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

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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
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, $\chi^2 (1) = 1120.361, p = .000 < .05$, 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 Björk, 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...
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 (Björk & 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 (Björk et al., 2005, p. 32; Dana & Bourisaw, 2006; Glass et al., 2000; Glass & Franceschini, 2005). These studies suggest that the public school
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 (Björk 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
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 identified 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 superintendents, 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, Björk 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 & Björk, 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.
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, Björk, & 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 (Björk & 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 Arts. 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 its 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.

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<tr>
<td>ELL</td>
<td>Percent of students who are ELL</td>
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<td>Average parent educational level</td>
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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

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

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:

\[
\text{Personal ID} = \text{sex} \times 100,000 + \text{ethnicity} \times 10,000 + \text{years of teaching} \times 1000 + \text{years in the district}
\]

\[
\text{Professional ID} = \text{status} \times 100 + \text{fully credential} \times 10 + \text{educational level}
\]
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 $1 = \text{Not New}$.
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>159</td>
</tr>
<tr>
<td>2001</td>
<td>176</td>
</tr>
<tr>
<td>2002</td>
<td>190</td>
</tr>
<tr>
<td>2003</td>
<td>200</td>
</tr>
<tr>
<td>2004</td>
<td>181</td>
</tr>
<tr>
<td>2005</td>
<td>195</td>
</tr>
<tr>
<td>2006</td>
<td>226</td>
</tr>
<tr>
<td>2007</td>
<td>182</td>
</tr>
<tr>
<td>2008</td>
<td>181</td>
</tr>
</tbody>
</table>

**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

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

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>46.8%</td>
<td></td>
</tr>
<tr>
<td>Masters degree plus 30 or more</td>
<td>39.9%</td>
<td>88.4%</td>
</tr>
<tr>
<td>semester hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>19.2%</td>
<td></td>
</tr>
<tr>
<td>Bachelors and less than Bachelors</td>
<td>6.6%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>
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 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...
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.

\(^1\) CDE’s CBEDS of 1985
Table 4.1 Superintendent's Sex Before Turnover Predicts Next Superintendent's Sex

<table>
<thead>
<tr>
<th>Variable</th>
<th>Turnover Women</th>
<th>Turnover Men</th>
<th>Total</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Turnover-Women</td>
<td>393</td>
<td>54</td>
<td>447</td>
<td>1120 .361*</td>
</tr>
<tr>
<td>Before Turnover-Men</td>
<td>63</td>
<td>1148</td>
<td>1211</td>
<td>1120 .361*</td>
</tr>
<tr>
<td>Total</td>
<td>456</td>
<td>1202</td>
<td>1658</td>
<td></td>
</tr>
</tbody>
</table>

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 \( \chi^2 \) 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 \( \chi^2 \) (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).
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.
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.
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.
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.
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.
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.
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.

\(^2\) 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
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

![Graph showing mean 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 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

![Bar chart showing District API, $p = .000$.](chart.png)

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.
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 \(\text{Exp}(B)\) 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 \((\chi^2 (17) = 64.103, p = .000)\). 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 \((\chi^2 (8) = 11.885, p = .156)\), 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

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

Note: Valid N = 1629

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

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
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

<table>
<thead>
<tr>
<th>Superintendents</th>
<th>Year 0 Mean</th>
<th>SD</th>
<th>Year 1 Mean</th>
<th>SD</th>
<th>Year 2 Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>.456</td>
<td>.444</td>
<td>.416</td>
<td>.449</td>
<td>.416</td>
<td>.453</td>
<td>52</td>
</tr>
<tr>
<td>Men</td>
<td>.477</td>
<td>.441</td>
<td>.457</td>
<td>.448</td>
<td>.464</td>
<td>.445</td>
<td>152</td>
</tr>
<tr>
<td>Total</td>
<td>.472</td>
<td>.441</td>
<td>.447</td>
<td>.448</td>
<td>.452</td>
<td>.447</td>
<td>204</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>( \bar{\eta}^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Between Subjects</td>
</tr>
<tr>
<td>Sex</td>
<td>1</td>
<td>.052</td>
<td>.052</td>
<td>.331</td>
<td>.002</td>
</tr>
<tr>
<td>Error</td>
<td>202</td>
<td>31.805</td>
<td>.157</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Within Subjects</td>
</tr>
<tr>
<td>Years</td>
<td>1.603</td>
<td>.084</td>
<td>.052</td>
<td>.669</td>
<td>.003</td>
</tr>
<tr>
<td>Years*Sex</td>
<td>1.603</td>
<td>.015</td>
<td>.009</td>
<td>.121</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>323.757</td>
<td>25.258</td>
<td>.078</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Superintendent Sex</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Women</td>
<td>.581</td>
<td>.237</td>
<td>.593</td>
</tr>
<tr>
<td>Men</td>
<td>.532</td>
<td>.253</td>
<td>.532</td>
</tr>
<tr>
<td>Total</td>
<td>.545</td>
<td>.249</td>
<td>.548</td>
</tr>
</tbody>
</table>
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 three years of the superintendents’ tenure – again, regardless of the superintendent’s sex.

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

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>( \eta_p^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superintendent's Sex</td>
<td>1</td>
<td>.539</td>
<td>.539</td>
<td>11.236***</td>
<td>.012</td>
</tr>
<tr>
<td>Error</td>
<td>937</td>
<td>44.933</td>
<td>.048</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.673</td>
<td>.123</td>
<td>.074</td>
<td>3.391*</td>
<td>.004</td>
</tr>
<tr>
<td>Time*Super_Sex</td>
<td>1.673</td>
<td>.017</td>
<td>.010</td>
<td>.477</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>1567.912</td>
<td>34.119</td>
<td>.022</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Superintendent Sex</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Women</td>
<td>.513</td>
<td>.276</td>
<td>.520</td>
</tr>
<tr>
<td>Men</td>
<td>.507</td>
<td>.284</td>
<td>.498</td>
</tr>
<tr>
<td>Total</td>
<td>.509</td>
<td>.281</td>
<td>.504</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\bar{\eta}^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superintendent's Sex</td>
<td>1</td>
<td>.048</td>
<td>.048</td>
<td>.852</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>715</td>
<td>39.971</td>
<td>.056</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.864</td>
<td>.025</td>
<td>.014</td>
<td>.371</td>
<td>.001</td>
</tr>
<tr>
<td>Time*Super_Sex</td>
<td>1.864</td>
<td>.034</td>
<td>.018</td>
<td>.018</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>1332.918</td>
<td>48.611</td>
<td>.036</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Table 4.8a Descriptive Statistics of Female General Administration Staff Proportions for Three Years Following Superintendent Appointment by Superintendent Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superintendent’s Sex</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Women</td>
</tr>
<tr>
<td>Men</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>( \eta_p^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>1</td>
<td>0.080</td>
<td>0.080</td>
<td>1.254</td>
<td>0.002</td>
</tr>
<tr>
<td>Error</td>
<td>581</td>
<td>37.282</td>
<td>0.064</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years</td>
<td>1.750</td>
<td>0.079</td>
<td>0.045</td>
<td>1.359</td>
<td>0.002</td>
</tr>
<tr>
<td>Years*Sex</td>
<td>1.750</td>
<td>0.077</td>
<td>0.044</td>
<td>1.332</td>
<td>0.002</td>
</tr>
<tr>
<td>Error</td>
<td>1016.827</td>
<td>33.730</td>
<td>0.033</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Superintendent’s Sex</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Women</td>
<td>.682</td>
<td>.350</td>
<td>.697</td>
</tr>
<tr>
<td>Men</td>
<td>.697</td>
<td>.299</td>
<td>.695</td>
</tr>
<tr>
<td>Total</td>
<td>.693</td>
<td>.314</td>
<td>.695</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>( \eta_p^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>1</td>
<td>1.652E-6</td>
<td>1.652E-6</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Error</td>
<td>537</td>
<td>39.972</td>
<td>.074</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years</td>
<td>1.808</td>
<td>.012</td>
<td>.007</td>
<td>.188</td>
<td>.000</td>
</tr>
<tr>
<td>Years* Sex</td>
<td>1.808</td>
<td>.045</td>
<td>.025</td>
<td>.678</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>970.703</td>
<td>35.459</td>
<td>.037</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Superintendent’s Sex</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Women</td>
<td>.745</td>
<td>.297</td>
<td>.784</td>
</tr>
<tr>
<td>Men</td>
<td>.782</td>
<td>.269</td>
<td>.782</td>
</tr>
<tr>
<td>Total</td>
<td>.773</td>
<td>.277</td>
<td>.783</td>
</tr>
</tbody>
</table>

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 difference is shown in Table 4.10b.

**Figure 4.19**

<table>
<thead>
<tr>
<th>Estimated Proportion</th>
<th>Yr0</th>
<th>Yr1</th>
<th>Yr2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women Super</td>
<td>.767</td>
<td>.764</td>
<td>.763</td>
</tr>
<tr>
<td>Men Super</td>
<td>.785</td>
<td>.787</td>
<td>.790</td>
</tr>
</tbody>
</table>
Table 4.10b Repeated ANOVA Results of the Effects of Superintendent's Sex on Female Student Services Staff Proportion

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\bar{\eta}^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>1</td>
<td>.016</td>
<td>.016</td>
<td>.270</td>
<td>.000</td>
</tr>
<tr>
<td>Error</td>
<td>542</td>
<td>31.887</td>
<td>.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years</td>
<td>1.854</td>
<td>.182</td>
<td>.098</td>
<td>5.036*</td>
<td>.009</td>
</tr>
<tr>
<td>Years*Sex</td>
<td>1.854</td>
<td>.097</td>
<td>.052</td>
<td>2.692</td>
<td>.005</td>
</tr>
<tr>
<td>Error</td>
<td>1005.102</td>
<td>19.540</td>
<td>.019</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Huynh-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

<table>
<thead>
<tr>
<th></th>
<th>Year 0</th>
<th></th>
<th>Year 1</th>
<th></th>
<th>Year 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Women Superintendents</td>
<td>.911</td>
<td>.172</td>
<td>.905</td>
<td>.166</td>
<td>.907</td>
<td>.142</td>
</tr>
<tr>
<td>Men Superintendents</td>
<td>.897</td>
<td>.171</td>
<td>.893</td>
<td>.170</td>
<td>.899</td>
<td>.156</td>
</tr>
<tr>
<td>Total</td>
<td>.901</td>
<td>.171</td>
<td>.896</td>
<td>.169</td>
<td>.901</td>
<td>.152</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>( \eta^2_p )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superintendent’s Sex</td>
<td>1</td>
<td>.020</td>
<td>.020</td>
<td>.882</td>
<td>.001</td>
</tr>
<tr>
<td>Error</td>
<td>764</td>
<td>16.902</td>
<td>.022</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Within Subjects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1.851</td>
<td>.009</td>
<td>.005</td>
<td>.612</td>
<td>.001</td>
</tr>
<tr>
<td>Time*Super_Sex</td>
<td>1.851</td>
<td>.002</td>
<td>.001</td>
<td>.147</td>
<td>.000</td>
</tr>
<tr>
<td>Error</td>
<td>1413.885</td>
<td>11.676</td>
<td>.008</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 is 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 identified 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 steadily 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
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.
References


Callahan, R. E. (1966). The Superintendent of Schools-A Historical Analysis ED010410


(2nd ed.).


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

**7. Student Support Staff**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0200</td>
<td>Counselor (elementary)</td>
</tr>
<tr>
<td>0201</td>
<td>Counselor (secondary)</td>
</tr>
<tr>
<td>0202</td>
<td>Psychologist</td>
</tr>
<tr>
<td>0203</td>
<td>Psychometrics</td>
</tr>
<tr>
<td>0204</td>
<td>Librarian/library media teacher</td>
</tr>
<tr>
<td>0205</td>
<td>Social worker</td>
</tr>
<tr>
<td>0206</td>
<td>Nurse</td>
</tr>
<tr>
<td>0207</td>
<td>Speech/language/hearing specialist</td>
</tr>
<tr>
<td>0209</td>
<td>Other medical professional</td>
</tr>
</tbody>
</table>

**8. Special Education Staff**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0208</td>
<td>Special education resource specialist</td>
</tr>
<tr>
<td>0211</td>
<td>Special Ed speech pathology/therapy/hearing</td>
</tr>
<tr>
<td>0212</td>
<td>Special Ed audiology</td>
</tr>
<tr>
<td>0213</td>
<td>Special Ed physical therapy</td>
</tr>
<tr>
<td>0214</td>
<td>Special Ed vision therapy</td>
</tr>
<tr>
<td>Code</td>
<td>Position</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>0215</td>
<td>Special Ed guidance counselor</td>
</tr>
<tr>
<td>0216</td>
<td>Special Ed psychologist</td>
</tr>
<tr>
<td>0217</td>
<td>Special Ed parent counseling/training</td>
</tr>
<tr>
<td>0218</td>
<td>Special Ed nurse</td>
</tr>
<tr>
<td>0219</td>
<td>Special Ed social worker</td>
</tr>
<tr>
<td>0220</td>
<td>Special Ed recreation therapy</td>
</tr>
<tr>
<td>0221</td>
<td>Special Ed diagnostic staff</td>
</tr>
<tr>
<td>0222</td>
<td>Special Ed work study coordinator</td>
</tr>
<tr>
<td>0223</td>
<td>Special Ed occupational therapist</td>
</tr>
<tr>
<td>0224</td>
<td>Special Ed program specialist</td>
</tr>
<tr>
<td>0225</td>
<td>Special Ed mobility instruction</td>
</tr>
<tr>
<td>0228</td>
<td>Special Ed other non-instructional staff</td>
</tr>
</tbody>
</table>
## Appendix B. Percentages of Women and Men Superintendents, 2000 to 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>17.0%</td>
<td>83.0%</td>
</tr>
<tr>
<td>2001</td>
<td>29.7%</td>
<td>70.3%</td>
</tr>
<tr>
<td>2002</td>
<td>26.3%</td>
<td>73.7%</td>
</tr>
<tr>
<td>2003</td>
<td>24.6%</td>
<td>75.4%</td>
</tr>
<tr>
<td>2004</td>
<td>26.0%</td>
<td>74.0%</td>
</tr>
<tr>
<td>2005</td>
<td>32.0%</td>
<td>68.0%</td>
</tr>
<tr>
<td>2006</td>
<td>31.9%</td>
<td>68.1%</td>
</tr>
<tr>
<td>2007</td>
<td>26.4%</td>
<td>73.6%</td>
</tr>
<tr>
<td>2008</td>
<td>31.7%</td>
<td>68.3%</td>
</tr>
<tr>
<td>Total</td>
<td>27.5%</td>
<td>72.5%</td>
</tr>
</tbody>
</table>
## Appendix C. API Scores Mean for Women and Men Superintendents

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>430.04</td>
<td>956.12</td>
<td>752.79</td>
<td>98.11</td>
<td>456</td>
</tr>
<tr>
<td>Men</td>
<td>400.43</td>
<td>960.30</td>
<td>706.67</td>
<td>92.18</td>
<td>1207</td>
</tr>
<tr>
<td>Total</td>
<td>400.43</td>
<td>960.30</td>
<td>711.91</td>
<td>94.20</td>
<td>1663</td>
</tr>
</tbody>
</table>
# Appendix D. Mean Years of Educational Services for Women and Men Superintendents

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>26.36</td>
<td>10.23</td>
<td>464</td>
</tr>
<tr>
<td>Men</td>
<td>28.29</td>
<td>10.59</td>
<td>1222</td>
</tr>
<tr>
<td>Total</td>
<td>27.76</td>
<td>10.52</td>
<td>1686</td>
</tr>
</tbody>
</table>
### Appendix E. Percentages of Women and Men Educational Level

<table>
<thead>
<tr>
<th>Degree</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>46.8%</td>
<td>39.9%</td>
</tr>
<tr>
<td>Masters degree plus 30 or more semester hours</td>
<td>28.4%</td>
<td>33.8%</td>
</tr>
<tr>
<td>Masters</td>
<td>19.2%</td>
<td>20.2%</td>
</tr>
<tr>
<td>Bachelors and Less than Bachelors</td>
<td>5.6%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Total</td>
<td>464</td>
<td>1222</td>
</tr>
</tbody>
</table>
Appendix F. Percentages of Women and Men Superintendents' Districts Locations

<table>
<thead>
<tr>
<th>District Locale</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large suburb</td>
<td>35.3%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Mid-size/small suburbs</td>
<td>10.3%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Large city</td>
<td>7.1%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Mid-size/small city</td>
<td>9.9%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Rural distant</td>
<td>17.7%</td>
<td>18.9%</td>
</tr>
<tr>
<td>Rural fringe/remote</td>
<td>15.5%</td>
<td>18.3%</td>
</tr>
<tr>
<td>Town</td>
<td>4.1%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Not Reported</td>
<td>.0%</td>
<td>.5%</td>
</tr>
<tr>
<td>Total</td>
<td>464</td>
<td>1222</td>
</tr>
</tbody>
</table>
### Appendix G. Superintendent's Ethnicity Percentage

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Non-White</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>85.3%</td>
<td>14.7%</td>
<td>464</td>
</tr>
<tr>
<td>Men</td>
<td>84.7%</td>
<td>15.3%</td>
<td>1222</td>
</tr>
<tr>
<td>Total</td>
<td>1431</td>
<td>255</td>
<td>1686</td>
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