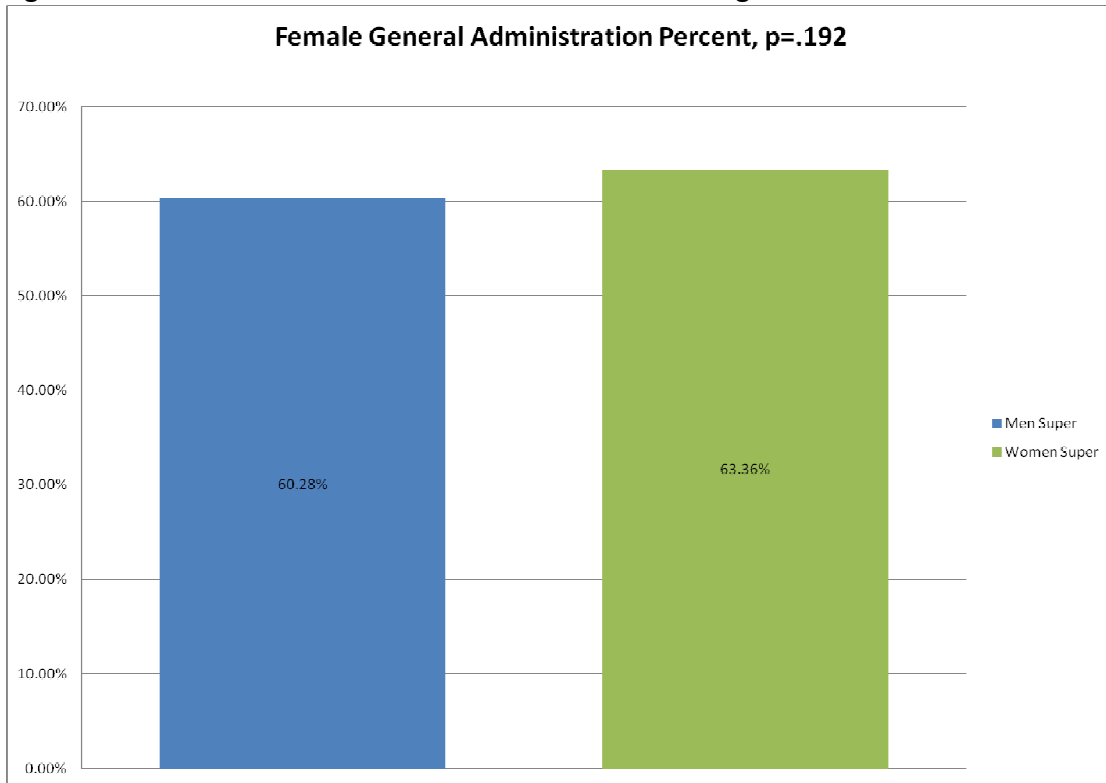
Female General Administration Percent, p=.192

Legend:
- Men Super
- Women Super

Men Super: 60.28%
Women Super: 63.36%

For newly hired men superintendents, the mean of percentage of female general administration staff is 46.51%. Women were appointed in districts with higher percentage of female general administration staff, 63.36%. With a *p* value equals to .192, there is not significant to distinguish superintendent's sex influences the percentage of female general administration staff.

Figure 4.9 Female Program Administration Staff Percentage

For newly hired men superintendents, the mean of percentage of female program administration staff is 67.36%. Women were appointed in districts with 65.48% of female program administration staff. With a *p* value equals to .487, there is not significant to distinguish superintendent's sex influences the percentage of female program administration staff.

Figure 4.10 Female Student Services Staff Percentage

For newly hired men superintendents, the mean of percentage of female student services staff is 79.05%. Women were appointed in districts with 77.49% of female student services staff. With a p value equals to .486, there is not significant to distinguish superintendent's sex influences the percentage of female student services staff.
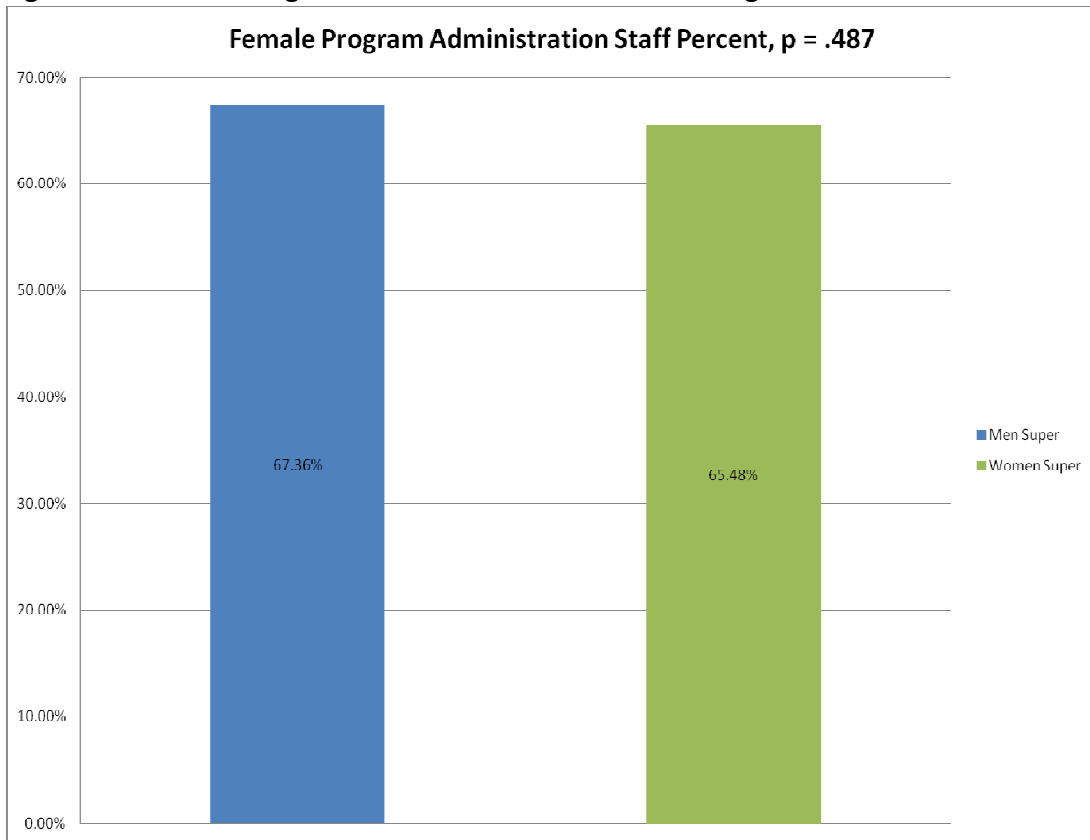
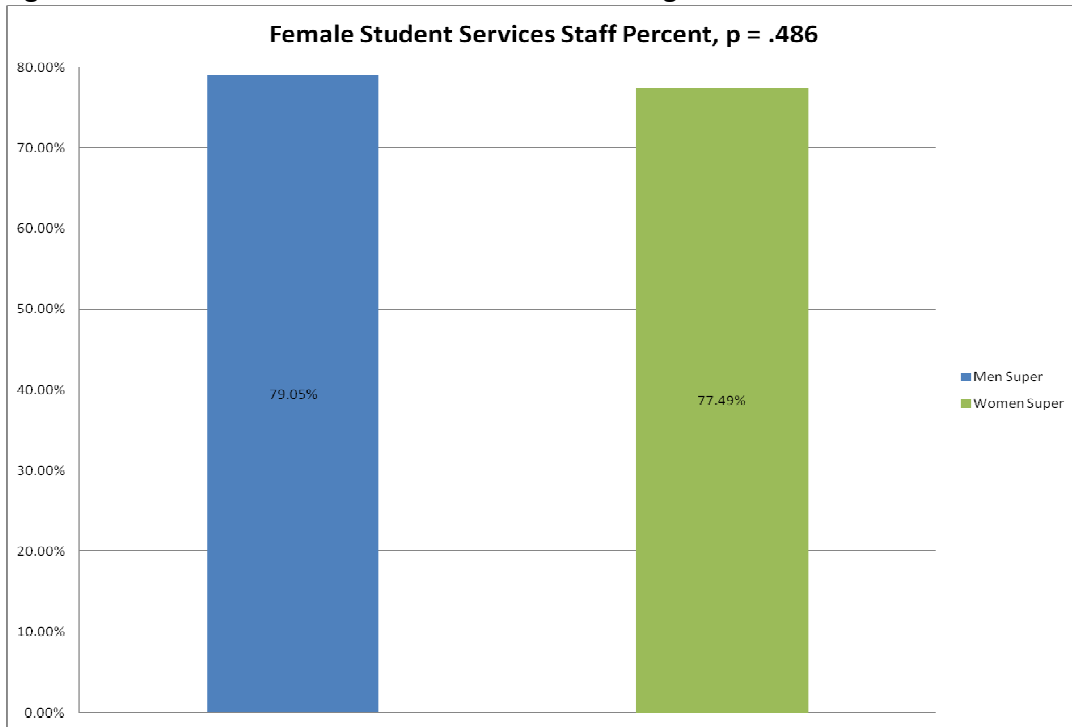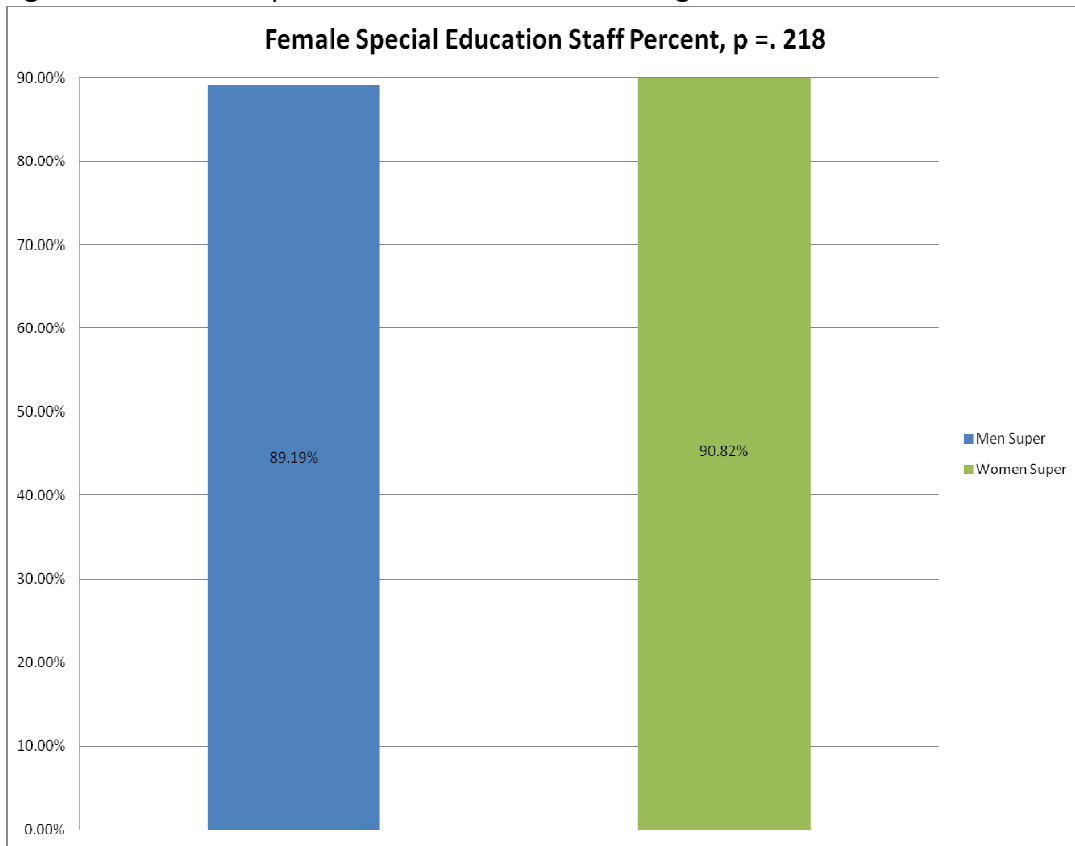Figure 4.11 Female Special Education Staff Percentage

For newly hired men superintendents, the mean of percentage of female special

education staff is 89.19%. Women were appointed in districts with 90.82% of female

special education staff. With a *p* value equals to .218, there is not significant to

distinguish superintendent's sex influences the percentage of female special education

staff.

Figure 4.12 Percentages of Newly Hired Superintendents in Each District Locale
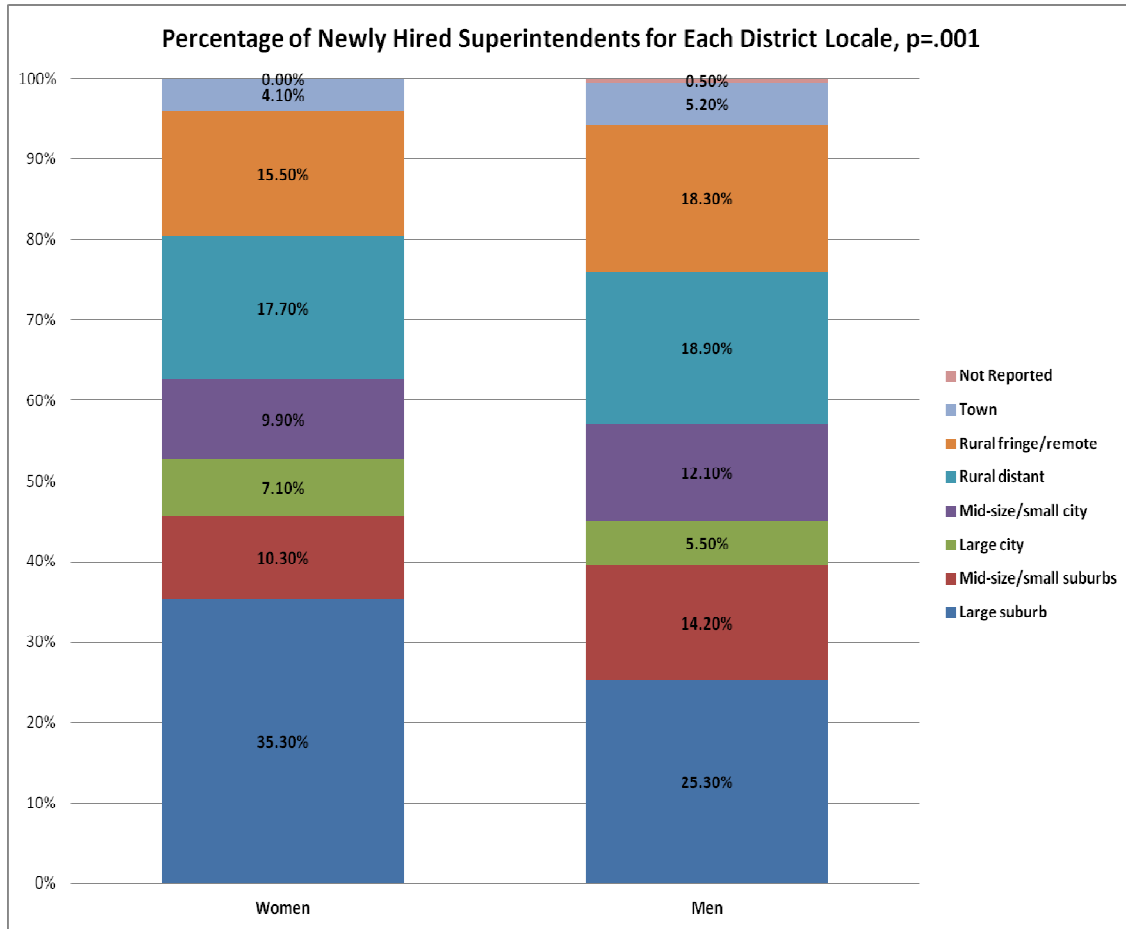
Figure 4.12 is the results for H4a that displays district locations for newly hired women and men superintendents, *p* =.001. As the colored bands in the graph indicate, districts in different urban/suburban/rural locals tend to have different levels of willingness to hire women superintendents. Of course, with about three times as many men as women being appointed each year men actually outnumber women in all of the locales depicted in the graph. Women superintendents are significantly more likely to be hired in districts serving populations living in large suburban areas (35.3% of women

but only 25.3% of men were selected by large suburbs[2]). Although the representation is

more nearly equal, rural and fringe area districts display a significant preference for men

superintendents (18.3% to 15.5%). Men are also more likely to be preferred in mid-size

and smaller suburbs (14.2% to 10.3%).   City districts are divided in their preferences.

Women are slightly more likely to go to the large cities (7.1% to 6.6%). But men tend to

be picked by mid-size and small cities (12.1% to 9.9%). Though the evidence is a bit

mixed, it appears that women are gaining a political foothold in the more prestigious

school district found in large suburbs.

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[2] the definitions for the locales were drawn from the NCES CCD data.

Figure 4.13 Mean of Parent Educational Level of Newly Hired Superintendents
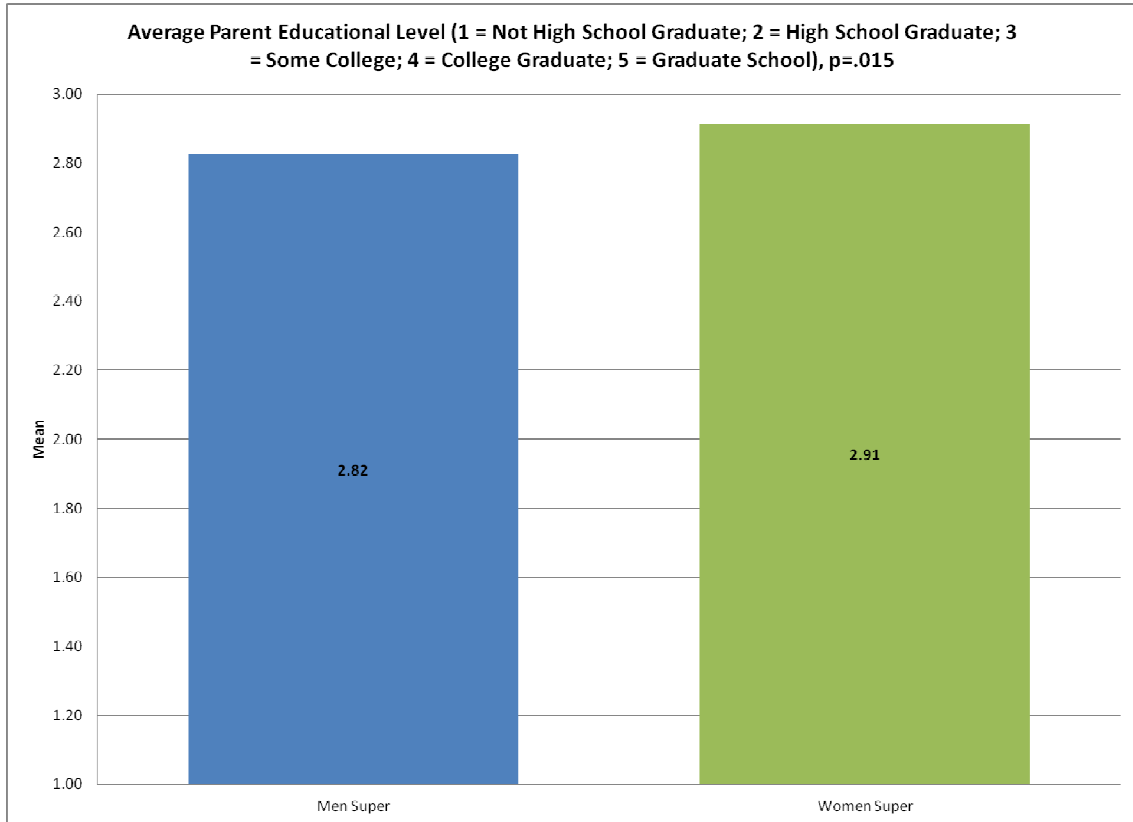
Figure 4.13 shows the means of average parent education level in districts

selecting men and women superintendents for H4b, *p* = .015. Where men are selected,

the average parent educational level (averaged the mean scores for each school in the

district) was 2.82, indicating that the average parent education level is substantially

above high school graduate. The average school mean parent education levels for newly

hired women was 2.91, indicating that women were selected by districts with somewhat

better educated parents. Since higher parent education levels are likely to mean higher

achieving students and greater prestige for the districts and therefore for their

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superintendents, this data runs counter to the oft expressed view that women are

doomed to serve in low prestige school systems because they are at a political

disadvantage. While being outnumbered three to one indicates a potential

disadvantage for women, being selected by school districts that have better educated

parents at the time of a superintendent's appointment does not reinforce this notion of

differential political advantage.

Figure 4. 14 Mean of the Percentages of NSLP for Newly Hired Superintendents

Figure 4.14 shows the results for H4c that for newly hired men superintendents,

the mean of percentage of students in NSLP is 45.46%. Women were appointed in

districts with a significantly lower poverty rate (42.64% in NSLP). Thus, women have

been receiving appointments as superintendents in the richer rather than the less

affluent districts expected by sexual political theory, *p* = .052. While women

superintendents tend to be located in large suburbs and large cities , we find that they

are less likely to work in low SES districts and, therefore, are more concentrated in

higher wealth, higher prestige systems.

Figure 4.15 Mean of Student Enrollment for Newly Hired Superintendents
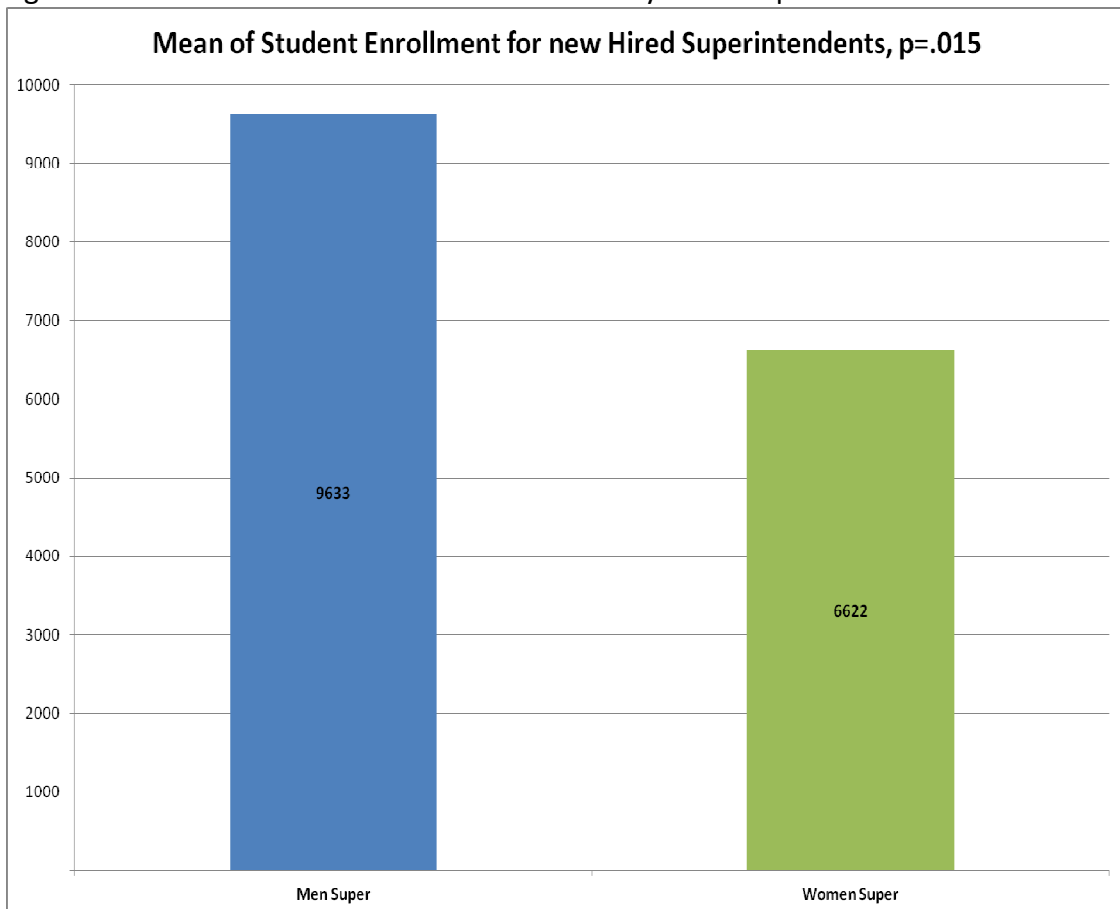
Figure 4.15 reveals the results for H4d. Despite being more successful in

attaining appointments in larger communities (large suburbs and cities), women tend to

be hired in districts with smaller total enrollments, *p* =.015. Total enrollment for

women, at the time of appointment, averaged 6,622. For men the average was 9,633,

more than 45% higher. This finding is incompatible with sexual politics theory as

superintendent prestige and salary levels tend to go up with increases in district size.

Figure 4.16 Mean of District API
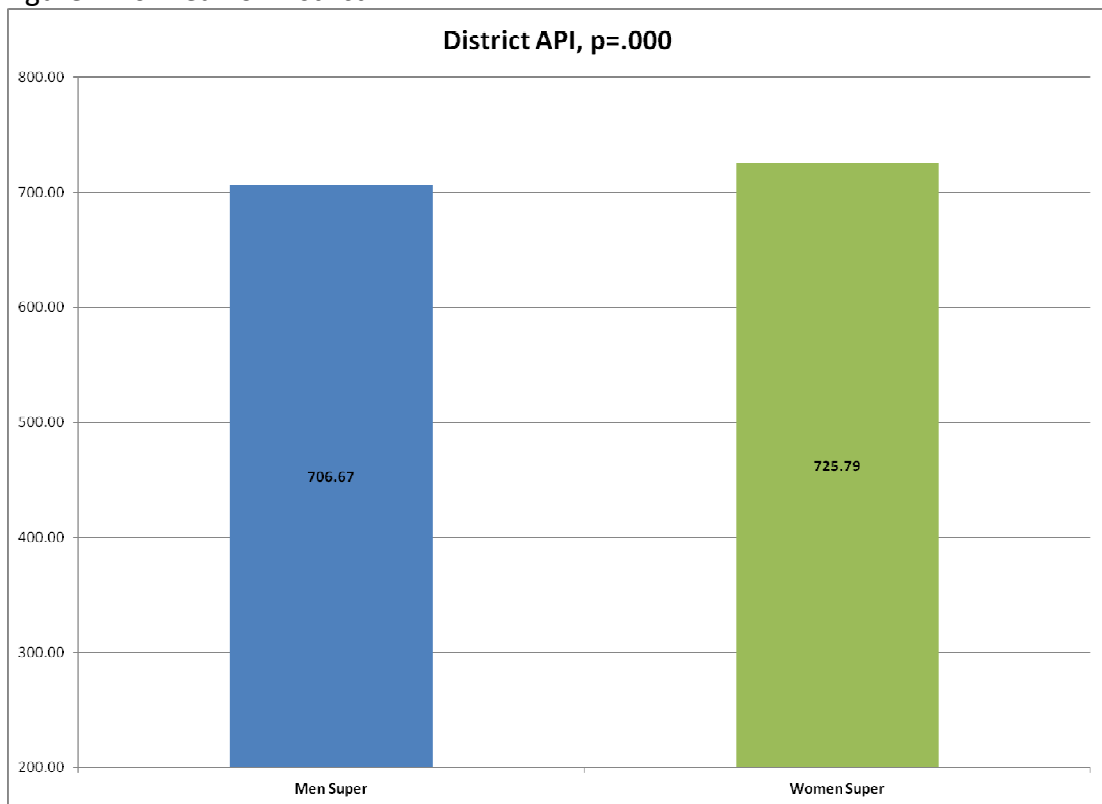
Figure 4.16 shows the results for H4e. H4e compares average district API scores

for men and women at the time of their appointment, *p* =.000. Women secured

appointments in significantly higher performing districts (API for women averaged 726

while men's districts averaged only 707). This does not fit the sexual politics theory

expectation that opportunities for women would be limited to lower performing school

systems. Apparently, women superintendents are the ones entering high status districts, not men.
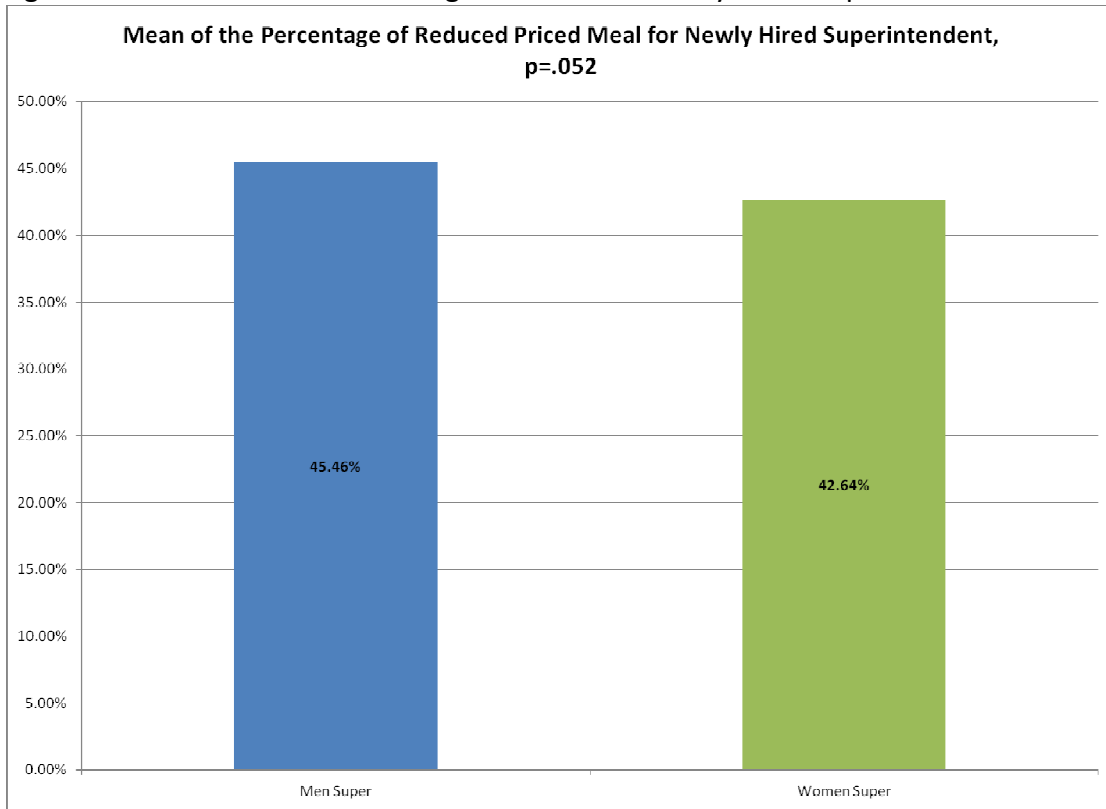
Figure 4.17 ELL percentage
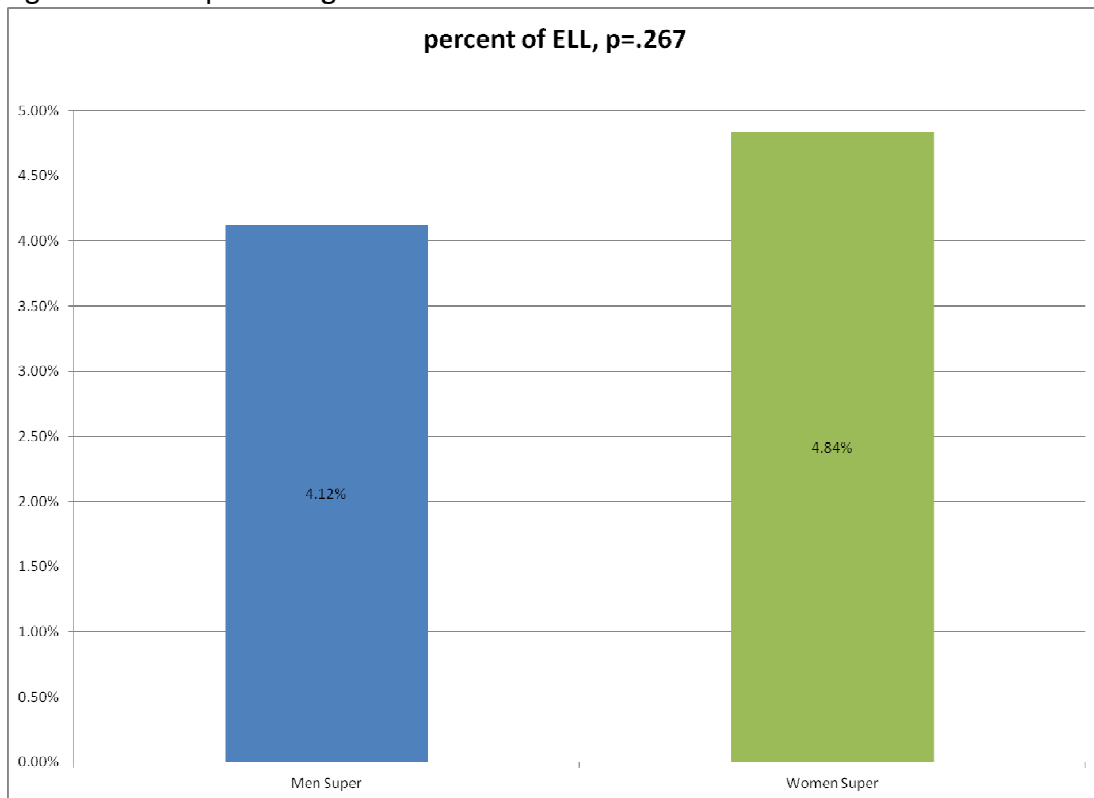
Figure 4.17 shows the results for H4f that for newly hired men superintendents, the mean of percentage of students in ELL is 4.12%. Women were appointed in districts with higher ELL percentage (4.84%).

Multivariate Testing of Prediction

Having completed a review of univariate differences between newly hired men and women superintendents, we turn not to multivariate analyses that control for the

extent of intercorrelation among predictor variables. Logistic regression was used for multivariate testing because according to Tabachnick and Fidell (2000) logistic regression predicts "a discrete outcome such as group membership from a set of variables that may be continuous, discrete, dichotomous, or a mix" (p. 517). SPSS© binary logistic regression analysis was performed using superintendents' sex as the outcome variable to determine how well the personal characteristics of the superintendent and the social characteristics of the school districts can effectively predict whether districts will appoint a man or a woman to fill a superintendent vacancy.

Sixty-one cases (3.6% of the total sample) were missing the dependent variable, leaving N=1629 for analysis. Table 4.2 summarizes the descriptive statistics for the independent variables (based on the total number of non-missing cases for each variable.

Table 4.2 Descriptive Statistics for Characteristics

Variable	N	Minimum	Maximum	Mean	SD
Ethnicity	1690	1	2	1.153	.360
Educational Level	1686	1	4	1.899	.919
Years of Educational Service	1686	0.00	52.00	27.759	10.525
Years in the District	1686	0.00	46.00	9.794	9.830
Locale	1690	1	8	3.537	2.068
API	1667	400.43	960.30	711.791	94.156
Meal	1672	0	100%	.447	.264
Percent of ELL	1677	0	81%	4.327	11.753
Average of Parent Educational Level	1650	1.09	4.63	2.848	.659
K-12 Student Enrollment	1679	8	741367	8784.403	40358.094

Valid N =1629

An initial test for the model in which the coefficients for all the independent variables were set to zero produced a Wald statistic (df=1) of 309.730, p = .000, the Exp(B) of .376, p = .000 for this null model reflects the fact that women received only 27.3% of the new appointments and are, therefore, about 38% as likely to be appointed to a vacant superintendency as men. When all predictors were entered as a full model, the omnibus chi-square test showed a significant improvement over the null model (χ^2 (17) = 64.103, p = .000). This indicates that the predictors, as a set, reliably improve our ability to predict whether new superintendents will be women. The Hosmer and Lemeshow Goodness-of-Fit test showed this logistic model could adequately predict the majority of appointments (χ^2 (8) = 11.885, p = .156), indicating that there are differences in the personal characteristics and district circumstances that help to determine the which sex will be selected to fill superintendent openings. After adjusting for the observed probability of a woman being appointed (.275), the full model correctly

predicts 739 of the male appointments (62.4%) and 253 of the women superintendents

(56.9%), for an overall prediction rate of 60.9%,   There remains, to be sure, substantial

uncertainty regarding why women are capturing some superintendencies but not

others. Nearly 40% of the sample is not properly identified by the variables available

from California's school data sets. Nevertheless, the predictors shown in Table 4.3

provide significant clues as to the factors influencing the relative success of women and

men applicants for superintendent in California public schools.

Table 4.3 shows the regression coefficients, standard errors, odds ratios and

Wald statistics for each of the predictors in the full model. For these tests, the ethnicity

variable was recoded to White = 0, Non-White – 1. For the two categorical variables,

superintendent education level and district local, one category was set as the reference

category (holding a doctoral degree for education and large suburban districts for

district locales). Hence, for each of these variables the logistic coefficients test whether

the appointments of women are more or less likely to be associated with categories

being tested than with the reference category. The odds ratios in each case are the

odds of women versus men displaying the tested category or condition, relative to their

odds of displaying the reference category characteristic or condition. Thus, for example,

the .969 odds ration shown for Non-White ethnicity in the first row of Table 4.3

indicates that new women superintendents are slightly less likely to be Non-White than

are men (In percentage terms, new women superintendents are 96.9% as likely to be

Non-White as are men).

Table 4.3 Summary of Logistic Regression Analysis Predicting Superintendent's Characteristics

Variable	B	SE	Odds ratio (Exp (B))	Wald statistic	Sig
Ethnicity-Nonwhite	-.032	.170	.969	.035	.852
Educational Level				5.300	.151
Educational Level: Masters degree plus 30 or more semester hours compared to Doctoral	-.280	.141	.756	3.969	.046
Educational Level: Masters compared to Doctoral	-.302	.164	.739	3.408	.065
Educational Level: BA plus/BA compared to Doctoral	-.176	.267	.839	.434	.510
Years of Educational Service	-.025	.006	.975	18.909	.000
Years in the District	.013	.006	1.013	3.919	.048
Locale				20.347	.002
Locale (Suburb: Mid-Size/Small compared to large suburb)	-.610	.203	.543	9.074	.003
Locale (City: Large compared to large suburb)	.011	.264	1.011	.002	.967
Locale (City: Mid-Size/Small compared to large suburb)	-.581	.202	.559	8.318	.004
Locale (Rural: Distant compared to large suburb)	-.545	.188	.580	8.378	.004
Locale (Rural: Fringe/Remote compared to large suburb)	-.596	.195	.551	9.382	.002
Locale (Town compared to large suburb)	-.712	.303	.491	5.50	.019
API	.003	.001	1.003	6.374	.012
Percent of Free-or-Reduced Price Meal	.114	.421	1.121	.074	.786
Percent of English Language Learners	.004	.006	1.004	.503	.478
Average Parent Educational Level	-.158	.193	.854	.672	.412
K-12 Student Enrollment Total	.000	.000	1.000	4.221	.040
Constant	-1.416	.844	.243	2.818	.093

Note: Note: Valid N = 1629

Note: Variables entered on step 1: superethnic, educlev, Super_YRT, Super_YRD, dislocale, API, MEALS, ELL, PARENTALED, ENROLLTOTAL

Interpreting the logistic regression output shown in Table 4.3 begins by

recognizing that an odds ratios are less than 1.000 (as with the ethnicity variable) we are

looking at an indication that women are less likely than men to display that

characteristic or be found in that condition. To discover whether the reported odds

ratio is statistically reliable, we examine the associated Wald statistics and related

significance value (shown in the last two columns of the table). Where the Wald

statistics have a significance value greater than .05 we must conclude that there is no

basis in the data for judging that the characteristic or condition being tested is more

prevalent for either men or women. As the significance value (p-value) gets

progressively smaller, confidence that the factor really distinguishes women from men

becomes increasingly reliable.

A perusal of Table 4.3 reveals that four of the variables submitted for analysis

(ethnicity, percent of students getting free or reduced price meals, percent of English

learner students, and average parent level of education) make no significant

contributions to our ability to predict when women will win the competition for

appointment as superintendents. Two of these variables (free/reduced price meals and

average parent education) were found to be significant or near significant when tested

alone. This indicates that these variables are sufficiently correlated with some of the

other variables in the model that they do not add additional predictive power when

used with the other variables. The other two (ethnicity and percent ELL students)

showed no predictive power in either the univariate or the multivariate tests, indicating

that these factors are of no help in determining when women will be appointed.

The strongest predictor in the table is the superintendents' years of educational service. The Wald statistic for years of educational service is 18.909 (p = .000), indicating that it is almost certain that there is a difference between men and women in their educational service. The odds ratio for this variable (.975) means that women have significantly fewer years of educational experience than men and that at the mean experience level (about 27.8 years) women diminish in their probability of success by about 2.5% for each additional year of educational experience. This, of course, is counter to that predicted by sexual politics theorists who have argued that women must spend more time in education before they can get access to the superintendency. One caveat, however, is that we do not know how often superintendents move from one district to another, and particularly whether men move more often or after more years of administrative experience. If so, the additional years of experience for men would be arising from their later movement between districts.

Though not significant in the univariate test, in this multiple logistic regressions the number of years spent within the district where the superintendent is appoint does add significantly to the predictive power of the model. The odds ratio of 1.013 is larger than 1.00, indicating that, in contrast with their total educational service, women are more likely than men to spend more time within the districts where they are appointed superintendent. This odds ratio indicates that at the mean level of district tenure (about 9.8 years); women are a bit more than one percent (1.3%) more likely than men to have an extra year of service in the district before becoming superintendents.

Five of the different school district geographic locales display Wald statistics that are statistically significant (also significant is the comprehensive test of all locales). All of the significant locale tests have odds ratios below 1.00, indicating that women are less likely to be found in these locals compared to their strong representation in large suburban areas. Women are less likely than men to be appointed to districts serving: a) mid-size and small suburbs (odds ratio = .543), b) mid-size and small cities (odds ratio = .559), c) distant rural locales (odds ratio = .580), d) fringe and remote locales (odds ratio = .551), and e) towns (odds ratio = .491). Though the odds ratio is above one (ratio = 1.011, ns) for the probability that women would be more likely to be found in large cities, the Wald statistic for this local is not significant indicating there is no significant likelihood that women will be disproportionately found in big cities, but men are not more likely to be there either.

Although the overall level of a superintendent candidate's education does not significantly predict whether the district will hire a woman or a man, there is a statistical difference when candidates holding an earned doctoral degree are compared with those holding a Masters degree plus 30 or more semester hours. As seen in Table 4.3, the odds ratio for women holding a masters plus 30 rather than a doctoral degree is .756, meaning that, all other things being equal, women are significantly less likely to hold only the masters degree and more likely to hold the doctorate. Apart from the numerical dominance of male superintendents throughout the study period, this is the strongest support found in the present study for the sexual politics assertion that

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women are disadvantaged in the competition for executive roles in the schools. It is not entirely certain, of course that their more frequent possession of doctoral degrees is because they need stronger education credentials to compete with men candidates (they may, for example, simply have a predisposition to seek advanced degrees without really needing them), but it is certainly likely that the added education makes an important contribution to women's competitive success.

The other significant predictors of women's success as superintendent candidates (the district average academic API scores and district size, measured by total enrollment) provide mixed evidence regarding sexual politics hypotheses. The odds ratio for API scores (1.003) means that women are more likely to be appointed in the more prestigious districts with higher API scores – about 3% more likely for each 10 point increase in API scores. At the same time, however, women tend to be appointed in somewhat smaller school districts where salaries and benefits for the chief executives are typically lower.

In sum, the logistic regression presented in Table 4.3 sustains, and to some extent clarifies the univariate analyses described earlier. Evidence regarding the applicability of sexual politics theory is decidedly mixed. Women are better educated and are appointed to somewhat smaller districts – suggesting that they may be disadvantaged in their competition with men. On the other hand, they are winning appointments in more prestigious suburban districts, are gaining access to the superintendency after fewer years of experience, and are winning appointments in

school districts with higher academic attainment. There appears to be no effect on women's access to the superintendency due to their own ethnicity, or due to school district poverty, student English language learner status, or parent education levels.

Whether Newly Hired Superintendents Determine Female Staff Percentages

So far the data have shown that districts prefer men over women as their superintendents and that both personal and district characteristics influence the likelihood that a woman will get the job. Change has been coming, but very slowly, as districts overwhelmingly tend to replace departing superintendents with another one of the same sex. If sexual political theory is an appropriate framework for interpreting the persistence of male domination of the superintendency, and the slowness of change toward more opportunities for women, we should expect that men and women, once in office, will make staff appointments with a gender bias. We should find, that is, that women award more staff appointments to other women, while men preserve, or perhaps even expand, male domination of staff positions. This proposition may work more dramatically for staff within the administrative control line (assistant principals, principals and assistant superintendents) than it does for employees in support staff positions (e.g., special education, student services, program administration and general administration) because the line positions are typically seen as more powerful and prestigious.

Before testing this proposition, it is important to note that the available

California data are not very clearly differentiated by line and support staff

responsibilities. Some district central office staff is much closer to "line" authority than

others, but the CBEDS data system does not always differentiate them clearly. In school

districts, staff members with "Director" titles, for example, nearly always have

significantly more line authority than those with "Coordinator" titles. Unfortunately, the

CBEDS system does not code these job titles separately and, instead, focuses on the

functional responsibility rather than the level of responsibility held by staff members.

The CBEDS system does clearly identify the line positions of Assistant Principal, Principal

and Assistant Superintendent – identifying each with a unique job title code. Hence,

these job titles can be properly treated as line administrative staff. Among Special

Education Administrators, Student Services Administrators, Program Administrators and

General Administration staff one would, no doubt find some line administrative leaders,

but for the purposes of this study they are all treated as support staff personnel as that

is the type of work the great majority of these administrators do.

It is also important to recognize that a large number of California school districts

are too small to support multiple administrative staff in any category, making it

impossible to monitor changes in the sexual composition of staff appointees. At one

extreme, for example, only 408 of the 1,690 superintendent changes between 2000 and

2008 took place in districts with one or more Assistant Superintendent positions. At the

other extreme, in all but 416 turnover cases there was at least one principal in addition to the superintendent.

To test the effects of superintendent sex on staff composition California school administrators were coded into the seven distinct categories shown in Table 4.4. The data in this table show the proportion of females in each of these job categories averaged over the nine year period covered in this study.

Table 4.4 Descriptive Statistics for Proportion of Females in Seven Job Categories

Staff Position Titles	N	Missing	Mean	SD
Assistant Superintendent	408	1282	.464	.447
Principal	1,274	416	.550	.266
Assistant Principal	1,022	668	.511	.305
General Administration	826	864	.612	.312
Program Administration	824	866	.668	.353
Student Services	844	846	.787	.286
Special Education	1,069	621	.897	.194

Total N = 1690

One important observation about this table helps to set the context for testing the impact of superintendent sex on school staffing patterns. Over the entire period of this study (2000 through 2008) women held an absolute majority of all staff positions except the power gate-keeping position of Assistant Superintendent. Women dominated administrative positions in Special Education (89.7%) and Student Services (78.7%). In these two positions women are better represented than they are in the general teaching workforce (which is 72.48% female). While they are still in the majority, women are much less well represented in the jobs of Assistant Principal (51.1%) and Principal (55%). From a sexual politics perspective this is a decidedly mixed

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picture. Clearly women do manage, as well as teach, in California schools but their

managerial roles tend to be more in support staff than in line administrative positions.

To track the effect of superintendent sex on staff appointments, the proportion

of women holding each of the seven administrative job categories shown in Table 4.4

was calculated for the year of each new superintendent's appointment and for two

successive years. This allows for a statistical test of whether women superintendents

tend, as sexual politics theory assumes, to disproportionally appoint other women into

any of these subordinate positions. Female proportions of staff in each of the three

years are measured for women and men superintendents and a repeated measures

analysis of variance was performed to test whether: a) women superintendents have a

greater proportion of women on their staff (main effect for superintendent sex), b)

significant changes occur in the proportion of women in these staff roles during the first

two years following superintendent appointments (main effect for years), and c) there is

a significant interaction between superintendent sex and years in office (indicating that

women or men have a gender bias in their staff appointment practices). It is, of course,

the interaction effect which sexual politics theory expects to be significant – with the

proportion of women moving higher when women hold the office and lower when men

hold power.

Applying the SPSS© GLM repeated measures analysis of variance procedure

produced the following results:

A. Assistant/Associate/Deputy Superintendent Appointments

Tables 4. 5a and 4.5b report the output of an SPSS© General Linear Models (GLM), repeated measures ANOVA applied to the composition of the Assistant, Associate and Deputy superintendent positions in all districts supporting such positions for three years beginning with the year during which new superintendents took office.

Table 4. 5a reports the descriptive statistics for these positions. Table 4.5b covers the ANOVA test results. From the descriptive statistics table it is obvious that there are relatively few districts with staff appointments in these executive management positions (52 with newly appointed women superintendents and 152 with men). Less obvious from the table, but important for the statistical analysis, is the fact that most districts have no more than one or two of these senior management staff appointees, making the calculation of the proportion of women occupying these positions under each superintendent a bit coarse. The position will be either 0% or 100% women when only one senior staffer is present. Nevertheless, as the table indicates, fewer than half of all assistant superintendents were women at the time of the new superintendent appointments. Moreover, women remained in the minority in each of the two subsequent years. This is true for both men and women superintendents.

Table 4.5a Descriptive Statistics for Proportion of Female Assistant Superintendents Over Three Years by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendents	Mean	SD	Mean	SD	Mean	SD	N
Women	.456	.444	.416	.449	.416	.453	52
Men	.477	.441	.457	.448	.464	.445	152
Total	.472	.441	.447	.448	.452	.447	204

Table 4.5b displays the repeated measures ANOVA results for the relationship between new superintendent appointments and the proportion of women holding positions identified as Assistant, Associate or Deputy Superintendent. The Box's M shown on the table indicates that homogeneity of variance is adequate to allow testing of main effects. The Mauchly's W test indicates that the Huynh-Feldt epsilon correction should be used to adjust degrees of freedom due to a lack of sphericity when testing interaction effects.

Table 4.5b Repeated Measures ANOVA for Proportions of Female Assistant Superintendents by Superintendent Sex and Tenure in Office

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Sex	1	.052	.052	.331	.002
Error	202	31.805	.157		
		Within Subjects			
Years	1.603	.084	.052	.669	.003
Years*Sex	1.603	.015	.009	.121	.001
Error	323.757	25.258	.078		

Note: Box's M = F (6, 56505) = 1.395, ns
  Mauchly's W = .738, p = .000
  Huynh-Feldt epsilon correction = .801 used
  No main or interaction effects are significant at the p<.05 level

Examination of the F statistics in Table 4.5b finds no significant main effects for superintendent sex or for years in office, and no interaction effect indicating that staff

changes made during the first three years of a new superintendent's tenure were

affected by the superintendent's sex or tenure in office. Hence, analysis of Assistant

Superintendent appointments can be interpreted as adding a bit of support to the "glass

ceiling" hypothesis insofar as men hold a substantial majority of these number two

administrative appointments and maintain this control even when women are

appointed to the superintendency. The competition for control over appointments

hypothesis is, however, not supported.

B. For the Principals

SPSS© GLM repeated measures ANOVA applied to the 939 cases where principal

sex was reported for at least three years beginning with the appointment of a new

superintendent (55.6% of the total sample) is reported in Tables 4.6a and 4.5b. This

analysis includes 257 newly appointed women superintendents and 682 newly

appointed men. Table 4. 6a displays descriptive statistics; Figure 4.18 displays a plot of

the estimated marginal means of the proportions of women principals in each of the

new superintendents' first three years in office. Table 4.11 reports the repeated

measures ANOVA results for this analysis.

Table 4.6a Descriptive Statistics for the Proportion of Female Principals for Three Years
Following Superintendent Appointment by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendent Sex	Mean	SD	Mean	SD	Mean	SD	N
Women	.581	.237	.593	.228	.599	.234	257
Men	.532	.253	.532	.251	.549	.245	682
Total	.545	.249	.548	.246	.563	.243	939

The data in Table 4.6a confirm that women held a majority of principal appointments at the time new superintendent appointments, regardless of whether the new superintendents were men or women. Additionally, as depicted graphically in Figure 4.18, women continue to hold a majority of all principalships throughout the first there years of the superintendents' tenure – again, regardless of the superintendent's sex.

Figure 4.18

	Yr0 female principal percent	1st yr female principal percent	2nd yr female principal percent
Woman Superintendent	.5813	.5931	.5995
Man Superintendent	.5319	.5315	.5493
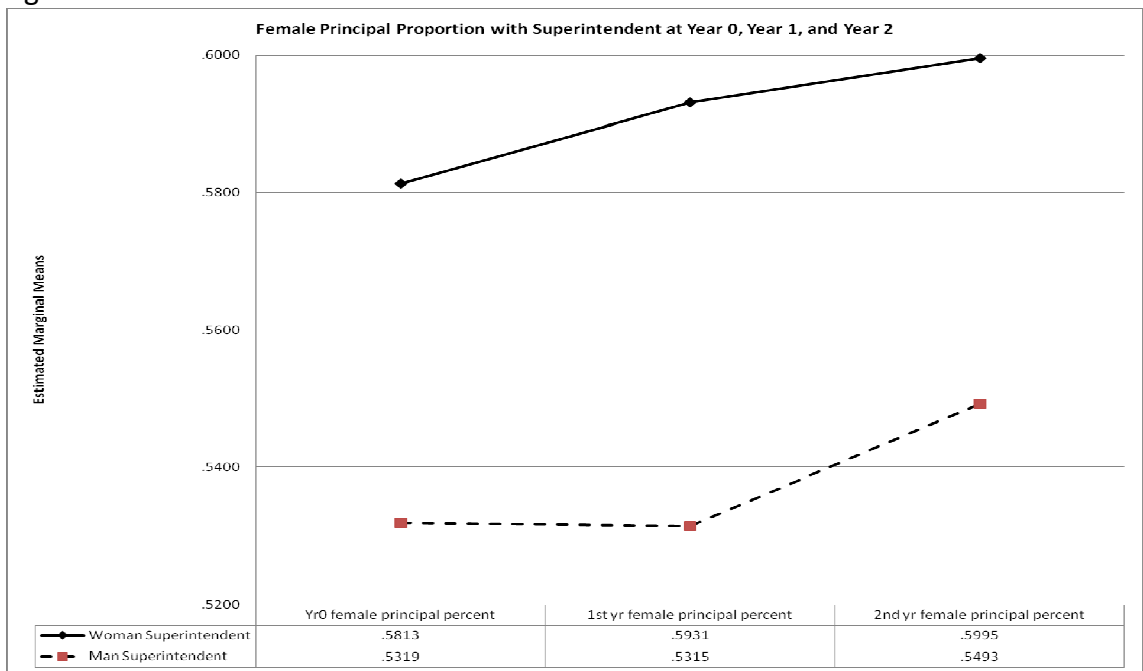
The repeated measures ANOVA shown in Table 4.6b confirms the visual picture in Figure 4.18. The upper line in the figure tracing the proportion of women principals when women are appointed to the superintendency is reliably higher than that for the men. At the time of appointment, women superintendents enter districts with about 5% more women principals on staff. The upward slope of both lines, tracing the growth

in the proportion of women principals during the early tenure of both men and women

superintendents, are also statistically reliable, confirming that women are gaining more

representation among principals during the three year period immediately following

appointment of a new superintendent of either sex.

Table 4.6b Repeated Measures ANOVA Results of the Effects of Superintendent's Sex on
Female Principal Proportion by Superintendent Tenure Years

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Superintendent's Sex	1	.539	.539	11.236***	.012
Error	937	44.933	.048		
		Within Subjects			
Time	1.673	.123	.074	3.391*	.004
Time*Super_Sex	1.673	.017	.010	.477	.001
Error	1567.912	34.119	.022		

Note: ***p = .001; *p = .042
    Box's M = F (6, 1494895.866) = 1 .178, ns
    Mauchly's W = .802, *p* = .000
    Huynh-Feldt epsilon correction = .84 used

As indicated in the notes for Table 4.6b, Box's M indicates that homogeneity of

variance is not violated. Departure from sphericity assessed by Mauchly's W is,

however, significant making it appropriate to use the Huynh-Feldt epsilon correction to

test interactions.

As indicated in Table 4.6b, there was no significant interaction between

superintendent sex and the number of years following superintendent appointments.

The statistically similar pattern of growth in female principal appointments under both

male and female superintendents during their first three years in office does not

support the sexual politics contention that competition between the genders would lead women to appoint relatively more women to the principalship, and men to appoint relatively fewer. What we find, instead, is that districts that have hired more women principals prior to superintendent succession are more likely to find women applicants for the superintendency attractive.

C. Assistant/Vice Principal Appointments

Tables 4.7a and 4.7b present the SPSS© GLM repeated measures ANOVA for the proportions of females holding vice or assistant principal appointments in the districts where new superintendents are being appointed. Data in these tables serve to test the hypotheses that a) women superintendents work in districts with larger proportions of female assistant principals (main affect for superintendent sex), b) that the proportion of women assistant principals increases during the first three years of a woman's superintendency (main effect for years in office), and c) that women increase the proportion of women assistant principals faster than men (interaction effect for years*sex). There were 717 cases of new superintendents with one or more assistant principals with reported sexual identifiers. Descriptive statistics are shown in Table 4.7a.

Table 4.7a Descriptive Statistics for Proportion of Female Assistant Principals for Three Years Following Superintendent Appointment by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendent Sex	Mean	SD	Mean	SD	Mean	SD	N
Women	.513	.276	.520	.285	.515	.282	204
Men	.507	.284	.498	.280	.489	.276	513
Total	.509	.281	.504	.281	.496	.278	717

The most important observation to be noticed in Table 4.7a is that women held a

slim majority of Assistant Principalships at the time of new superintendent

appointments, regardless of the new superintendent's sex. Second, it should be noted

that, for newly appointed women superintendents this slim majority was maintained,

but among men superintendents the proportion slipped to just fewer than 50% during

their second and third years.

Table 4.7b Repeated ANOVA Results of the Effects of Superintendent's Sex on Female Assistant Principal Proportion

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Superintendent's Sex	1	.048	.048	.852	.001
Error	715	39.971	.056		
		Within Subjects			
Time	1.864	.025	.014	.371	.001
Time*Super_Sex	1.864	.034	.018	.018	.001
Error	1332.918	48.611	.036		

Note: Box's M = F (6, 965043) = .728, p = .527
Mauchly's W = .923, p = .000
Huynh-Feldt epsilon correction = .923
Neither main effects nor interaction effect are significant

The ANOVA results displayed in Table 4.7b Indicate that the assumption of

homogeneity of variance is not violated, but assumption of sphericity was significant. As

a result, the Huynh-Feldt epsilon correction was used to examine the interaction

between superintendent sex and years after appointment. As indicated in the table,

neither main effects nor the interaction effect tested in this analysis indicate any

relationship between superintendent sex and the sex of the districts' assistant

principals. These results produce no support for the sexual politics theory of

competition for control of staff appointments. If, however, one expects staff sex

distribution to reflect the sex composition of the teacher work force (which is 72.48%

female), then women are underrepresented in the assistant principalship, offering some

support for the "glass ceiling" component of sexual politics theory.

D. General Administrator Appointments

Turning from the line administrators to the support staff categories of general

administration, program administration, student services and special education staff, we

find little additional support for the sexual politics theory of competition and/or "glass

ceiling" limitation of administrative opportunities for women. Tables 4.8a and 4.8b

present an analysis of the new superintendents' impact on General Administrator

appointments.

Table 4.8a Descriptive Statistics of Female General Administration Staff Proportions for Three Years Following Superintendent Appointment by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendent's Sex	Mean	SD	Mean	SD	Mean	SD	N
Women	.632	.303	.620	.291	.633	.295	175
Men	.586	.291	.603	.283	.619	.280	408
Total	.600	.295	.608	.285	.623	.285	583

Table 4.8a tracks the proportion of women holding General Administration job codes. Here, as with the univariate look at this staff position described above, we find that women hold a solid majority of these positions when new superintendents of either sex are appointed. However, new women superintendents are appointed in districts where women have a stronger grip on appointments in this job category than when men superintendents are appointed (63.2% for women superintendents, 58.6% for men). But, as shown in Table 4.8b, this difference is not statistically reliable.

Table 4.8b Repeated ANOVA Results of the Effects of Superintendent's Sex on Female General Administration Staff Proportions

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Sex	1	.080	.080	1.254	.002
Error	581	37.282	.064		
		Within Subjects			
Years	1.750	.079	.045	1.359	.002
Years*Sex	1.750	.077	.044	1.332	.002
Error	1016.827	33.730	.033		

Note: Box's M = F (6, 737480) = 2.638, p = .015
Mauchly' W = .852, p = .000
Huyndh-Feldt epsilon correction = .875
Neither main nor interaction effects are significant

Table 4. 8b displays the repeated measure ANOVA result. Box's M indicates a significant violation of the homogeneity of variance assumption making it necessary to view the main effects cautiously. The Mauchly's W indicator also indicates violation of the sphericity assumption leading to a use of the Huyndh-Feldt correction of .875. Both main effects and the interaction effect are so near zero, however, that it is certainly safe

to assume that there is no significant relationship between a new superintendent's sex and the sexual composition of the General Administrators in the districts which they are serving.

We can conclude, therefore, that the substantial majority of women holding appointments in general administrative positions is unrelated to whether men or women are appointed as district superintendents, at least during the first three years of a superintendent's tenure. Apparently the sexual politics assumption of sex based sponsorship for these positions cannot be traced to the superintendent. Whether there may be sex based sponsorship from other administrative levels or from school board members remains to be studied.

E. Program Administrator Appointments

Tables 4.9a and 4.9b report the GLM analysis for the impact of superintendent sex on the appointment of women to Program Administrator roles. Table 4.9a presents the estimated means and standard deviations for this group of 539 administrators.

Table 4.9a Descriptive Statistics for Female Program Administrator Staff Proportions for Three Years Following Superintendent Appointment by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendent's Sex	Mean	SD	Mean	SD	Mean	SD	N
Women	.682	.350	.697	.331	.695	.323	158
Men	.697	.299	.695	.293	.682	.305	381
Total	.693	.314	.695	.305	.686	.310	539

The most important finding from Table 4.9a is that women hold a substantial

majority of the program administration positions (averaging 69% over the three years

following new superintendent appointments). This is true whether the districts

appointed women or men to the superintendency. Moreover, the dominance of women

in these roles persists throughout the first three years of the new superintendents'

tenure.

Table 4.9b Repeated ANOVA Results of the Effects of Superintendent's Sex on Female
Program Administration Staff Proportion

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Sex	1	1.652E-6	1.652E-6	.000	.000
Error	537	39.972	.074		
		Within Subjects			
Years	1.808	.012	.007	.188	.000
Years* Sex	1.808	.045	.025	.678	.001
Error	970.703	35.459	.037		

Note: Box'M = F (6, 589617) = 4.032, p = .000
       Mauchly's W = .888, p = .000
       Huynh-Feldt epsilon correction = .904
       Neither main nor interaction effects are significant

Table 4.9b displays the repeated measures ANOVA result. Box's M is significant,

indicating that caution should be used in interpreting significance tests, and Mauchly's

W indicates that the Huynh-Feldt epsilon correction is needed to interpret interaction

effects. As shown on the table, however, there is no evidence of either main effects or

an interaction effect. Therefore, there is no reason to believe there exist any connection

between the sexual composition of the program administrator staff and the sex of

newly appointed superintendents. The record of employment in these program

administration job classifications does not appear to support either the competition for

control of appointments or the "glass ceiling" hypotheses of sexual politics theory.

Women get nearly comparable access to these positions and are appointed equally by

both men and women superintendents.

F. Student Service Staff Appointments

SPSS© GLM repeated measures analysis for staff with student services

responsibilities is reported in Tables 4.10a, Figure 4.19, and Table 4.10b. There were

individuals holding these positions during the first three years of 544 new

superintendents (142 women and 402 men).

Table 4.10a Descriptive Statistics of Female Student Service Staff Proportion for Three
Years Following Superintendent Appointment by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendent's Sex	Mean	SD	Mean	SD	Mean	SD	N
Women	.745	.297	.784	.252	.792	.266	142
Men	.782	.269	.782	.269	.794	.251	402
Total	.773	.277	.783	.265	.793	.255	544

Table 4.10a reports the means and standard deviations for the proportion of

women holding student services staff positions during the first three years of the new

superintendent tenures. As noted previously, the female domination of these jobs is

very substantial, outstripping the female proportion in the teaching work force. It

should also be noted that by the end of the superintendent's third year in office men

and women superintendents had nearly identical proportions of women employed in

these positions. Figure 4.19 plots the average proportions of women student services

administrators from Table 4.10a. There is something of a surprise here as women

superintendents had a smaller proportion of women student services administrators

during their initial year but essentially equal proportions by their second year in office.

Statistical testing of this is difference is shown in Table 4.10b.

Figure 4.19

Female Student Service Staff Proportion with Superintendent's Sex at Yr0, Yr1, and Yr2

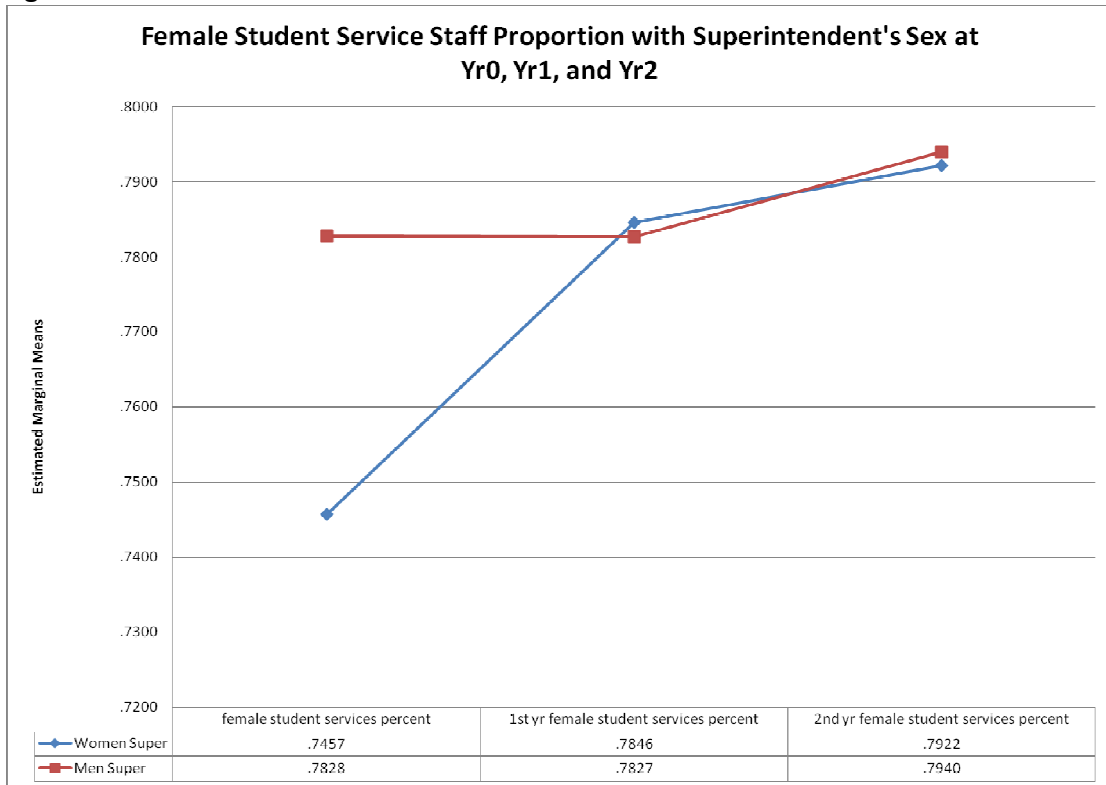|	female student services percent	1st yr female student services percent	2nd yr female student services percent
Women Super	.7457	.7846	.7922
Men Super	.7828	.7827	.7940

Table 4.10b Repeated ANOVA Results of the Effects of Superintendent's Sex on Female Student Services Staff Proportion

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Sex	1	.016	.016	.270	.000
Error	542	31.887	.059		
		Within Subjects			
Years	1.854	.182	.098	5.036*	.009
Years*Sex	1.854	.097	.052	2.692	.005
Error	1005.102	19.540	.019		

Note: Box's M, F (6, 439608) = 2.054, p = .055

Mauchly' W = .916, p. 000

Huyndh-Feldt epsilon = .927

Main effect for Sex is ns, for Years F (1.854, 1005.1) = 5.036, p = .008

As shown in Table 4.10b repeated measures ANOVA reported that Box's M finds homogeneity of variance sufficient to allow testing of main effects. However, Mauchly's W indicates the need for a Huyndh-Feldt epsilon correction of .927 to test interactions. The ANOVA output does not find the differences in the composition of student services staff between women and men superintendents to be significant. That is the apparent difference shown in Figure 4.19 is not reliable enough to be reject the possibility that it is the result of sampling error. What is significant, however, is the growth trajectory in the proportion of women holding these positions during the first three years of new superintendents' time in office. The proportion of women in the student services positions grew significantly, adding further to the over-representation of women in these roles.

For these administrative positions, there is no support for sexual politics theory. There is no "glass ceiling" and no reliable difference in the appointment decisions of men and women. One could continue to embrace sexual political competition theory if it were reasonable to assume that appointment to a student services administrative position represents an actual loss of power and prestige for the teachers who move from the classroom to take on these jobs. That seems quite unlikely, however, since these administrators have higher pay and more workplace autonomy than typical classroom teachers.

G. Special Education Administrator Appointments

SPSS© GLM repeated measures was also applied to the sexual composition of special education administrators in the 766 cases where new superintendencies arose in districts reporting special educators for at least three years beginning with appointments of new superintendents. Table 4. 11a and 11b display the results of the GLM analysis for this staff group.

Table 4. 11a Descriptive Statistics for Female Special Education Staff Proportion for Three Years Following Superintendent Appointment by Superintendent Sex

	Year 0		Year 1		Year 2		
Superintendent Sex	Mean	SD	Mean	SD	Mean	SD	N
Women Superintendents	.911	.172	.905	.166	.907	.142	207
Men Superintendents	.897	.171	.893	.170	.899	.156	559
Total	.901	.171	.896	.169	.901	.152	766

With only minor fluctuations, the means in Table 4.11a indicate that women are dominating special education staff appointments to a very substantial degree.

Regardless of whether new superintendents were women or men, women were found

to hold just about 90% of all special education staff administrative positions – at the

time of the superintendent appointments and for each of their next two years.

Although these may be among the least prestigious administrative appointments, there

is clearly no "glass ceiling" here preventing women from gaining access in number

substantially outstripping their representation in the teaching workforce. Statistical

evaluation of the women's representation in special education administrative staff

positions is reported in Table 4.11b.

Table 4.11b Repeated ANOVA Results of the Effects of Superintendent's Sex on Female
Special Education Staff Proportion

Source	df	SS	MS	F	η_p^2
		Between Subjects			
Superintendent's Sex	1	.020	.020	.882	.001
Error	764	16.902	.022		
		Within Subjects			
Time	1.851	.009	.005	.612	.001
Time*Super_Sex	1.851	.002	.001	.147	.000
Error	1413.885	11.676	.008		

Note: Box's M, F (6, 959656) = 2.340, p = .029
        Mauchly's W = .914, p = .000
        Huynh-Feldt epsilon correction = .925
        Neither main effects nor interaction effect significant

Box's M indicates that homogeneity of variance is violated requiring caution in

interpreting statistical findings. Mauchly's W also indicates that sphericity is also

violated leading to the use of the Huynh-Feldt correction for testing interaction effects.

Even viewing the results cautiously, however, there is nothing in this analysis to indicate that there is any significant impact of superintendent sex on the sexual composition of the special education work force. The explained variance in staff composition in miniscule (no more than .1 percent).

In essence, analysis of the special education staff positions provides no support for the sexual politics theory. There is no "glass ceiling" effect – women are clearly over-, not under-represented in this staff group, and their over-representation is not affected by whether women or men are appointed to the district superintendency. That is, there is no evidence of competition for control over staff appointments in this domain.

Chapter V Theory and Policy Discussion

This study reviewed a number of studies discussing the shifting of responsibilities for public school superintendent since 1863. This study argues that a superintendent's responsibilities have shifted toward politics, especially inasmuch as a superintendent needs to communicate current educational policy requirements to the community and report to the board about district activities. This study also reviewed research arguing that women educators face challenges gaining access to the position of a public school superintendent because the superintendent position has been described as male dominated. Current women superintendent research has identified several characteristics that might account for the disadvantages that women face. Based on the previous research reviewed here, I selected sexual politics theory as the frame work guiding my exploration of trends for women superintendents in the California public K-12 system. Sexual politics theory argues that women and men compete for limited organizational resources by using their background, training, and political networking as strategies in order to win the competition. Sexual politics theory also argues that women superintendents are more likely to be located at less prestigious districts, that is, rural, lower academic performance, low socioeconomic status, and districts with fewer resources.

The first purpose of this study is to examine several characteristics indentified by recent women superintendency studies to understand how these characteristics

influence the politics of hiring superintendents in California K-12 public school systems. These characteristics are: years of educational service, years in the district, ethnicity, educational level, student enrollment, average parent educational level, API scores, district locale, the percentage of students who are in lunch program (NSLP), and the percentage of students who are English Language Learners. The second purpose of this study is to test whether districts that hired women superintendents have larger percentages of women district office personnel than those districts that hired men superintendents. This purpose is to show that women superintendents increase the representation of women staff because the female network can help women to secure district leadership positions.

Data collected from California Department of Education's California Basic Education Data System, California Department of Education's Academic Performance Index, and National Center of Educational Statistics Common Core Data constitute a working data set for this study. The years from 2000 to 2008 were selected as this study's period because these are years after the passing of PSAA in 1999 which allows this study to locate districts' API scores. Verification using the *California School Directory* (CDE, 1999~2009) helps this study to validate the accuracy of the information. The following is a summary of the findings from testing hypotheses which is followed by a discussion of similarities and differences compared to current women superintendent studies.

The Tested Hypotheses and Summary of the Findings

Two points were tested in the first hypothesis: at the point of hiring, women superintendents will have more years of educational service; and newly hired women superintendents will have more years of experience within the districts that hire them. The findings for the first part of the hypothesis show that newly hired women superintendents, at the time of their appointments, have an average of 26.36 years of educational service. Newly hired men, at the time of their appointments, by comparison, have an average of 28.29 years of educational service. Newly hired women superintendents have spent less years in educational service than men. In terms of the years that a newly hired superintendent has worked in a district, women, at the time of their appointments, on average, have worked 9.86 years in their district. Newly hired men superintendents, at the time of their appointments, have worked on average 9.77 years in their district. Newly hired women superintendents have spent slightly more years working in their districts. The second hypothesis tested the educational level for women and men superintendents. This study predicts that, at the time of their appointment, women superintendents will have significantly higher education levels than men. The result shows that women superintendents at the time of their appointment have more doctoral degrees than men. This means that newly hired women superintendents are better educated than their male counterparts.

The third hypothesis tested three parts: 1) whether the proportions of women superintendents will increase over time; 2) whether the predecessor's sex influenced the successor's sex; 3) whether the sex of a newly hired superintendent will significantly predict changes in the sex composition of district staff. The findings show women superintendents have increased roughly about 1.13 % throughout the study period. This means that women keep their superintendent appointments for a longer period otherwise they would be losing rather than gaining ground in the superintendency. The predecessor's sex influenced the successor's sex. Women superintendents were more likely to enter districts that have women predecessors. The sex of a newly hired superintendent does not predict change in the sex composition of district staff.

The fourth hypothesis tests school district characteristics. The findings show that compared to other locales, newly hired women superintendents are more prevalent in large suburbs. Newly hired women superintendents work for districts with higher levels of parent education (2.91; 2.82 for men). Newly hired women superintendents work for districts with smaller numbers of students in the National School Lunch Program (42.64%; 45.46% for men). Newly hired women superintendents have less total student enrollment (6622; 9633 for men). Newly hired women superintendents work in districts with significantly higher API scores (725.79; 706.67 for men). Newly hired women superintendents work in districts with higher proportions of ELL students (4.84%; 4.12% for men). The fifth hypothesis tested whether once a superintendent is appointed, he or she will be likely to sponsor members of their own sex groups. Female principal

percentage change over time was significant and the female student services staff

percentage change over time was significant, but neither category was influenced by

superintendent's sex.

Discussion

The original data set does not include information on mentors that this study

could access. The mentor/mentee relationship has been discussed in current women

superintendency research (Brunner & Grogan, 2007; Dana &Bourisaw, 2006) as an

effective method that helps women educators not only to succeed in obtaining the

position but also in retaining the position. The example of Ella Flagg Young shows how

sexual politics worked in her favor to gain access to the superintendency. She worked

closely with several mentors during her career, and she had strong support from the

teachers' union. These experiences with political networking enabled her to deal with

power struggles with the school board and ensure success in her position as the first

woman superintendent for Chicago public schools. The support for Young to become

superintendent was both from the bottom up and also from the top down. Although

this study was not able to obtain information about mentoring relationships for

superintendents or the numbers of women union members, this study has shown that

women superintendents are increasingly leading high status districts.

This study finds that the data shows a different outcome for newly hired women

superintendents than current women superintendent studies. Specifically, this study

finds that women work in large suburbs and large cities; women enter districts with higher API scores than men; women have fewer years in educational service. These characteristics indicate that women educators are found in high status districts: those with more resources and better student academic performance than in districts led by men. It is possible to suggest that these districts have diverse community backgrounds making them more comfortable with women educational leaders. It is also possible to suggest that these high status districts have worked with women superintendents before enabling women to win the competition again.

This study shows that the proportion for newly hired women superintendents, averaged over the study period, is 27.3%. If we examine the historical trend for the proportions of women superintendents, women's representation has steadily increased over time. In 1985, according to CBEDS data, California had only 8.25% women superintendents. The proportions of women superintendents in 2008 (the end of this study period) is 31.7%. Even though men still obtain the majority proportions, women have steady increased their representation in this profession at a slow speed.

This study finds that women superintendents have not influenced the representation of women district office staff. Rather, women superintendents were more likely to start at districts with higher percentages of female district staff. Women applicants for the superintendency tend to be successful where there are significantly

more women in the principalship. Women superintendent applicants also tend to be more successful where there are more women in the student services positions.

These findings are in direct opposition to sexual politics theory: newly hired women superintendents are not disadvantaged because they are located at prestigious districts: higher API scores and located in large cities/large suburbs, which means more resources. Women superintendents are better educated than men and they are spending fewer years in educational service. Women superintendents do not sponsor women district staff.

Policy Implementation and Limitations

The Civil Rights Act of 1964 prohibited discrimination based on race, color, national origin, sex, religion, and retaliation. A year after the Civil Rights Act, the Equal Employment Opportunity Commission (EEOC) was created to eliminate unlawful employment discrimination. Women have fought for equality in the workforce and wages. The superintendency is a male dominated position though this study has shown that women in the California public K-12 system are steadily gaining opportunities to become superintendents and especially superintendents of high status districts. School organizations are influenced by external policies and communities and it is possible to suggest that with the equal employment policies as well as women's education or cultural changes, women superintendents have gained ground in the superintendency in California. Understanding the characteristics which have helped women

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superintendents to the position benefit the future researcher and superintendent candidate. This is because the methods employed in most of the studies that were reviewed in Chapter II focus on understanding the difficulties of becoming superintendent using interviews with women superintendents.

This study helps to explain which characteristics predicted for California K-12 superintendents. Women have to spend more time to obtain doctoral degrees than men superintendents. Once women have the doctoral degrees, then it seems to improve the likelihood that they will receive superintendent appointments. Once women are appointed, then it is more likely for them to stay at the position longer than men.

There are several limitations which potentially can be used as points of departure for future research that can contribute to the understanding of the sexual politics of the superintendency. First, this study would be more able to demonstrate the politics involved in the hiring of women superintendents if there were information in regards to school board member compositions. Superintendent studies (Carter & Cunningham; 1997; Glass & Franceschini, 2007; Kowalski, 2006; Kowalski et. al., 2011) discuss the working relationship with the school board as the major reason for superintendent turnover. Tallerico (2000) describes the boards as the gatekeepers for women's access to the superintendency. Hence, the number of people on the board, background information on board members, and whether a few members on the boards

are up for re-election could be possible areas that aid the explanation of the sexual

politics of hiring women superintendents in California.

Second, the salary levels that women and men superintendents receive could

add to the explanation of sexual politics theory. Information regarding superintendent

salaries involves issues that are sensitive to a superintendent's privacy and require

different methods to collect the information, such as survey or interview, which even so

still might not be able to generate complete data to add to the analysis. Given the

budget crisis that California has faced in recent years, issues related to salaries could

have influenced superintendent turnover.

Thirdly, the data is released without personal indicators. I have put the data

from different sets together by using the district codes. If there were a simple way to

identify new superintendents within the data, such as by providing birth year

information, then the study might have been able to address additional understanding

of districts' hiring practice. CBEDS collects information on the educator's birth year but

this variable is removed for privacy reasons before the data are released to the public

via Internet. Hence, this study cannot determine whether women are older than men

nor is there a clear method to identify whether there are different career paths for

women and men superintendents.

Lastly, years of education service and years in the district suffered from reporting

errors that required the use of the *California Public School Directory* to verify if the

calculation formula for new superintendents was actuate or not. According to CBEDS

Administrative Manual (CDE, 2000~2007), both variables "must be a minimum of one

year" (p.29). This study found .1% for years of education service reported as "0" and .5%

for years in the district reported as "0." These two variables were important to this

study in the calculation of whether a district has a new superintendent or not. Without

the benefit of the information for districts provided by the *California Public School*

Directory, this study would have lost cases. A possible recommendation which might

help ease the reporting error rate is to release the *California Public School Directory* at

the same time with the CBEDS data.

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Appendix A. List of the Assignment Code

1. Superintendent

0100	Superintendent
0300	superintendent/principal

2. Principal

0301	principal

3. Vice/Associate/assistant Superintendent

0102	Deputy or associate or assistant superintendent (general)

4. Vice/Associate/assistant Principal

0302	Vice/Associate/assistant Principal

5. General Administration Staff

0103	Administrative assistant (general)
0104	Admin finance/business
0105	curriculum admin
0106	Public relations/information
0107	Admin staff personnel services
0108	Admin pupil personnel services
0109	Admin program evaluation/research
0110	Staff development
0111	Admin food services
0112	Admin data processing
0113	Admin transportation
0114	Admin welfare and attendance
0115	Admin health/medical svcs (not school nurse)
0116	Admin other central office service
0117	Asst administrator/consultant
0139	Admin library/media services
0140	Admin media services
0150	Admin proficiency/competency
0151	Admin region/area
0152	Admin integration/desegregation
0153	Admin government relations/legal services
0156	Admin union representative

6. Program Administration Staff

0118	Admin school improvement
0119	Admin bilingual education
0120	Admin vocational education
0121	Admin homemaking education
0122	Admin compensatory education
0124	Admin special education
0125	Admin federal/state-funded programs (general)
0126	Admin other program

0128	Admin elementary
0129	Admin reading/language arts
0130	Admin foreign languages
0131	Admin mathematics
0132	Admin science
0133	Admin social sciences
0134	Admin art/music
0135	Admin health
0136	Admin athletics
0137	Admin other subject area
0138	Asst admin/consultant program/subject area
0141	Admin driver training
0142	Admin environmental education
0143	Admin instructional television
0144	Admin continuation education
0145	Admin year-round schools
0146	Admin summer schools
0147	Admin alternative education
0148	Admin independent study
0149	Admin physical education
0154	Admin work experience education
0155	Admin secondary
0157	Admin gifted and talented
0158	Admin technology coordinator
0159	Admin activities director
0171	Admin Community day
0199	Admin advanced placement

7. Student Support Staff

0200	Counselor (elementary)
0201	Counselor (secondary)
0202	Psychologist
0203	Psychometrics
0204	Librarian/library media teacher
0205	Social worker
0206	Nurse
0207	Speech/language/hearing specialist
0209	Other medical professional

8. Special Education Staff

0208	Special education resource specialist
0211	Special Ed speech pathology/therapy/hearing
0212	Special Ed audiology
0213	Special Ed physical therapy
0214	Special Ed vision therapy

0215	Special Ed guidance counselor
0216	Special Ed psychologist
0217	Special Ed parent counseling/training
0218	Special Ed nurse
0219	Special Ed social worker
0220	Special Ed recreation therapy
0221	Special Ed diagnostic staff
0222	Special Ed work study coordinator
0223	Special Ed occupational therapist
0224	Special Ed program specialist
0225	Special Ed mobility instruction
0228	Special Ed other non-instructional staff

Appendix B. Percentages of Women and Men Superintendents, 2000 to 2008

Year	Superintendent's Sex	
	Women	Men
2000	17.0%	83.0%
2001	29.7%	70.3%
2002	26.3%	73.7%
2003	24.6%	75.4%
2004	26.0%	74.0%
2005	32.0%	68.0%
2006	31.9%	68.1%
2007	26.4%	73.6%
2008	31.7%	68.3%
Total	27.5%	72.5%

Appendix C. API Scores Mean for Women and Men Superintendents

	Min	Max	Mean	SD	N
Women	430.04	956.12	752.79	98.11	456
Men	400.43	960.30	706.67	92.18	1207
Total	400.43	960.30	711.91	94.20	1663

Appendix D. Mean Years of Educational Services for Women and Men Superintendents

	Mean	SD	N
Women	26.36	10.23	464
Men	28.29	10.59	1222
Total	27.76	10.52	1686

Appendix E. Percentages of Women and Men Educational Level

Degree	Women	Men
Doctoral	46.8%	39.9%
Masters degree plus 30 or more semester hours	28.4%	33.8%
Masters	19.2%	20.2%
Bachelors and Less than Bachelors	5.6%	6.1%
Total	464	1222

Appendix F. Percentages of Women and Men Superintendents' Districts Locations

District Locale	Women	Men
Large suburb	35.3%	25.3%
Mid-size/small suburbs	10.3%	14.2%
Large city	7.1%	5.5%
Mid-size/small city	9.9%	12.1%
Rural distant	17.7%	18.9%
Rural fringe/remote	15.5%	18.3%
Town	4.1%	5.2%
Not Reported	.0%	.5%
Total	464	1222

Appendix G. Superintendent's Ethnicity Percentage

	White	Non-White	Total
Women	85.3%	14.7%	464
Men	84.7%	15.3%	1222
Total	1431	255	1686