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Analysis of the Status of Women Faculty in the United States Since the Enactment of Equality Legislation in the 1970s: What do the Numbers Suggest?

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Analysis of the Status of Women Faculty in the United States Since the Enactment of Equality Legislation in the 1970s: What do the Numbers Suggest?

A dissertation submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy in Public Policy and Administration at Virginia Commonwealth University

By

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ABSTRACT

ANALYSIS OF THE STATUS OF WOMEN FACULTY IN THE UNITED STATES SINCE THE ENACTMENT OF EQUALITY LEGISLATION IN THE 1970s: WHAT DO THE NUMBERS SUGGEST?

By Annie M. Stith-Willis, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University. Virginia Commonwealth University, 1999

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The primary research question is: What changes have occurred in the status of women faculty members in higher education in the United States from 1974 to 1995. Status is determined by evaluating differences by sex in: the number of faculty, the tenure status, the average salary, the average salary by faculty rank, the percent of faculty to percent of earned doctoral degrees, and the percent of faculty to percent of enrolled students in higher education. The period since the enactment of equality legislation in the 1970s in the United States provides a time frame for this research. The ongoing legislative changes that occurred coincide with an increase in the presence of women faculty in higher education. These legislative changes redefined the role of women in the general work place and specifically in higher education.

This research used secondary data to evaluate the status of women faculty over this time period. The data were collected from many published and unpublished Department of Education documents and several

unpublished Equal Employment Opportunity Commission documents. Other federal government resources were used to verify the consistency over time of these reported data observations. The data were analyzed by determining percentage changes, plotting the data, and using linear regression when appropriate to determine if over time (1974-1995) the status of women faculty members in the United States have improved. The compilation of the data in one source provides a research source for future researchers.

The data analysis for the time period 1974-1995 resulted in these general conclusions. a) The percent of female faculty to total faculty increased 10.9 percent. b) Female faculty salary as a percent of all faculty salary was 86.23 percent in1974 and 86.94 percent in 1995. Average salary compensation for female faculty as a percent of average compensation for all faculty members did not improve over this time period. c) The average salary for female faculty as a percent of average salary for all faculty members experienced a decrease or showed a minimal increase over the time period 1974-1995 at each of the following ranks: assistant professor (96.7 percent to 96.6 percent), associate professor (95.9 percent to 95.5 percent), and full professor (89.4 percent to 90.4 percent). The average salary for female faculty at the rank of instructor as a percent of average salary for all faculty members increased over this time period from 92.5 percent in 1974 to 98.7 percent in 1995. d) The percent of women faculty with tenure increased (41 percent to 51 percent), but the percent of male faculty with tenure increased more (58.2 percent to 71.8 percent) over the 22-year time period 1974 - 1995.

e) The increase in the percent of female doctoral recipients (21.3 percent in 1974 to 38.8 percent in 1995) exceeded the increase in the percent of female faculty members (23.7 percent in 1974 to 34.6 percent in 1995) for each year after 1977. f) The percent of enrolled female students (45 percent in 1974 to 55.5 percent in 1995) continued to exceed the percent of female faculty members (23.7 percent in 1974 to 34.6 percent in 1995) for each year over this time period. The overall increase in the percent of female faculty members (10.9 percent) slightly exceeded the increase in the percent of enrolled female students (10.3 percent).

Based on the criteria defined to determine if the status of women faculty have changed in the United States over the time period 1974 to 1995, this research concludes that moderate changes have occurred in the number of female faculty and the pool for female faculty. Overall female faculty as a group are paid less then male faculty. When compared to male faculty, fewer women proportionally have tenure, women are proportionally in lower rank positions, and fewer women with doctoral degrees proportionally are employed in faculty positions.

Research to monitor the status of women faculty should be ongoing. Knowledge of sex-based inequities in education must be shared and publicized to make administrators, politicians, and women faculty conscious of these conditions.

Chapter I

Introduction

> Projected faculty shortages, increased attrition and retirements, and commitments to enhancing diversity in the face of shrinking candidate pools have combined to lend urgency to recruiting and retaining women and minority faculty. ... Affirmative action may (arguably) help to bring more women and minorities into the academy; but only faculty and administrators already in the academy can provide the resources, information, and support that will make these newcomers an integral part of institutional life (Gainen and Boice. 1993, pp.1-2).

In the United States the 1960s gave birth to a legislative agenda that focused on Civil Rights and women's liberation. Equal employment opportunity and the prohibition of discrimination in public funded education institutions were two of the outcomes of this agenda. The cultural perception of the role of women in education and the workplace changed significantly between the late 1950s and 1990s. In 1964 the Civil Rights Act outlawed sex discrimination in many areas of education and employment. In the late 1960s there was a rebirth of the dormant women's movement. Since 1960 several pieces of legislation have been enacted in an effort to guarantee women in the United States previously denied opportunities in the workplace and in federal institutions of higher education (Barber, 1995, p.220; Stromquist, 1993, pp. 379- 380; VaderWaerdt, 1982, pp. 79-81; Touchton, 1991; Coats, 1994). The legislative changes that occurred between the 1960s and 1990s, relating to the roles of women, coincide with an increase in the presence of women faculty members in higher education. The focus of this research is the subsequent changes that have occurred in the

status of women faculty in higher education following the enactment of several key pieces of legislation. The enacted legislation provides a time frame that this research used to evaluate aggregated data on the status of women faculty. The time frame examined is 1974 to 1995. The benchmark year 1974 allows the use of data collected prior to the enactment of key legislation that addressed the continued existence of inequities towards women faculty in higher education. This research does not imply that the two (legislative intervention and any increase in the status of women faculty) are causally linked but it suggests a possible relationship.

Key pieces of legislation that impact women and work, and women and education, are listed and briefly explained in the literature review in Chapter II. Each of these legislative changes provided opportunities and improved conditions for women in the workplace and on college campuses throughout the United States. Society, through its political representatives, acknowledged these inequities and demanded policies specifically aimed at addressing previously identified transgressions against women in the workplace. This workplace legislation demanded structural changes to achieve the following: (a) equal pay for equal work regardless of sex of the employee; (b) equal opportunity for job placement in any federally assisted organization; and (c) increased employment opportunities for minorities and women by the use of affirmative action (Stromquist,1993, p.380).

For the purpose of this research, 'faculty', refers to all full-time

instructional faculty employed at all institutions of higher education. The word 'status' is defined as the position or condition of female faculty in relation to that of male faculty. Status is determined by evaluating differences by sex in:

(a) the number and percent of faculty

(b) the tenure status of faculty

(c) the average salary of faculty

(d) the average salary by rank (instructor, assistant professor, associate professor, or full professor) of faculty

(e) the percent of faculty compared to percent of earned doctoral degrees and

(f) the percent of faculty compared to percent of enrolled students in higher education.

This research evaluates the current status of women instructional faculty working in higher education institutions within the United States. The primary research question is: **What changes have occurred in the status of women faculty members in higher education in the United States from 1974 to 1995?**

Research Purpose

The purpose of this research is not exclusively an evaluation of the effectiveness of the legislation that was enacted. Rather, it recognizes that the enacted legislation served as one catalyst for changes in the hiring and admissions policies on college campuses after the early 1970's. This research analyzes specific published numerical data from the Department of Education and other federal agencies in an effort to measure what changes have occurred in the status of women faculty since that time.

Although current numerical data suggest that female faculty members are not on par with their male counterparts in earned salary, tenure status, and promotion at all levels in the United States, this does not acknowledge any positive changes that have occurred in these areas (NCES. Digest of Education Statistics, 1997). The objective of this study is to identify what changes (positive or negative) have been made from 1974 to 1995 in these areas: salary, tenure status, and the percent of women faculty members employed in higher education institutions. Any changes that have occurred in the female faculty population are compared to changes made in the total faculty population over an equivalent time period.

Research Background and Theoretical Implications

In the United States, until the late 1960s, most of the educators and students in institutions of higher education were white males. Women faculty

members and students were categorized as minorities in most of these institutions until the middle 1970's. Today there is a visible multicultural student body and the trend in higher education is to promote diversity as part of the educational process. The increased diversity of the student body might lead us to assume that these institutions have experienced a corresponding trend among their faculty. While the overall numbers of women and minority faculty members have increased, the literature suggests that these gains have not mirrored the rise in the number of women and minority students enrolled in and graduating from institutions of higher education. (Academe, 1998; Johnrud, 1993 in Gainen and Boice (Eds.), 1993, p.1)

Pervasive throughout the literature is the notion that historically white men have enjoyed an advantaged career path into and throughout the academy. In the past, women and minorities, in their quest to enjoy financial, economic, employment, and educational opportunities equivalent to those enjoyed by white males, have relied on legislative interventions and social consciousness to eradicate injustices. Undeniably, the impact of the aforementioned legislation was felt throughout all segments of the workplace and within institutions of higher education, and resulted in an increase in options for women. Women's sex-based inequitable treatment was formally acknowledged and past negative experiences in education were openly addressed. Legally, women could no longer be denied entry into institutions because of their sex whether they were students, support staff, administrators, or faculty (Stromquist, 1993, p.379-380).

The need for and enactment of these legislative changes legalized women's rights to be treated fairly (equivalent to that enjoyed by white males) in their pursuit of employment and educational opportunities. Messick and Sentis (1983) suggest that equality lay at the heart of fairness. They argued that the issue was not the merit of equality, but rather one of gauging what dimension of equality should be established. Some of the more important types of equality they identified are equality of outcome, equality of outcome per unit of input (equity), equal access to economic excess, procedural equality, and equality of opportunity (Messick and Sentis, in Messick and Cook (Eds.), 1983 p.68).

This research project employs Equal Opportunity Theory to structure its theoretical framework. Equal Opportunity Theory is based on the assumptions that the average person wants and expects a fair chance for self-determination in life. It relies on the belief and acceptance that regardless of perceived differences (i.e. sex, racial, ethnic, etc.) everyone should have the chance to succeed (Mithaug, 1996, pp.11-12). These values correspond with the desired objectives of the employment legislation of the 1970's.

The five axioms underlying the Theory of Equal Opportunity, as defined by Mithaug (1996), and their relevance to this research are listed and discussed below. This theory is based on the precept that opportunity should be equal for all individuals regardless of perceived limitations (i.e. due to sex, race, age, or ethnicity). This research interprets this to imply that limits imposed on an individual's ability to achieve cannot be arbitrarily assigned because of perceived

gender based or sex-related differences. Early in United States history women were denied entry into academia as students and faculty. The opportunity to achieve as students and faculty members was not available to them. Equal Opportunity theory provides a framework for evaluating the status of women faculty in higher education. The principles suggest explanations for the inequities found among various populations in any social organization. Within academe, it provides an historical lens for understanding past discrimination and under-representation of specific groups.

Equal Opportunity Theory

1. **All individuals have the right to self–determination (Mithaug, 1996).**

Self-determination implies that all individuals have the right to cause, affect, or control the outcome in a decision that directly impacts them. This implies that if a person decides to enroll in a higher education program or pursue a career as a faculty member his or her ability to succeed should be determined without bias by the decisions that he or she makes. Factors that do not affect a person's ability to perform the requirements of a profession should not be barriers for entry into or advancement in a profession. Factors that should not affect an individual's ability to succeed include the sex of the individual, existing organization hierarchy, past practices, and institutionalized biases.

The national data suggest that although there has been an increase in the

aggregate number of women in faculty positions, women are primarily represented in instructional or lower ranked positions. Recent Department of Education data suggest female faculty members in comparison to male faculty members are less likely to be tenured or full professors (N.C.E.S. Digest of Education Statistics, 1997). In 1992, 60 percent of female faculty at institutions with tenure systems were in non-tenure track positions, while 42 percent of male faculty were in equivalent non-tenure positions. This was true in every age category for the year 1992. Among full-time faculty, women were almost twice as likely to be employed in faculty positions that were identified as non-tenure track. Fewer women faculty members tended to be employed at research academic institutions or in male dominated disciplines (Digest of Education Statistics, 1997; U.S. Department of Education, 1993). Male dominated disciplines are defined as academic areas where 65 percent or more of the population (students or faculty) were male (Clery, Lee, and Knapp.1998, p.48).

This research examines the data on the percentage change in tenure status by sex to evaluate what changes have occurred among women faculty when compared to male faculty since 1974 to determine if the outcomes are sex neutral. If the individual faculty member causes, affects, and controls the choices used in determining the outcome in his or her promotion decisions, the sex of the individual should not affect the assessment of these choices. An increase in the proportion of female faculty should result in an increase in the proportion of tenured female faculty over time.

2. **All 'societies' have some individuals who lack the capacity to self-determine (Mithaug, 1996).**

Structural boundaries can impede or incapacitate the ability of an individual to achieve a desired outcome. Historically, it was believed that women lacked the capacity to achieve in the academy. Capacity in this research refers to size (in number), potential, and position. Mithaug writes that personal capacity is synonymous with personal power (Mithaug ,1996, p.88). Societal perceptions and structural boundaries restricted and hindered women's educational opportunities. Women, as a group, were perceived as lacking the ability to achieve in higher education.

Within any society some individuals (men and women) do not possess the skills, characteristics or abilities to cause, affect, or control decisions that directly impact their lives. Prior to the passing of equality legislation women and minorities in the United States did not share many of the opportunities in higher education enjoyed by white males because they were not male and they were not white. Plotting the data and identifying patterns to account for time required and the experiences needed to achieve desired outcomes of tenure and promotion for faculty members are incorporated in the data analysis to determine if the ability of a faculty member to achieve tenure was sex neutral.

3. All 'societies' generate unequal opportunities to self-determine (Mithaug, 1996).

Unequal opportunities exist that may inhibit an individual's ability to cause, affect, or control personal outcomes. The literature reveals that women and minority faculty experience the academy differently than male faculty. Feelings of isolation, loneliness, and a lack of commonality are documented perceptions of women and minorities when discussing the academic environment (Johnrud, 1993, p.2). Women and minority faculty report feeling isolated in many instances in the tasks they are required too perform, the places they teach, and the rank they hold. Women are represented in smaller numbers in top research institutions and in the higher ranks of full or associate professor (Cyr and Reich, 1996; Fox, 1989, p.227). The literature documents many cases where women described their initial experiences in traditionally male careers as hostile and difficult (Johnrud, 1993, p.8-13). In this environment the ability to self-determine for women faculty might be hindered by a delay or a denial in the awards and opportunities received because of sex. Given that the 'society' in this research is faculty in higher education, this theory suggests that biases may be inherent in the criteria and decision making process that determines how individual faculty decisions affect career outcomes. Determining whether this bias is sex neutral is one of the objectives of this research.

4. **Consequently, some individuals do not experience the right to self-determine because they lack the capacity and opportunity to do so (Mithaug, 1996).**

Prior to 1970, women faculty when compared to male faculty did not enjoy equal opportunity to self-determine or achieve their goals in academia. Structural barriers were identified and legislative changes requiring changes by institutions to allow access to these positions were enacted. Some of these structural barriers have now been removed. An examination of the current status of women faculty allows an evaluation of changes in their capacity compared to male faculty.

5. **Therefore, all societies should optimize prospects for self-determination among these least advantaged members by increasing their capacity and improving their opportunity to self-determine (Mithaug, 1996).**

In the United States women and other minorities have been identified as groups with members who were historically restricted from achieving self-determination. Consequently, society's quest to attain optimum prospects for all members resulted in the enactment of equality legislation to increase their capacity to reach this goal. Structural barriers that inhibit the opportunity for a group or an individual to succeed violate the precept that equal opportunity for self-determination for all citizens exists within any given society. Legislative

intervention is one way to change this. The 'society' this research focuses upon is the faculty within institutions of higher education. The group of interest within this society is women faculty. Evaluating the changes in the status of women faculty since 1974 provides information that can be used as one measurement of the effectiveness of the enacted legislation for this group.

Justification for the Research

Generally, the legislative changes enacted after 1970 were expected to increase the visibility and the stature of women faculties on college campuses. The literature suggests that women faculty members continue to be disproportionately denied access to opportunities in academe, resulting in the inability of the members of this group to self-determine. This research use numerical data to determine if the stature of women faculty have improved. Based on the data analysis, one can infer if the propositions defining equal opportunity theory have become a significant part of the society defined as higher education faculty.

Factors impacting the ability of women faculties to experience career success in higher education have been identified in the literature. These factors can be categorized as institutionalized behaviors, socialization practices, or sex specific practices. (Neumann, 1997; Dubeck, 1996; McClelland, 1992; Stringer, 1982) An examination of accepted past behaviors and practices within the workplace, higher education institutions, and society add definition and

significance to the numerical data. This is done in Chapter II as part of the literature review.

Research Contributions

This research serves as an instrument that could be used by any of the agents of government (i.e. federal, state, local, universities, colleges, agencies, and individual) to evaluate the status of women faculty members. The assessment of changes that have been made since the early 1970's regarding the status of women faculty members on college campuses help educate these agents in regard to how effective current policies have been in the hiring and promotion of women. This research examines data from 1974 to 1995 to help explain what changes have occurred in the following relationships:

(a) number and percent of faculty by sex,

(b) average salary of faculty by sex,

(c) average salary of faculty by rank and by sex,

(d) tenure status of faculty by sex,

(e) percent of faculty by sex versus percent of doctoral graduates by sex, and

(f) percent of faculty by sex versus percent of student enrollment by sex.

Information received from the examination of plots from the data and results of the regression analysis may provide information to those who monitor changes in the status of women faculty within higher education.

Chapter II

Literature Review

Increasingly today women have a place in higher education. The socialization of women in the United States and their subsequent experiences have led women to speak in a different `voice' and this voice gives a different perspective to the learning process that should be part of academia (Johnrud, 1993 pp.3-7; Nodding, 1984).

Women faculty members are more than role models: they provide a different point of view and approach to traditional research. They influence the teaching process by incorporating their unique life experiences; they change the culture of the classroom by neutralizing the historically male language and focus; and they add to the diversity of the overall educational experience. Women's knowledge, experiences, and sense of morality have not been an integral part of the traditional higher education experience in the United States. Knowledge gained in the study of women's education can be valuable as the society, in and out of the academy becomes increasingly diverse (McClelland, 1992, p.173). Understanding how and why women's experiences in the workplace, in society, and in the classroom differed from those experienced by white males lends credence and an arguable defense for the justification for the reviewed literature.

The literature review is divided into four distinct areas. Each area provides both historical and background information on women and their experiences in the United States. The first section examines the literature to provide information on women and their work experiences in the United States. This is followed with a review of the literature documenting the educational experiences of women in the United States. The first two sections review these experiences from colonial time to 1970. The decision was made to examine the literature in this time frame so that documented attitudes governing the choices and the opportunities made available to women when this country was established could be referenced and used to explain why intervention to correct practiced inequities against women were needed. These attitudes and practices shaped the society within the academy that women faculty members must succeed in today. The review of this literature also provides a historical explanation for women's acceptance of institutionalized practices that did not promote equity or equal opportunity for them.

The third section examines some of the legislation that sought to improve the conditions and opportunities for women in the workplace and in higher education. A brief statement is given to explain the intended impact of these legislative changes on the status of women. The fourth section is a review of the literature on women and their developing role as educators in the United States. Each section was selected to provide a clear picture of historical and sometimes adverse experiences women endured in the United States to become viable

contributors to the academy and the general workplace.

Section 1: The Work Experience for Women: A Historical Summary

Throughout history women have contributed to the growth and development of the United States. From our early colonial state to the technological state that exists today women have been an integral part of the economic development of this country. Traditionally there are three kinds of economically productive work. They are first, the home-based production of goods for personal consumption; second, the home-based production of goods for sale or exchange on the market; and third, the production of goods and services outside of the home for pay (Blau F., in Stromberg and Harkess (Eds), p.29). Work in the pre-industrial economy (17th and early 18th century) of the American Colonial period was frequently allocated on the basis of sex. The work of women was essential to survival of the community. Women worked inside and outside of the home to provide food and shelter for their families. Inside the home women spun thread, wove cloth, made lace, soap, shoes, candles, linen, and preserved food. Outside the home some women worked as store managers, traders, speculators, printers, publishers, domestic servants, seamstresses, and tailors (Blau and Winkler, 1989, pp.265-267; Marshall and Paulin, 1987, pp. 2-5).

Women's work outside of the home was not synonymous with economic

or political power. There is no disagreement with the assertion that women added to the economic stability of their families, although society viewed women as an extension of first their fathers, then after marriage, their husbands. The following quote summarized women's position.

> A woman ceased to exist if she married, for she and her spouse became one flesh and the flesh was his. .... He had exclusive rights to any property she might have owned as a single woman, to her dower, and to any wages and property that might come to her while she was his wife. In short, like slave or servant women, married women whether rich or poor were legal non-entities. (Philip Foner (1979) quoted by Marshall and Paulin, 1987, p.3)

Both legally and politically women were denied full participation in the communities in which they lived. A woman's destiny was determined in large measure by men, whether it was her husband, her father, or the political fathers. Quoting Julie Mathaei, Marshall and Paulin (1987) wrote " Unlike her husband, a woman did not exist as an individual in the public sphere. ... A wife's involvement was qualitatively different ...he worked as a property owner and family head ... she as a homemaker, in order to aid her family." Women worked not for their own self-advancement in the larger community, but rather for the self-sufficiency of the family. He worked from a position of power and she worked from a position of subordination (Marshall and Paulin, 1987, p.4).

Colonial women who worked outside of the home were usually married or widowed with small children. Some worked in businesses left by their husbands

or fathers. These women lived in a primarily white northern culture and they lived in the towns or major cities. The majority of women who were not married i.e., single, divorced, or widowed women with no children; were employed as domestic servants. Other women would take in boarders, set up taverns, or establish Dame Schools to earn money. Some women contracted to sell excess spinning and weaving to shop owners after the needs of their families were met. America's first factories were borne from this practice. Shop owners in an effort to keep up with demand for these products began to hire women to make these materials. They set up one-room work environments, equipped with several spinning wheels and looms, then hired young women and children to produce the yarns that were sold in the local shops (Blau and Winkler, 1989, pp.265-267; Marshall and Paulin, 1987, pp. 2-5).

The first machine powered textile factory was established in 1789 in Rhode Island. By the year 1800, fifteen mills were established in New England for the carding and spinning of yarn. In 1814 the power loom was introduced and the entire process of cloth manufacturing could be done in the new factories. As the new manufacturing industry continued to grow, young women and children constituted the bulk of the new industrial work force. This was predominantly due to an agriculturally rich economy that was flourishing during this time. Farmers toiled in the fields and women supplemented their household income with meager factory wages. Attitudes toward women in the work place were not adversarial. One reason for the lack of adversity was that these were not

considered new occupations for women; instead they were viewed as 'traditional occupations' that they were just doing outside of the home. Also, women and children were the only readily available labor source for the manufacturing industry (Stromberg and Harkess (Eds.), 1978, p.32-33).

Work by these white farm girls in the New England cotton mills was primarily voluntary but this was not the case for black slaves in the south (McClelland, 1992, p.80). Black women worked on farms as both domestic house slaves, and field hands, often both at the same time. Others worked in Southern cotton mills and textile mills. Free black women, in both North and South, worked to supplement the low pay of their husbands. In the North most worked as domestic servants, because most industries did not allow them to work (McClelland, 1992, p.80).

A shift from an agricultural economy in the late 1800s' changed the participation rate for men in the growing manufacturing industry. As men left the land and moved into the towns and cities, jobs previously held by women and children were given to them. As primary wage earners the men commanded higher salaries than did the displaced women workers. The patriarchal view that women's wages were supplemental income became the justification for the disparity in wages (Blau and Ferber, 1987, pp.37-42; Blau and Winkler, 1989, p.266).

Since women provided the workforce for these industries when they were

established, it was difficult for many of them to return to the status of homemaker. Education became a viable option for many of the young women as demands for teachers for grade school and high school increased dramatically. Public education for all children became available during this time. The acceptance of women by society as educators in the public schools directly impacted the number of women that were educated in other areas of expertise. Once education became accessible there were always women who were willing to pave the way in non-traditional occupations and disciplines. The demand for teacher education opened the doors to many other areas previously denied to women because of their sex. The entrance of women into the field of education allowed them to qualify for jobs that could support them for a few years beyond basic education. The population for women tripled during this time and the labor force participation rate for women doubled during this 70 year period. During the Civil War, women entered the manufacturing industry in great numbers. Women proved that they could do the jobs that many of them would not have been hired for prior to the war. But many of these gains were lost as men returned from war seeking sources of employment. (Fox, 1989, pp. 217-220; Marshall and Paulin, 1987, pp.7-9).

Occupational segregation by sex and race was prevalent in the late 1800s. In 1870, 88 percent of all employed women were in only ten occupations. In 1900, 90.2 percent of all employed women were in 25 of 252 categorized occupations and in 1940, 86.7 percent of all employed women were located in

25 of all categorized occupations (Marshall and Paulin, 1987, pp.9-10). Prior to the Civil War, there were few blacks in manufacturing and mechanical pursuits. Until 1910, 95 percent of all black women continued to work in agriculture and in domestic and personal service. Until World War I, the only manufacturing industry willing to employ large numbers of black women was the cigar and cigarette industry (Marshall and Paulin, 1987, p.9).

During World War I all women made temporary advances in other industrial occupations. White women moved into higher level jobs within the textile industry and black women filtered into lower level positions in industries previously denied to them. Minimal gains were retained after the war by women but greater than this was the immeasurable gains in self-worth and self-value that they received. These women proved to themselves and to industry leaders that they could be a viable part of the workforce and that they could succeed in positions previously denied to them because of their sex or the color of their skin (Marshall and Paulin,1987, pp.9-17).

Wage segregation by sex and race was an extension of the social practices pervasive within everyday life. Employers implemented wage differentials based on sex and race and justified these differences by citing societal views and practices toward these groups. Women and blacks did not share the rights and privileges of white males. Employers felt that they were justified in adopting and continuing their practice of exploiting the social

conditions of women and blacks by paying them low wages (Koziara, 1987).

Section 2: The Education Experiences of Women: a Historical Summary

The formal education experiences of women were non-existent in the United States until the middle 1700's. Prior to this time, education was perceived to be a liability for women but an asset for their male counterparts. The journey to gain educational opportunity in this country was tumultuous and frustrating for the women who acted as trailblazers by paving the way for the educational opportunities enjoyed by women today. This portion of the literature review details some of the adversities and triumphs that women experienced during this journey.

> It is very certain, that a well-informed woman, conscious of her nature and dignity, is more capable of performing the relative duties of life, and of engaging and retaining the affections of a man of understanding, than one whose intellectual endowments rise not above the common level (Abigal Adams, 1814 as printed in Boas, 1971, p.55).

Prior to the early 1800's educating women was not advocated by the society in which they lived. Women were generally believed to be less intelligent than men. Their primary occupation was to have children and provide good homes for their men and children. A woman's worth or value was determined by how well she performed these duties. She was an extension of her mate and as such, many men felt that 'intellectual learning' was not necessary. Men felt that educated women would become dissatisfied with their lives and would want to

make changes in them (Howe, 1984, pp.212-220; McClelland, 1992).

During this time many myths about the dire consequences of educating women reconfirmed these patriarchal views toward women and education. One of the more astounding myths was the belief that women were inherently evil and education would only enhance their destructive power. Many men felt that education would be used as a weapon or tool against them and the status quo (McClelland, 1992, p.12). Another myth claimed that coeducation would lower the standards of any institution that opened its doors to women. It was said openly at first that women, as a group, were not as intelligent or as capable as men were. A third myth was that coeducation would make women more male-like, it would cause the decline of feminine charm. Women might get ideas about independence and might imitate male models of achievement. Educating women might also adversely affect their ability to procreate. After all no one really knew how intellectual stimulation would affect women's behavior or body (Gappa, 1979, p.5; Howe, 1984, pp.213-215). Most noted for his strong stand against the education of women was Harvard's Dr. Edward Clarke. Clarke's books, *Sex in Education, or a Fair Chance for the Girls* (1873) and *Building a Brain* (1874), and the views he espoused, further condemned the education of women. Clarke maintained that biology predestined a woman's ability to be educated. Too much study, he said, drew blood away from the ovaries to the brain. College women endangered their health and perhaps rendered themselves incapable of having children (Werum, 1996 in Dubeck and Borman (Eds.), p.228; Gordon,

1990, p.18).

In contrast, though often unpopular, there have always been men who felt that women should have the same rights and the opportunities to become educated as men. The earliest of these advocates was Plato, who believed that sex was a difference that made no impact relative to education (McClelland, 1992, pp.12-13). With each subsequent generation there are names of men and women who advocated education for all, but until recently, the majority have felt that educating women was a waste of financial resources and intellectual energy.

As a result of this philosophy, during the 18th century educating women was not considered a good economic investment. Any money spent on education was usually reserved for boys. There was very little if any free public education. Women were allowed to instruct boys from the age of 4 to 7 in what were called "Dame Schools." They taught reading to all the children but only a few girls learned how to write. Newcomer (1959) states that writing was not regarded as essential for girls and there were those who feared that if women learned to write, they might forge their husband's signatures; and if they could read easily they would neglect their household tasks (Newcomer, 1959, p. 7). After learning how to read and write proficiently the boys could gain entry into Masters' Schools where they were taught arithmetic and anything deemed important at that time. Girls that elected to stay at Dame schools were taught household skills and in cases where education was available they were also taught arithmetic. Newcomer (1959) found that the first clear record of girls

attending a Master's School was in 1769 (Newcomer, 1959, p.7; McClelland, 1992, p.36).

After 1776, society's definition of a 'good mother' required a degree of literacy. In the years from 1790 to 1850, the United States underwent a radical change with respect to attitudes about the education of many of its women. Women were no longer expected to just be competent homemakers. The role of the colonial wife and mother was expanded and she became known as the Republican mother. This theory held that women needed the knowledge that would allow them to raise their sons to be independent thinkers and they needed to teach them how to become participants in their new republican government. No longer just teachers of morality for their children, mothers were expected to be political instructors as well. An educated woman could provide her sons with a better foundation in life. Contradicting traditionally held beliefs, daughters of wealthy families were to be schooled to become self-reliant, confident, and above all rational thinkers (McClelland, 1992, p.57). Politically and socially, many fathers felt that educating their daughters would improve their marriage prospects. With the acceptance that children, regardless of sex, should be educated, the public education system experienced tremendous growth. The need for more teachers became critical. In the early 19th century women entered public life in a major way by replacing men as teachers. The rationale for this movement was an inherent belief in women as nurturers. Women teachers would work for about one-third the salary of the men, and society leaders felt that

they were also "more naturally suited to dealing with young children by virtue of their role and education as women" (McClelland, 1992, pp. 75-77; Chamberlain, 1988, p.4). As the schoolmaster left the schoolhouse for better paying work in a factory or other business a young woman usually replaced him. Society quickly adjusted to having women in the schoolhouse as teachers (McClelland, 1992, pp 75-77).

From 1790 to 1820 six private schools for young ladies were incorporated in the United States. In the next 30 years, records indicate that there were 104 in existence. Another 96 were established prior to the Civil War. The first public high school for girls was opened in 1824. As the demand for public high schools increased, girls were accepted in the same schools as boys. At that time public high schools were designed to prepare boys for college. With the advent of coeducational high schools girls were prepared for college as well. The eventual demand for higher education by these same girls was inevitable (Newcomer, 1959, pp.9-13).

The education of black women differed from white women. Prior to the Civil War it was against the law to teach black children to read in the South. The literature used the term "underground education" to describe how black children were educated (McClelland, 1992, p.80). Literate black women, living in the South, held secret schools for their children and others. There were also white women in the South that disobeyed the law and assisted in the education of black children. In the North and New England states, Quakers and black

churches educated black children.

Although separated, after the Civil War, black children in the South began to go to school. Black taxpayers were required to financially support white schools before financially supporting schools for their own children. Beyond elementary school, black boys and girls were often sent to vocational schools that "offered their students narrow training designed to mold efficient workers rather than in academic work intended to promote critical thinking skills and preparation for full citizenship" (McClelland, 1992, p.81).

Colleges were established in the Colonies during the seventeenth century to educate the sons of Anglo-Saxon landowners to the service of church and state (Gappa, 1979, p. 5). The first colonial college, now Harvard University, was founded in 1636. Very few colleges accepted women. Initially, women who wanted a higher education were primarily limited to women's institutions. In 1837 Oberlin College admitted four female students. Three of them received A.B. degrees in 1841. This was two hundred and one years after Harvard College was founded for the education of young men. In 1870 major universities began to open their doors to women; in the same decade, women's colleges were opened that provided an education comparable to that offered men. In 1870 eight state universities and approximately forty private coeducation institutions were accepting women. There were nearly forty women's colleges offering degrees. The official estimate of women students in institutions of higher learning totaled 11,000 or approximately one woman for every four men in

1870. Most of these women were enrolled in the women's colleges; only one in six was in a coeducational institution (Newcomer, 1959, pp.13-19; Howe, 1984, p.212; Chamberlain, 1988, pp.3-5).

For several reasons the demand for higher education grew rapidly once the doors were opened. Growing industrial production created a demand for women workers outside of the home. This, coupled with the spreading demand for women teachers, succeeded in undermining the generally held belief that a woman's place was in the home. The decline in the enrollment of male students during the Civil War helped to encourage colleges to open their doors to women. Financially stressed institutions welcomed tuition dollars invested by coeducation as a means to keep their doors opened (Newcomer, 1959, pp. 35-36; Gappa, 1979, p.5).

Gappa, based on data from a 1969 U. S. Department of Labor report, found that by the turn of the 20th century, women received approximately twenty percent of all masters' degrees, and eight percent of all doctoral degrees. In the early 20th century the rate of increase in degrees awarded to women was greater than for men; this was reversed from 1930 to 1969. During World War II, the proportion of degrees rose to about 40 percent. After the war, the proportion of degrees awarded to women declined to 24 percent. Since the early to mid-1970s there has been a steady increase in the proportion of degrees awarded to women (Gappa, 1979, pp.5-6). By 1979, women constituted the majority of students on college campuses. Greater numbers and the passing of legislation

promoting equality in the classroom meant equal access to courses that were traditionally male dominated.

Section 3: Summary of Legislative Changes Impacting Equal Opportunity

The enactment of federal legislation that provided women with access to jobs, equal pay, and other privileges previously enjoyed by white males improved the work environment in all industry segments. This has been true as well for women in higher education.

Until the 1970s women's salaries supplemented their husbands in most households. Women continued to be employed primarily in traditional low paying jobs that required less education. Although women were visible in all sectors of the workforce, only a few of them were in positions of authority. In the 1970's women's rights became synonymous with a demand for equal opportunities in all segments of their lives. Legislation that promoted equitable treatment received support from women and other minority groups that it sought to protect. Women vigorously campaigned for equality in the classroom, the workplace, and in their households. The legislative changes discussed below resulted from their tenacity. Politically they were effective in reshaping the work environment for groups that have felt the sting of discrimination because of perceived differences endorsed and practiced by white males.

Organized labor, through both unions and the establishment of the National War Labor Board (NWLB) in 1942, informed and publicized the gross

inequities in wage payments for equal work practiced by companies providing goods and services during World War II. The NWLB issued General Order 16, permitting companies to equalize male and female wage rates but compliance was voluntary. The Fair Labor Standards Act of 1938 provided minimum wage protections for women engaged in interstate commerce (Marshall and Paulin, 1987, p.17). This legislation provided the foundation that the more recent enacted legislation was based upon. Equal pay for equal work although voluntary was introduced and minimal compensation through the minimum wage act was enacted.

The 1963 Equal Pay Act prohibited an employer from paying persons of one sex at a different rate of pay than persons of the other sex for jobs requiring substantially equal skill, effort and responsibility. This was the first federal law that was intended specifically to improve the economic position of women. This act was first introduced in 1868 at the National Labor Union Convention. The Act did not become a national issue until World War I. Men's fear that the wages received from jobs that were temporarily held by women during the war would be depressed spurred this legislation. When women replaced men during the war in many jobs they were paid less. The force to pass this Act came from the men who wanted to ensure that they would not be penalized because women were employed in these positions during the war.

Montana and Michigan enacted the first state level equal-pay laws in

1919, but it was not until after World War II that a major bill was placed before Congress, and another fifteen years before it was passed. This Act made it more difficult for employers to differentiate payment for equal work because of sex. It made the social claim of colonial time that women's pay was supplemental income, no longer socially or morally acceptable (Koziara, 1987, p.378).

The 1964 Civil Rights Act introduced Title VI and VII. Each had a direct impact on women, their employment, and their equal opportunities. Title VI prohibited the practice of discrimination on the basis of race, color and national origin in all federally assisted programs. This affected student admissions, financial aid, and academic programs in institutions that received federal funds. This legislation sought to hold these agencies and institutions accountable for their actions by withdrawing federal funds if they failed to comply in combating acts of discrimination (Koziara, 1987, p.381).

Title VII prohibited discrimination in employment. Representative Howard W. Smith of Virginia, an ERA supporter but a civil rights opponent, proposed a floor amendment to add "sex" to "race, religion, color and national origin" to the initial statement. This was strongly supported by the women of the House, but opposed by most of the House liberals. Neither side felt strongly enough about this provision to spend more than a few hours in debate, consequently this amendment passed and "sex" was legally added to it (Gappa and Uehling, 1979, p.64). Title VII covers all areas of the employment relationship from advertising open positions through termination or retirement. The Equal

Employment Opportunity Commission (EEOC) was created to enforce Title VII. Initially, the EEOC responded to Congresses mandate but ignored the sex provision. The National Organization for Women (NOW) which formed in 1966 directed a lot of its initial energy towards changing the guidelines of the EEOC. They worked to ensure that the sex provision of Title VII was not ignored (Koziara, 1987, pp. 381-382).

In 1972, the Equal Employment Opportunity Act extended its coverage to public and private higher education institutions. Both employees and applicants for employment are included in the provisions of Title VII that cover hiring and firing, compensation, terms, conditions, or privileges of employment, and acts of retaliation against persons asserting their rights under Title VII. Women employees are covered under the general provisions of the Act and by the more specific "Guidelines on Discrimination Because of Sex" issued in 1972 by the EEOC (National Employment Law Project 1973, pp. 56-58; Gappa, 1979, pp.62–65).

Executive Order 11246 as amended by Executive Order 11375 (1965) require institutions accepting federal funds to take affirmative action to increase employment opportunities for minorities and women. The order requires that institutions write affirmative action plans that comply with Revised Order 4 to "remedy the effects of past discrimination" and to prevent the continuation of current discrimination. The institutional obligation is contractual. Institutions with an aggregate of $10,000 in federal contracts during a 12-month period agree to

follow a series of rules and regulations that include setting goals and timetables for achieving full utilization of women and minorities (Koziara, 1979, p.398; Gappa, 1979, p.66).

This Executive Order addresses two concepts: nondiscrimination and affirmative action. Nondiscrimination requires the elimination of all discriminatory conditions, whether purposeful or inadvertent. The university contractor must carefully and systematically examine all employment policies to be sure that they do not operate to the detriment of any employee. However, affirmative action requires the contractor to do more than ensure employment neutrality. The institution must recruit, employ, and promote qualified members of groups formerly excluded, including white women; and black, Spanish surnamed, American Indian, and Oriental men and women (Gappa, 1979, p.66).

Although not ratified by the required two-thirds of the States, Congress approved the Equal Rights Amendment (ERA) in 1972. The Equal Rights Amendment was previously debated in 1946, 1950, 1953, and 1970. It failed, in part, as a result of the conflict between the sex equality proposal and a history of protective legislation for women. Further stalling the passage was the issue of women and their role in military service. Keeping women safe in the military was a priority and the passing of this legislation could jeopardize the ability of the government to do this. These issues proved detrimental to the amendment's enactment. The passing of Title VII provided a legal platform for women to bring their arguments pertaining to the legal viability of one-sex protective labor

legislation to court. Women, through their representatives, women's organizations, liberal organizations, and a two-year battle in the House, led by Martha Griffiths, were instrumental in getting the ERA sent to the states for ratification on March 22, 1972. The two-year battle resulted in the recognition by Congress that there was a serious constituent interest in women's rights. It also established liaisons between feminist organizations and congressional staff (Clark, 1987, p.207).

The Educational Amendment of 1972 also known as Title IX prohibited sex discrimination in educational programs or activities in institutions with federal contracts, grants, and loans. Modeled after Title VI, Title IX affects student admissions, financial aid, and academic programs. The greatest impact of Title IX has been on intercollegiate athletic programs. In a section of this Amendment, the Equal Pay Act was extended to cover executive, administrative, and professional employees (including faculty) within higher education institutions (Gappa and Uehling, 1979, p.65).

The Rehabilitation Act of 1973 (503 and 504) forbids discrimination against the disabled and requires institutions to take affirmative action to hire and promote qualified disabled persons and to make academic programs accessible to disabled persons (Touchton, 1991, p.3). Greater access to academic programs increased the pool of women with college skills. It opened doors to economic independence and increased career opportunities.

The Age Discrimination in Employment Act of 1974 (ADEA) protects

persons who are between ages 40–70 from arbitrary age discrimination in hiring, discharge, pay, promotions, fringe benefits and other aspects of employment. The law is designed to promote employment of older persons on the basis of ability rather than age and to help employers and workers find ways to address problems arising from the impact of age on employment. Women who entered the workforce after raising their children benefited from this Act. Women could delay post-graduate education and careers until later in their life. They could not be penalized because they delayed these decisions.

The Civil Rights Act of 1991 amends the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967 /1974, and the Americans with Disabilities Act of 1990, with regard to employment discrimination, employment related tests, mixed motives, judgement finality, foreign discrimination, seniority systems, fees, and time limits. This Act established the Technical Assistance Training Institute. This Act was an umbrella that defined employment practices that could be inferred as discriminatory (U. S. Department of Education. NCES, 1996, p.377). It established legal criteria that was defined and could be used to ensure equal opportunity and equal treatment for women.

These legislative changes helped pave the way for equitable treatment regardless of race, sex, or any other perceived disability in the work place. Employers who depended on federal dollars were usually the first organizations held accountable. Eventually these legislative changes trickled down and outward and the domino effect resulted in an increased level of compliance by

most public and private businesses.

These legislative changes expanded to include public institutions of higher education. The doors of these institutions and the enclosed opportunities were made accessible to everyone. Sex-related differences could no longer restrict opportunities to succeed academically or in academic careers. The necessity for this legislation is further outlined in the historical summary on women faculty.

Section 4: Women as Faculty: a Historical Summary

The entry of women into the labor force in large numbers during the 20th century is one of the most significant social developments in the United States. This dramatic entry made inroads in the toppling of male social norms pertaining to women and their status in society that had been practiced since the colonization of this country. Increased educational opportunities for women resulted in additional advances in occupations that were previously denied them. The increase in the number of women in academe can be attributed to this influx of women in traditionally male dominated careers and jobs (Bognanno, 1987, pp. 245-246).

From the beginning universities were male. Unlike colonial society where women, although considered property, were a part of the accepted social community, the university community was male. Created for males by males to provide religious structure and education that would in turn be disseminated to society by males, universities guarded the power and prestige inherent in these

academic organizations throughout history. Women were not welcomed in the university as students or as faculty (Chilly Collective, 1995; Chamberlain, 1988, p.167). Within these institutions women, out of necessity, forged their own roads and defined their positions within these organizations. The quote below summarizes some of the conditions that women have experienced in academia.

> Women's depressed status as faculty members is tied partially to the socialization processes and to the restrictive political and economic structures that produce gender inequalities throughout the labor force. But beyond these factors, particular features of the academic organization itself disadvantage women in higher education. Women faculty is constrained by the male culture of academia. In this male milieu, men share traditions, styles, and understandings about rules of competing, bartering, and succeeding. They accept one another; they support one another; and they promote one another. As outsiders to this male milieu, and its informal network of information and resources, women are shut off from job prospects, research information, and professional opportunities and services. ... Since the academic culture is not only male but also white, these problems are compounded for nonwhite women (Mary Frank Fox, 1989, p.229).

In earlier years women faculty were visible only at women's colleges. The tenacity and rigid belief of these women that they could succeed in the hallowed halls of higher education led to the creation of sister colleges for these male-only institutions. These institutions provided women opportunities to teach and do research in areas previously open only to men. Although women's colleges provided an opportunity for women to be employed and contribute scholastically in non-traditional areas of study, on most of these campuses, men held many of the higher-ranking faculty and administrative positions. In many cases

distinctions in titles, salaries, and housing arrangements were made based on the sex of the faculty member (Chamberlain, 1988, p.110).

Women slowly infiltrated the halls of these institutions during the early to middle part of the twentieth century. Attitudes toward women faculty, steeped in sexist tradition, made this transition a struggle for inclusiveness and acceptance. Mirroring the behavior exhibited by women and minorities within the textile industries during the latter part of the 19th century, women entered academe on the ground floor in regards to academic rank. In co-educational institutions they were cloistered in areas that seemed a natural outgrowth of their social status, such as English, Nursing, and Teacher education (Gordon, 1990, pp.34-35, 42).

Inequities experienced and documented in other organizations against women were also prevalent in higher education. Historically, equitable treatment in higher education has been defined by the standards developed, structured, interpreted, and institutionalized by the male founders of the university. Many felt that since men had dominated the field of academia since its inception the standards set forth by them simply defined the status quo. Therefore, measures of success in the academy of higher education for women faculty were defined by this 'male' university structure, i.e. academic rank, scholarship, salary, tenure status, seniority, and teaching assignments. If women wanted to achieve success in their academic careers they needed to adhere to these standards although the evaluation process to determine levels of competency was subjective and open to interpretation (Gordon, 1990, pp.121-124).

The legislation previously discussed sought to improve the status of women in the workplace. In 1970, Dr. Bernice Sandler, chair of the Women's Equity Action League (WEAL) filed a class action complaint against institutions of higher learning, charging an industry-wide pattern of discrimination against academic women. The results of this lawsuit and subsequent actions taken by others were an increased awareness of the problems facing women and minority faculty within these institutions. One of the outcomes of this type of legal action was the requirement of detailed documentation by faculty from administration in making career decisions on promotion and salary adjustments.

This increased awareness was not mirrored by the administration of most universities. The 'policing' of administrative decisions in the hiring and promotion of faculty was viewed as invasive and a violation of academic freedom (Chamberlain, 1988, pp.172-173).

Summary of the Literature Review

It is evident that the histories of women and work, women and education, and women as faculty, have differed greatly from those of men in the United States. Such differences have been institutionalized in the workplace, which was controlled by men. Men were truly the fathers of societal beliefs and practices for they defined the roles that women and other minority groups held in this society. The culture of the workplace has reflected these societal beliefs and practices that were established and governed by men's beliefs of what was

acceptable. The literature documents many studies and historical practices that substantiate these differences. The knowledge and awareness of these differences provides an understanding of subtle barriers that face women in their quest to succeed in all segments of the workforce.

Understanding the history of women's educational and work experiences in the United States provides an explanation for the current status of women faculty in higher education and the need to adapt the principles of the Equal Opportunity Theory. The sex-related differences in these experiences explored by this literature review established possible explanations for the differences in the status of faculty by sex. This research explores the impact of these differences in the performance of women faculty members in higher education over the time period 1974 to 1995.

Chapter III

Research Design and Methodology

Research Focus

Research on the condition of women in the United States and how women are performing increases the awareness of policymakers and voting constituents with regards to current issues that need to be addressed. This research focuses on women faculty and the changes that have occurred in their status within higher education during the years 1974 to 1995. This chapter presents the research questions and the research hypotheses for this study. The research data are defined and the research methodology is discussed. The chapter concludes with a discussion of the limitations for this study followed by the expected research contributions.

Research Objective

The initial objective is to report on the measurable changes that have occurred in the status of women faculty through the use of documented national data compiled by several federal agencies within the United States. The data sources are presented on page 50. Changes are measured based on comparisons in the faculty population with respect to sex from 1974 to 1995. The second objective is to use simple regression to determine the slope (rate of change) for the various variables. Simple regression, percent changes and

percent comparisons were used to explain observed changes in factors affecting the status of women faculty.

Definition of terms (previously introduced in Chapter I):

- **Faculty** refers to all full-time instructional faculty employed at all institutions of higher education in the United States.
- **Status** is defined as the position or condition of female faculty in relation to that of male faculty. Using national data status was determined by sex differences in;
    1. the number and percent of faculty
    2. the tenure status of faculty
    3. the average salary of faculty
    4. the average salary by rank (instructor, assistant professor, associate professor, or full professor) of faculty
    5. the percent of faculty compared to percent of earned doctoral degrees and
    6. the percent of faculty compared to percent of enrolled students in higher education.

Research Questions:

1. What changes have occurred in the number of female faculty when compared to the number of male faculty in higher education in the United States from 1974 to 1995?

2. What changes have occurred in the average salary between female faculty and male faculty overall?

3. What changes have occurred in the average salary by rank (Instructor, Assistant Professor, Associate Professor, and Professor) between female faculty and male faculty overall?

4. What changes have occurred in the tenure status between female faculty and male faculty?

5. Has the number of females receiving doctoral degrees resulted in an equivalent increase in female faculty?

6. Has the growth in the female student body correlated with an increase in female faculty?

Research Hypotheses:

Note: The time period for the following research hypotheses is 1974 to 1995.

#1 H_0: There was no increase in the percent of female faculty over the time period.

H_1: There was an increase in the percent of female faculty over the time period.

#2 H_0: The average salary of female faculty when compared to the average salary of all faculty members over the time period has not increased.

H_1: The average salary of female faculty when compared to the average salary of all faculty members over the time period has increased.

#3-A H_0: The average salary of female faculty with the rank of Instructor when compared to the average salary of all faculty members with the rank of Instructor over the time period has not increased.

H_1: The average salary of female faculty with the rank of Instructor when compared to the average salary of all faculty members with the rank of Instructor over the time period has increased.

#3-B H_0: The average salary of female faculty with the rank of assistant professor when compared to the average salary of all faculty with the rank of assistant professor over the time period has not increased.

H_1: The average salary of female faculty with the rank of assistant professor when compared to the average salary of all faculty with the rank of assistant professor over the time period has increased.

#3-C H_0: The average salary of female faculty with the rank of associate professor when compared to the average salary of all faculty with the rank of associate professor over the time period has not increased.

H_1: The average salary of female faculty with the rank of associate professor when compared to the average salary of all faculty with the rank of associate professor over the time period has increased.

#3-D H_0: The average salary of female faculty with the rank of full professor when compared to the average salary of all faculty with the rank of full professor over the time period has not increased.

H_1: The average salary of female faculty with the rank of full professor when compared to the average salary of all faculty with the rank of full professor over the time period has increased.

#4 H_0: Percent of female faculty with tenure when compared to the percent of male faculty with tenure has not increased over the time period.

H_1: Percent of female faculty with tenure when compared to the percent of male faculty with tenure has increased over the time period.

#5 H_0: The percent of female faculty to total faculty has not increased when compared to the percent of female doctoral recipients to all doctoral recipients over the time period.

H_1: The percent of female faculty to total faculty has increased when compared to the percent of female doctoral recipients to all doctoral recipients over the time period.

#6 H_0: The percent of female faculty to total faculty has not increased when compared to the change in the percent of enrolled female students to all enrolled students over the time period.

H_1: The percent of female faculty to total faculty has increased when compared to the change in the percent of enrolled female students to all enrolled students over the time period.

Research Data

Most of the data used for this research are from a series of reports by the U.S. Department of Education National Center for Education Statistics and Equal Employment Opportunity Commission (EEOC-6). Data collected from these agencies represent the specified populations and have become accepted sources for research data. Other data sources include several referenced published books and articles. Although current data were available from the agencies listed below, some of the historical data needed to be compiled from other sources. The collection and the compilation of the data listed and reported in one source is a valuable reference for other researchers.

Data Sources

The National Center for Education Statistics (NCES) is the primary federal entity for collecting, analyzing, and reporting data related to education in the United States. It fills a congressional mandate to collect, collate, analyze, and report full and complete statistics on the condition of education in the United States. The Center sponsors, commissions, conducts, and publishes many reports in its quest to fulfill this mandate. One of the publications that provided a lot of the data for this research is the *Digest of Education Statistics* for various years. This publication is discussed below. (U. S. Department of Education, 1997)

The *Digest of Education Statistics* published by the U. S. Department of

Education – National Center for Education Statistics for various years was used. Issued annually since 1962 except for a combined edition for the years 1977-78, 1983-84, and 1987-86. Its primary purpose is to provide a compilation of statistical information covering the broad field of American education from kindergarten through graduate school. The Digest includes a selection of data from sources both government and private. The results of surveys and other activities performed by NCES are included in these sources. Included information and material must be nationwide in scope. One of the Digest chapters focuses on several aspects of Post-secondary Education. Listed tables include fall enrollment by level of education; salaries of full-time instructional faculty; completions (degrees awarded by level); staff; and financial data.

The Digest uses data compiled from Department of Education surveys distributed to faculty and administrators annually and semi-annually at public and private higher education institutions in the United States. The survey instruments are tested for validity prior to distribution. The return rates for the surveys are reported with the data. Three of the surveys that provided data used in this research are listed and briefly discussed below.

Research Surveys

- The 1988 National Survey of Post-secondary Faculty (NSOPF-88) was the first comprehensive study of higher education instructional faculty conducted by the National Center for Education Statistics (NCES)

since 1963. The surveys that followed were renamed the National Study of Post-secondary Faculty. Prior to the release of the data generated by the 1988 survey there had been very little comprehensive information available on instructional faculty. The survey provided a national profile of faculty in all higher education institutions (i.e. two year, four year, public, private, or doctoral granting).

- The NSOPF-93 was designed to provide much of the same information as its predecessor NSOPF-88. Although sponsored by the NCES with additional support from the National Endowment for the Humanities (NEH) and the National Science Foundation (NSF), the NSOPF-93 was conducted by the National Opinion Research Center (NORC) located in Chicago. The NSOPF – 93 was designed to provide a higher level of precision for faculty overall and to provide additional information on specific subgroups of faculty. These subgroups included full-time females; black, non-Hispanics; Asian/Pacific Islanders; Hispanics; and faculty in the humanities.

- The Integrated Post-secondary Education Data System (IPEDS) surveys all post-secondary institutions, including universities and colleges, as well as institutions offering technical and vocational

education beyond the high school level. This survey, which began in 1986, replaces and expands upon the Higher Education General Information Survey (HEGIS). Major components of this survey included: fall enrollment in occupationally specific programs; salaries of full-time instructional faculty; completions (degrees awarded); staff; and fall enrollment.

List of Data by Source:

U.S. Department of Education – National Center for Education Statistics (NCES)

Note: These data are compiled from annual or semi-annual volumes from several series over the given time period. NCES is the referenced resource for all the data listed below.

- Number of faculty by sex for selected years (1974 to1995)
- Average faculty salary by sex (95/96 dollars for years 1974 to 1995)
- Average faculty salary by sex and rank (95/96 dollars for years 1974 to1995)
- Numbers of doctoral degrees granted by sex (for years 1974 to 1995)
- Number of students by sex – using fall enrollment (for years 1974 to 1995)
- % of faculty with tenure status by sex for selected years (1974 to 1995)

Equal Employment Opportunity Commission (EEOC)

These data are compiled from a series of unpublished reports referenced and used by the NCES and EEOC.

- Faculty numbers by sex (1975 -1991)

Research Design

An evaluation of the data listed provides an initial perception of the status of women faculty in the United States. Tables and graphs were created to capture the historical changes (1974 to 1995) that have occurred in college faculty by sex, doctoral degrees by sex, tenure status by sex, enrollment by sex and salary compensation by sex.

Where appropriate, regression analysis was used to determine if there has been a positive change in the status of women faculty over the time period. The appropriate percentage was used as a dependent variable to test for positive linear change in the proportion of women faculty or compensation paid to women faculty. Using aggregated faculty employment data, salary data, tenure status data, doctoral recipient data, and enrollment data as individual components, this analysis was done for faculty overall and within the designated groupings.

Study Limitations and Data Validity

The research is limited to previously collected data by several federal organizations. The data used are a compilation of results derived from several survey instruments over the 25 years from 1970 to 1995. These survey instruments were designed and tested for validity by these organizations. Consequently, the data reported have become a recognized source for statistical information in the area of higher education.

The National Center of Education Statistics (NCES) cautions users to be aware of possible problems when comparing data from different sources over time. The primary resource for the data used in this research was an annual publication of NCES titled, *The Digest of Education Statistics 19__*. The series of tables used were selected based on the consistency of comparable data reported over the time period 1974-1995. The Digest of Education Statistics includes response rates and sampling errors for all the data used for each year's publication. Each survey providing data is discussed and a contact person is listed if further information is required (U.S. Department of Education, NCES, 1996, pp.463-470).

This study provides information about what has occurred in the 22 - year period, 1974 to 1995, in the status of women faculty nationally. Regional or state variances cannot be captured because data for the different variables that could help measure these changes do not exist for the specified years.

Although the literature review documented a correlation between socialization practices and achievement the proposed models for this research does not allow the researcher to account for changes in how women have been socialized inside or outside of academia. The impact of personal family obligations and other non-quantitative variables are not included in determining their impact on the status of women faculty. This research focus is restricted to variables that are quantifiable although the researcher recognizes that data resources can be expanded to include qualitative information.

Contributions to the Body of Knowledge

The data compilation for the years 1974 to 1995 in one volume provides a comprehensive data bank that can be used in future research. The graphs created using the aforementioned data can visually measure and explain differences and similarities in the status of women faculty members compared to all faculty members in the United States that have occurred over this time period. The regression models this research develops provide a means for statistically testing if there is a linear improvement in the status of women faculty members (by evaluating the slope) over this period. The emphasis of this dissertation is quantitative but it provides a platform for future qualitative research.

Chapter IV

Data Presentation and Research Analysis

The objective of this research is to determine if there has been a change in the status of women faculty from 1974 to1995 based on the criteria listed in the research questions and the hypotheses in Chapter III. This chapter presents and analyzes the data collected from published and unpublished reports and documents. After the data analysis is completed, these results are compared with previously published research contributions by other researchers in each area. The literature pertaining to salary can be found at the end of section 3. By examining previous research that sought to measure and offer reasons for differences in the status of women faculty, the research conclusions made here were compared with the documented work of other researchers.

The data used in this research were compiled from several sources. For each data set the sources are given. When available, the data from published documents issued by the National Center for Education Statistics (NCES) were used. If data observations were not available or not found, other documented resources were used. These resources either referenced NCES reports or closely followed previously reported data from NCES documents (see pp. 46-49).

This chapter is organized into six sections. The sections correspond to the six research questions presented in Chapter III. Each research question is presented and discussed. The data used to provide information for each question are presented and the research processes that were utilized are explained. A table for each series of data is provided in the corresponding section. When available, an example of past research pertaining to the question is supplied and discussed. In each section the data are examined graphically. The statistical hypothesis that corresponds with each question when appropriate is tested using regression analysis. Rather than restating both the null and alternate hypotheses for each question, only the alternate statement is given.

Section 1

What changes have occurred in the number of women faculty when compared to the number of male faculty in higher education in the United States from 1974 –1995?

Growth in the percent of women faculty indicates that opportunity to enter teaching careers in academia have increased over this time period. An increase in the percent of women implies improved access to these positions. This increase would correspond with an improvement in the status of women faculty over this time period. The data for this series were compiled from several published sources. The *Digest of Education Statistics* for various years 1970-1997 were examined to provide a consistent data source that measures full-time

teaching faculty annually by sex. No one published or unpublished volume supplies a complete set of data. A thorough examination of several data series estimating the number of faculty teaching in higher education by sex was done. The U. S. Department of Education (DOE) and the Equal Employment Opportunity Commission (EEOC) report the data in annual, semi-annual, and special reports published and unpublished. The data series used were selected after compiling and verifying that the same method of obtaining these numbers had been used consistently over time. This consistency was determined by cross – referencing reports that used DOE data periodically. DOE, Digest of Education Statistics: *Full-time instructional faculty in institutions of higher education, by race/ethnicity, academic rank, and sex: 1970-1997: and*, U. S. Equal Employment Opportunity Commission: *EEO-6 Higher Education Staff Information Survey* (various years 1975-1991) are the data series titles.

Hypothesis #1 – There was an increase in the percent of female faculty over the time period.

The number of full-time female faculty has increased from 86,310 in 1974 to 190,584 in 1995. This represents an increase in the percent of female faculty as a percent of total faculty from 23.7 percent in 1974 to 34.6 percent in 1995. Female faculty accounted for 55.8 percent of the total faculty increase of 186,725 from 1974 to 1995. Although male faculty increased from 277,787 in

1974 to 360,238 in 1995, during this 22- year period the percent of male faculty dropped from 76.3 percent to 65.4 percent. Figure 1 depicts the number of faculty by sex and Figure 2 depicts the percent of faculty by sex over the period 1974–1995. Table 1 list the data used for this analysis.

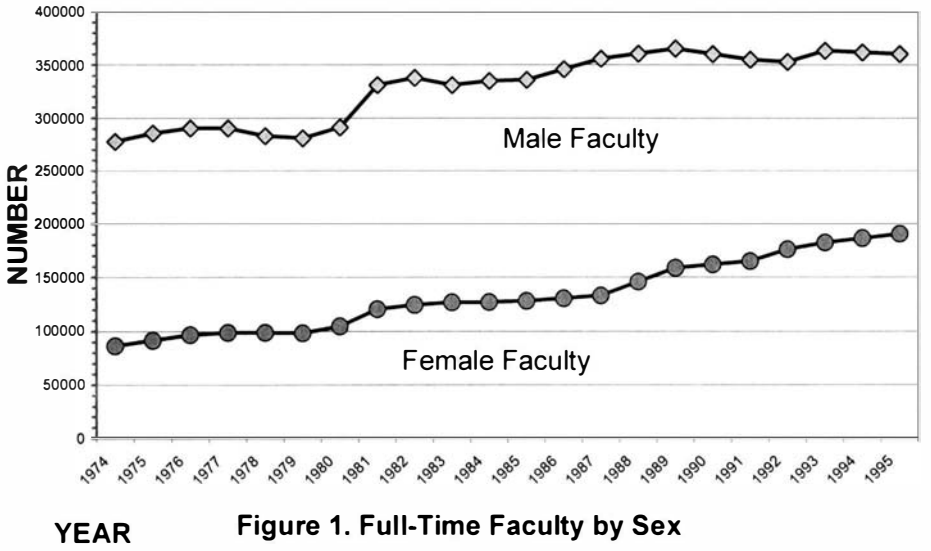

Figure 1. Full-Time Faculty by Sex

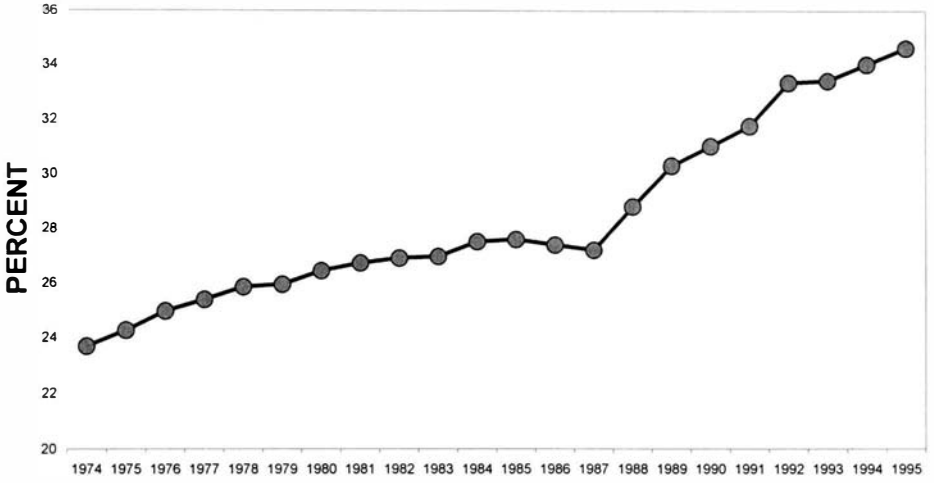

Figure 2. Female Faculty as Percent of Total Faculty

Linear regression was used to determine if time had any impact on the change in the percent of women faculty over this 22-year period. The sign of the dependent variable's coefficient indicates if the change that occurred with respect to time is positive or negative. If the value for the slope coefficient were very close to zero the change is minimal. The coefficient of the dependent

Table 1

Full Time Faculty Data

YEAR	All Faculty	Female Faculty	Male Faculty	%Female Faculty
1974	364,097	86,310	277,787	23.71
1975	377,157	91,585	285,572	24.28
1976	386,878	96,589	290,289	24.97
1977	389,033	98,769	290,289	25.39
1978	381,716	98,644	283,072	25.84
1979	379,302	98,393	280,909	25.94
1980	395,992	104,663	291,329	26.43
1981	451,558	120,628	330,930	26.71
1982	462,000	124,300	337,700	26.90
1983	470,673	126,893	330,930	26.96
1984	462,000	127,100	334,900	27.51
1985	464,072	128,063	336,009	27.60
1986	476,536	130,531	346,004	27.39
1987	489,000	133,000	356,000	27.20
1988	506,713	145,950	360,763	28.80
1989	524,426	158,900	365,525	30.30
1990	522,375	162,057	360,318	31.02
1991	520,324	165,213	355,111	31.75
1992	528,000	176,000	353,000	33.33
1993	545,706	182,276	363,430	33.40
1994	548,264	186,430	361,834	34.00
1995	550,822	190,584	360,238	34.60

Sources: U.S. Department of Education, *Digest of Education Statistics*, 1972-1997.

U. S. Equal Employment Opportunity Commission, Higher Education Staff Information Report File, 1975 – 1991, unpublished data.

Commission on Professionals in Science and Technology. *Professional Women and Minorities. A Manpower Data Resource Service*. (1974-1996).

variable (time) was 0.4862. The R-Square is 0.92 and the one-sided p-value is $1.52408 * 10^{-12}$. This research concludes that there has been a slow but continuous rate of growth in the number and percentage of full-time female faculty since 1974. By using this regression model a prediction can be made that if this growth trend continues, by the year 2028 female faculty will account for 50 percent of total full-time faculty. The regression equation used to determine this value is :

$$\mathbf{Y = 0.4862\ t - 936.5363}$$

where Y is the percent female and t is the year.

This growth in the number of women in a career that 22 years ago was clearly male dominated can be attributed to increased accessibility, economic demand, and legislative changes. Before any of these factors could influence the number of women seeking faculty positions societal views had to embrace the changing roles that women could hold in the academic environment.

Conclusion: Clearly in the area of academia, women faculty members have made measurable increases in the number employed during the time period 1974 – 1995, thus increasing their visibility in the class-room on college campuses. Using the slope of the variable measuring time (Year) in the regression analysis; the data for this research supports Hypothesis #1. The data suggest that there has been a positive change in the number of female faculty members over the time period 1974–1995. The increase in the percent of female

faculty to total faculty over this time remains steady. Progress in the status of women faculty based on this criterion did occur.

As the percentage of female faculty increases the unique society that defines academia should reflect these changes and provide a more encouraging environment for female faculty. The support and compensation women have received in academia can be measured in the changes that have occurred in financial compensation over time and in the changes that have occurred in the tenure status of women faculty. These are explored in Sections 2, 3, and 4.

Section 2:

What changes have occurred in the average salary between female faculty and male faculty overall?

Financial compensation is used as a measurement of worth and perceived value for any type of employment. An improvement in the average salary compensation for female faculty when compared to the average salary compensation for male faculty indicates a positive change in the status of women faculty.

Hypothesis #2: The average salary of female faculty when compared to the average salary of all faculty over the time period has increased.

The data were found in a complete series published by the NCES, Digest of Education Statistics. The series title for the data is *Average salary of full-time instructional faculty on 9-month contracts in institutions of higher education by academic rank, sex, and control and type of institution: 1970-71 to 1995-96: Constant 1995-96 dollars.* Earlier data indicated that more women have entered academic careers, but the gap in average salary compensation has actually increased over this time period. The average faculty salary in 1974 was $46, 601 and increased to $49,309 in 1995. Female faculty average salary as a percent of all faculty average salary was 18 percent below the average salary of male faculty as a percent of all faculty average salary in 1974 or $40,184 for female faculty versus $48, 632 for male faculty members. In 1995 the average salary for female faculty as a percent of all faculty average salary dropped to 20 percent below the average salary compensation of male faculty as a percent of all faculty average salary or $42,871 for female faculty versus $52, 814 for male faculty members.

The data for average salary for all faculty, all male and all female faculty were plotted to determine if there were visible changes over time in the average compensation for faculty members by sex over time (1974 to 1995). The results are in Figure 3 below. This figure indicates that the average salary gap between male and female faculty has increased slightly over the time period 1974 -1995. The average salary for female faculty members as a percentage of average salary for all faculty members was plotted and the results are in Figure 4.

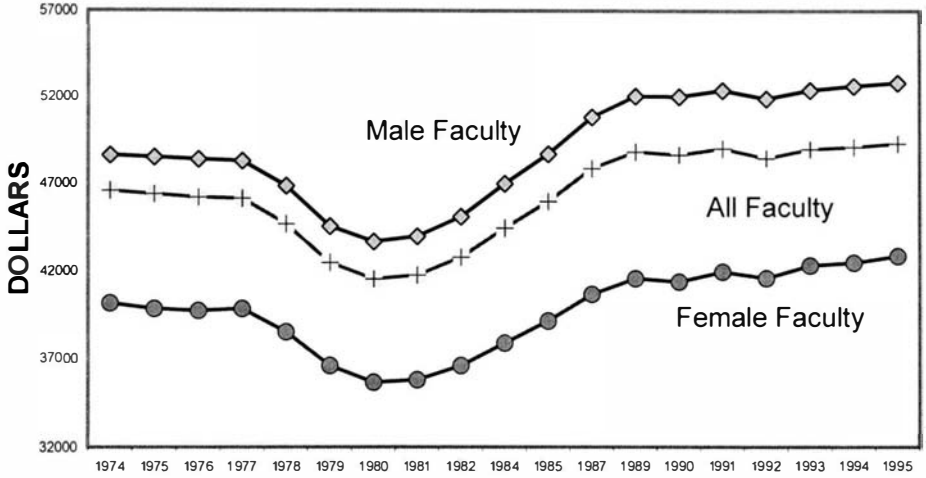

Figure 3. Average Faculty Salary by Sex

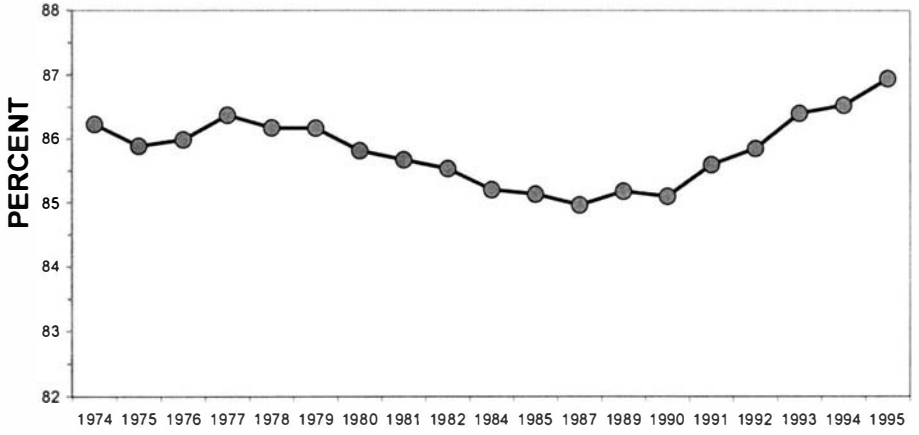

Figure 4. Average Female Faculty Salary as Percent of all Faculty Average Salary

Linear regression was used to determine if time had any linear impact on the change in the percent of average female faculty salary to all faculty salary over this 22-year period. The regression data are listed in Table 2 below. The coefficient of the dependent variable (time) was -0.00042. The R-Square was 0.00003 and the one-sided p-value was 0.51.

Since the p-value (.51) is large, the regression model does not support an increase in the average salary for female faculty as a percent of average salary for all faculty members. Using the plotted data in Figure 3, Figure 4, and the regression results, this research concludes that there has not been a continuous rate of growth in the average salary for female faculty when compared to the average salary of all faculty over the time period. Therefore, Hypothesis #2 is not supported. The discussion of previous research for Section 2 is at the end of Section 3.

Table 2
Average Salary for Full-Time Faculty
Constant 94/95 Dollars

YEAR	All Faculty	Male Faculty	Female Faculty	% Female Faculty
1974	46,601	48,632	40,184	86.23
1975	46,409	48,513	39,859	85.89
1976	46,226	48,378	39,748	85.99
1977	46,149	48,287	39,860	86.37
1978	44,704	46,861	38,524	86.17
1979	42,486	44,567	36,611	86.17
1980	41,560	43,695	35,664	85.81
1981	41,780	43,992	35,793	85.67
1982	42,810	45,121	36,616	85.53
1984	44,476	47,010	37,894	85.20
1985	45,991	48,691	39,153	85.13
1987	47,876	50,830	40,677	84.96
1989	48,833	52,033	41,593	85.17
1990	48,646	51,992	41,395	85.09
1991	49,021	52,370	41,958	85.59
1992	48,471	51,887	41,610	85.84
1993	48,991	52,387	42,328	86.40
1994	49,112	52,622	42,495	86.53
1995	49,309	52,814	42,871	86.94

Sources: U.S. Department of Education, *Digest of Education Statistics*, 1997.

Section 3:

What changes have occurred in the average salary by rank (Instructor, Assistant Professor, Associate Professor, and Professor) between female faculty and male faculty overall?

Combining faculty rank and average salary compensation, this research measures if there have been incremental changes in the status of women faculty over the time period 1974-1995. Positive changes in the lower ranks (Instructor and Assistant Professor) may indicate that improvement is being made over time. The data were analyzed to determine if changes in the lower ranks resulted in like changes in the upper ranks (Associate Professor and Full Professor). The data series used to answer these related questions are the same as the series discussed in Section 2.The salary data were broken into sub-groups by academic rank (i.e. Instructor, assistant professor, associate professor, and professor). The average salary over this time period at each faculty rank by sex is discussed in this section. Changes in the salary (dollar and percent of average) by sex is presented graphically by rank.

Instructors

Hypothesis #3A: The average salary of female faculty with the rank of instructor when compared to the average salary of all faculty members with the rank of instructor over the time period has increased.

The rank of instructor showed a change in the salary gap between male and female teaching faculty. In 1974 the average salary for all instructors was $37,857, male instructors was 40,232, and female instructors was $36,446 (constant 1995 –96 dollars) but in 1995 the average salary for all instructors was $30,344, male instructors was $30,940 and female instructors was $29,940. In 1974 average salary for women instructors was 7.5 percent below while male instructors salary were 5 percent above average salary for all instructors. In 1995 the average salary for women instructors was 1.3 percent below while male instructors were 2 percent above the average salary for all instructors. The average salary by sex at the rank of instructor is shown in Figure 5. The average salary for female instructors as a percent of average salary for all instructors is shown in Figure 6. The average salary for women instructors as a percent of the average salary for all instructors has increased from 92.5 percent in 1974 to 98.7 percent in 1995. The average salary in dollars over this time period for women and men instructors has decreased. These numbers are shown in Table 3.

The plot of the data shows two points (1975 and 1991) that depict significant change in the data from one year to the next. The literature was reviewed to determine if there were explanations for these occurrences, but none were found. The relative positions of the lines in Figure 5 do not change at the points in question, but the percentages in Figure 6 do change. The data are presented in Table 3 on the page 70.

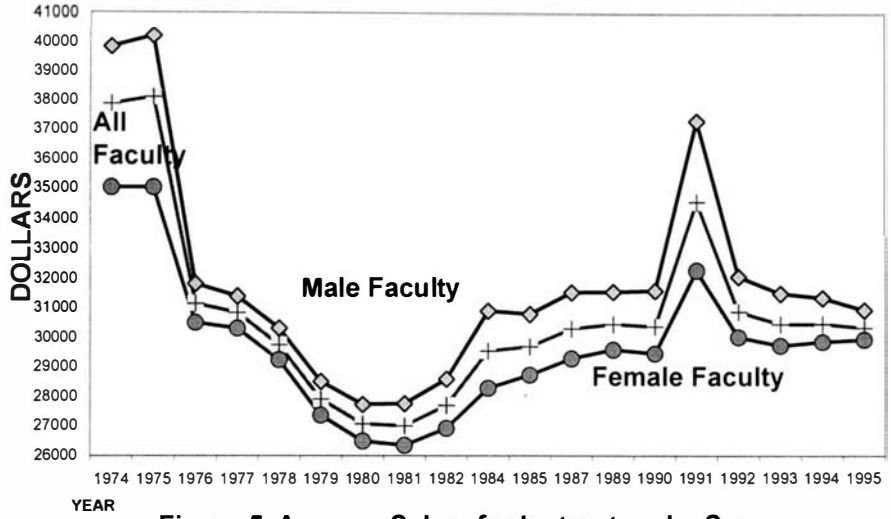

Figure 5. Average Salary for Instructors by Sex

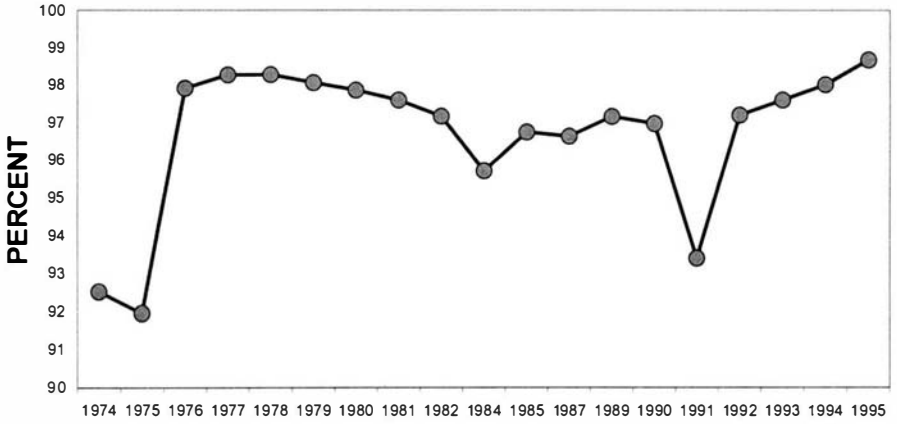

Figure 6. Average Salary of Female Instructors as a Percent of all Instructors Average Salary

Linear regression was used to test Hypotheses 3A. Due to the irregularities visible in Figure 6, the data for 1974, 1975, 1984, and 1991 were not used for the regression analysis. The coefficient of the dependent variable (time) was (-0.01803). The R-Square was 0.0386 and the one-sided p-value was 0.76. The size of the p-value does not support an increase in average salary for female faculty at the rank of instructor. Using the plotted data in Figure 5, Figure 6, and the regression results do not support Hypothesis #3A. The average salary did not increase but the average salary of female instructors as a percent of the average salary for all instructors did improve over this time frame. The last 4 data points (Table 3 concurs) show an upward trend in the salary compensation for women faculty. If this trend continues equity in average salary compensation for female faculty at the rank of instructor will possibly occur in the 21st century.

Table 3 Average Salary for Full-Time Faculty - Instructors Constant 94/95 Dollars				
YEAR	All Instructors	Male Instructors	Female Instructors	% Female Instructors to All
1974	37,857	39,823	35,022	92.5123
1975	38,090	40,200	35,024	91.9501
1976	31,154	31,813	30,506	97.9195
1977	30,843	31,400	30,311	98.2736
1978	29,756	30,315	29,244	98.2798
1979	27,907	28,505	27,365	98.0587
1980	27,071	27,725	26,493	97.8653
1981	27,006	27,755	26,356	97.5927
1982	27,706	28,586	26,921	97.1649
1984	29,551	30,908	28,283	95.7093
1985	29,700	30,800	28,733	96.7444
1987	30,312	31,535	29,291	96.6306
1989	30,456	31,554	29,591	97.1615
1990	30,379	31,598	29,459	96.9703
1991	34,560	37,291	32,277	93.3927
1992	30,894	32,069	30,028	97.1971
1993	30,461	31,504	29,730	97.6000
1994	30,472	31,359	29,863	98.0033
1995	30,344	30,940	29,940	98.6676

Source: U.S. Department of Education, *Digest of Education Statistics*, 1997.

Assistant Professors:

Hypothesis #3B: The average salary of female faculty with the rank of assistant professor when compared to the average salary of male faculty with the rank of associate professor over the time period 1974 to 1995 has increased.

The average salary by sex at the rank of assistant professors is shown in Figure 7. The average salary for female assistant professors as a percent of all assistant professors average salary over the time period is shown in Figure 8. In 1974 average salary for female assistant professors was 3 percent below that of all assistant professors while male assistant professors were 3 percent above. In 1995 female assistant professors were 3.4 percent below while male assistant professors salary remained 3 percent above average salary for all assistant professors.

In 1974 the average salary for all assistant professors was $39,659, the male average was 40,147, and female average was $38,356 (constant 1995 – 96 dollars). In 1995 the average salary for all assistant professors was $39,696, the male average was $40,858 and the female average was $38,345.

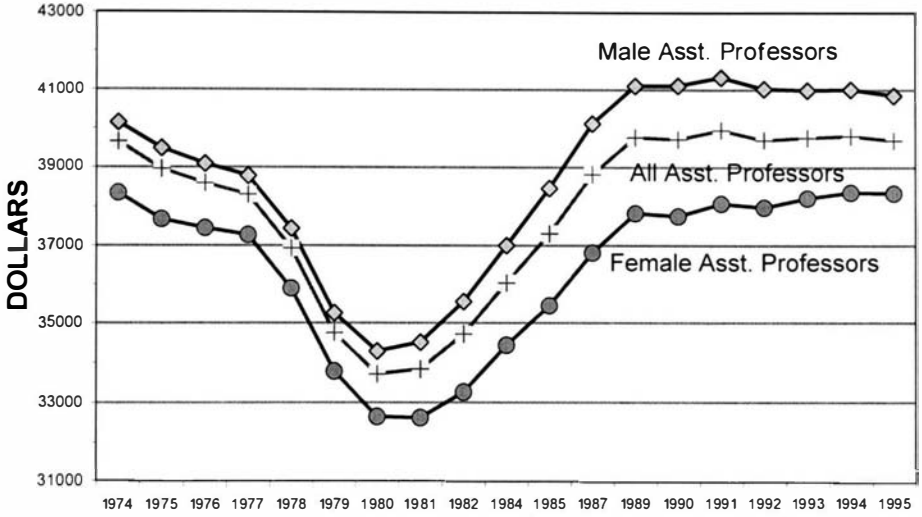

Figure 7. Average Salary for Assistant Professors by Sex

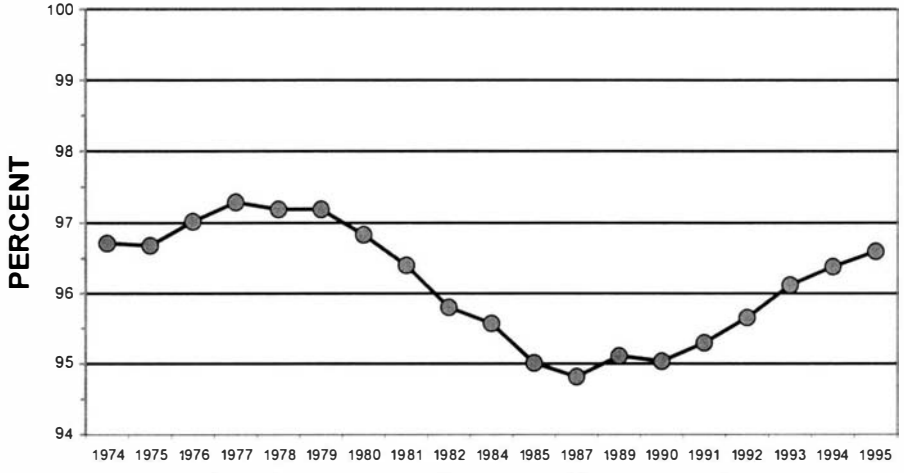

Figure 8. Average Salary for Female Assistant Professors as a Percent of all Assistant Professors Average Salary

Table 4

Average Salary for Full-Time Faculty - Assistant Professors

Constant 94/95 Dollars

YEAR	All Assist. Professors	Male Assist. Professors	Female Assist. Professors	% Female Asst. Professors to All
1974	39,659	40,147	38,356	96.7142
1975	38,964	39,488	37,671	96.6807
1976	38,597	39,095	37,446	97.0185
1977	38,309	38,793	37,270	97.2880
1978	36,932	37,445	35,893	97.1858
1979	34,758	35,265	33,780	97.1864
1980	33,711	34,292	32,643	96.8309
1981	33,833	34,517	32,615	96.3995
1982	34,719	35,553	33,261	95.8016
1984	36,034	37,001	34,437	95.5692
1985	37,308	38,468	35,447	95.0108
1987	38,824	40,127	36,811	94.8135
1989	39,775	41,104	37,829	95.1072
1990	39,727	41,113	37,754	95.0339
1991	39,959	41,326	38,078	95.2930
1992	39,702	41,021	37,976	95.6521
1993	39,762	40,991	38,218	96.1166
1994	39,810	41,009	38,368	96.3773
1995	39,696	40,858	38,345	96.5964

Source: U. S. Department of Education, *Digest of Education Statistics, 1997.*

Linear regression was used to test Hypothesis #3B. The coefficient of the dependent variable (Year) was (-0.6866). The R-Square was 0.32925 and the one-sided p-value was 0.95. This p-value and the negative coefficient for the regression variable Year, indicate that over the time period the average salary compensation decreased for female assistant professors rather than increasing. The data listed in Table 4 agree with this result.

It is clear that over this time period average salary for female assistant professors has decreased. Since 1991, Figure 7, Figure 8, and Table 3 indicate that the average salary for female assistant professors have started to increase slightly. This increase does not match the changes that have occurred in average salary for all assistant professors over this time period. Using the information discussed above, this research does not support Hypothesis #3B. There has not been an increase in the average salary of female faculty with the rank of assistant professor when compared to all faculty members with the rank of assistant professor over the time period.

Associate Professor:

Hypothesis #3C: The average salary of female faculty with the rank of associate professor when compared to the average salary of all faculty with the rank of associate professor over the time period has increased.

In 1974 the average salary for all associate professors was $48,166, male associate professors was 48,570, and female associate professors was $46,183 (constant 1995 –96 dollars). In 1995 the average salary for all associate professors was $47,966, male associate professors was $49,037 and female associate professors was $45,803.

The average salary at the rank of associate professor for female faculty was consistently below male faculty at the same rank over the entire time period. The average salary by sex at the rank of associate professors is shown in Figure 9. The average salary for female associate professors as a percent of the average salary of all associate professors is shown in Figure 10. Each figure indicates that the average salary gap between male and female faculty has increased slightly over the time period 1974 -1995.

Linear regression was used to test Hypothesis #3C. The coefficient of the dependent variable (Year) was (-0.0512). The R-Square was 0.5687 and the one-sided p-value was 0.99. The negative coefficient for the regression variable Year indicates that over the time period the average salary decreased for female associate professors.

Data used for this analysis can be found on page 78 in Table 5. These data indicate that over the time period 1991 – 1994, an increase occurred in the average salary for female associate professors. From 1994 to 1995 there was actually a decline in the average salary.

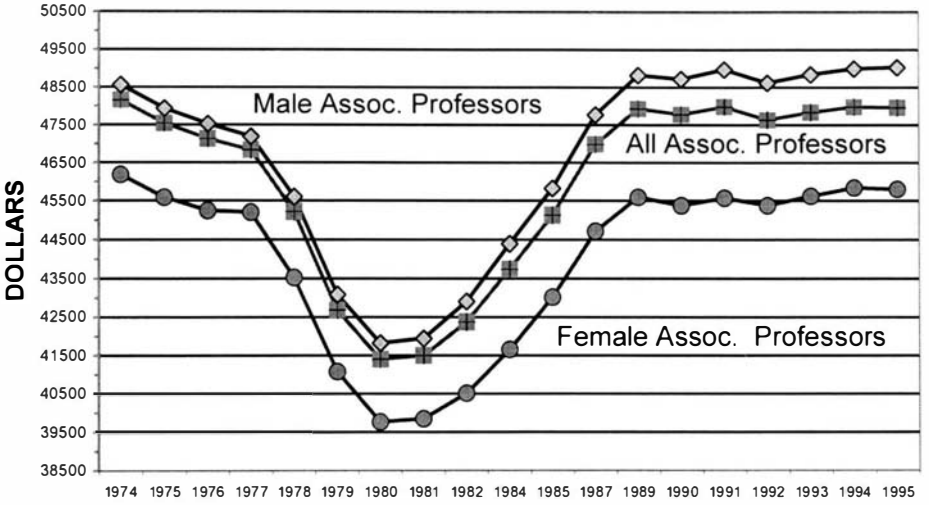

Figure 9. Average Salary for Associate Professors by Sex

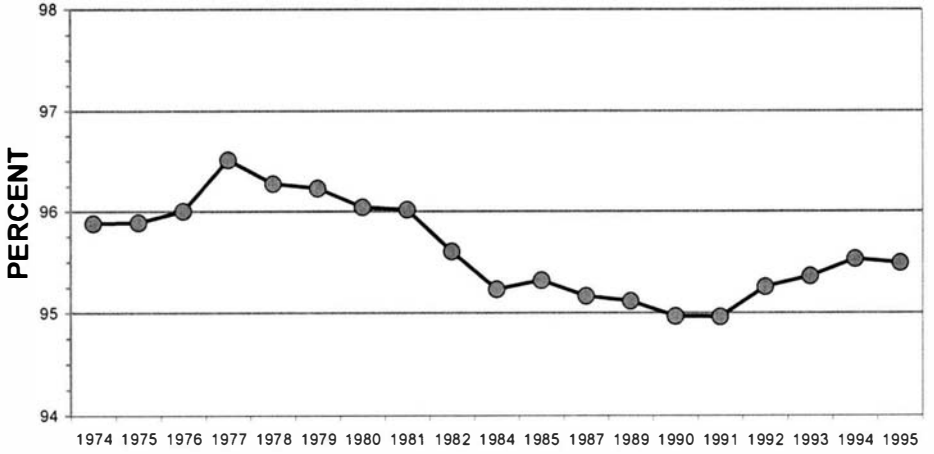

Figure 10. Average Female Associate Professors Salary as Percent of all Associate Professors Average Salary

Based on the regression analysis and the plotted data in Figure 9 and Figure 10 Hypothesis #3C is not supported. The average salary of female faculty with the rank of associate professor when compared to the average salary of all faculty members with the rank of associate professor has not increased over the time period.

Table 5

Average Salary for Full-Time Faculty - Associate Professors

Constant 94/95 Dollars

Year	All Assoc. Professors	Male Assoc. Professors	Female Assoc. Professors	% Female Assoc. to All
1974	48,166	48,570	46,183	95.88
1975	47,542	47,941	45,588	95.89
1976	47,133	47,529	45,249	96.00
1977	46,836	47,197	45,203	96.51
1978	45,217	45,607	43,531	96.27
1979	42,690	43,088	41,080	96.23
1980	41,403	41,826	39,764	96.04
1981	41,500	41,951	39,846	96.02
1982	42,377	42,914	40,515	95.61
1984	43,742	44,395	41,656	95.23
1985	45,132	45,822	43,020	95.32
1987	46,988	47,778	44,717	95.17
1989	47,931	48,830	45,591	95.12
1990	47,779	48,731	45,374	94.97
1991	47,989	48,979	45,571	94.96
1992	47,637	48,624	45,378	95.26
1993	47,842	48,848	45,624	95.36
1994	47,984	49,003	45,840	95.53
1995	47,966	49,037	45,803	95.49

Source: U.S. Department of Education, *Digest of Education Statistics*, 1997.

Professor:

Hypothesis #3D: The average salary of female faculty with the rank of full professor when compared to the average salary of all faculty with the rank of full professor over the time period has increased.

The average salary by sex at the rank of professors is shown in Figure 11. The average salary for female professors as a percent of all professors is shown in Figure 12. The average salary at the rank of professor for female faculty was definitely below male faculty over the time period. When comparing Figure 11 with the corresponding figures for the other ranks (Figure 3, Figure 5, and Figure 7), it is obvious that the gap between female and male faculty is the largest at the rank of professor. In 1974 the average salary for all professors was $63,471, male professors was 64,231 and female professors was $56,714 (constant 1995 –96 dollars). In 1995 the average salary for all professors was $64,540, male professors was $65,949 and female professors was $58,318. This is a $1,604 increase in the average salary of female professors from 1974 to 1995. The difference between male and female professors' average salary increased from $7,517 in 1974 to $7, 631 in 1995. These numbers are listed in Table 6 on page 80.

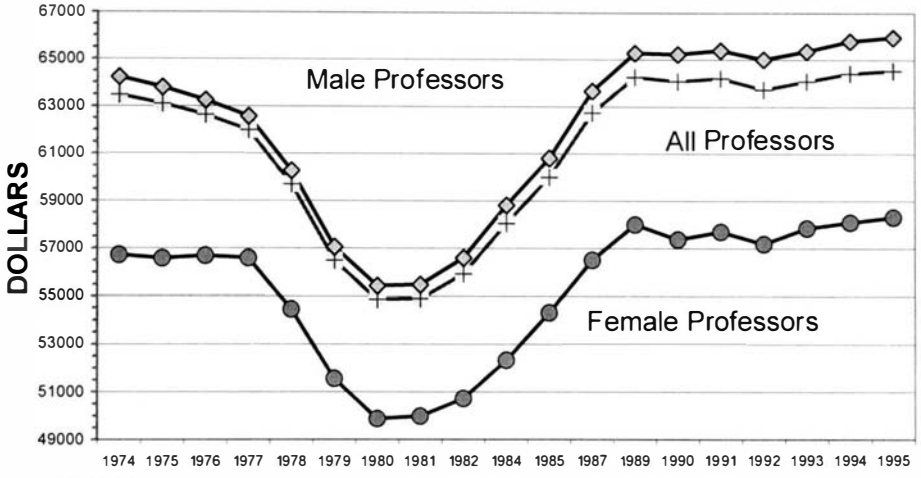

Figure 11. Average Salary for Professors by Sex

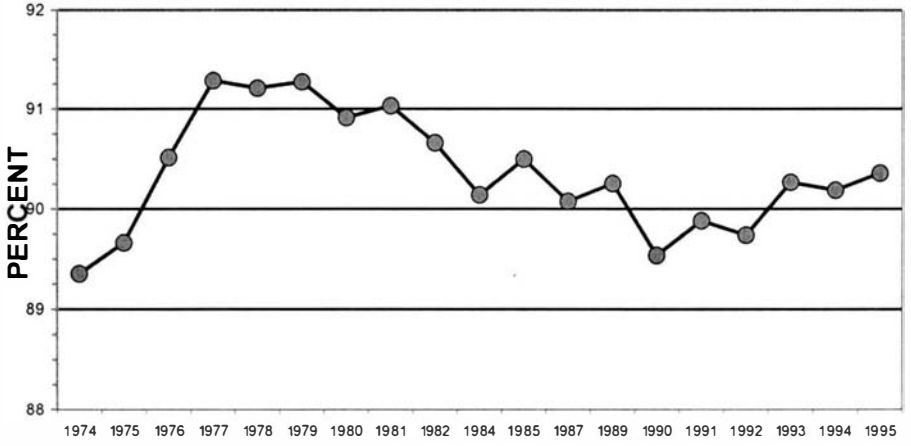

Figure 12. Average Female Professors Salary as Percent of all Professors Average Salary

Average Salary for Full-Time Faculty - Full Professors Constant 94/95 Dollars				
Year	All Professors	Male Professors	Female Professors	% Female Professor to All
1974	63,471	64,231	56,714	89.35
1975	63,098	63,802	56,576	89.66
1976	62,630	63,253	56,690	90.52
1977	61,998	62,581	56,595	91.28
1978	59,703	60,283	54,454	91.21
1979	56,497	57,061	51,565	91.27
1980	54,850	55,436	49,866	90.91
1981	54,895	55,489	49,971	91.03
1982	55,944	56,599	50,720	90.66
1984	58,055	58,823	52,330	90.14
1985	60,013	60,815	54,311	90.50
1987	62,738	63,664	56,511	90.07
1989	64,257	65,280	57,995	90.25
1990	64,077	65,241	57,372	89.54
1991	64,203	65,389	57,706	89.88
1992	63,727	65,011	57,188	89.74
1993	64,085	65,361	57,847	90.27
1994	64,415	65,789	58,093	90.19
1995	64,540	65,949	58,318	90.36

Source: U.S. Department of Education, *Digest of Education Statistics*, 1997.

Linear regression was used to test Hypothesis #3D. The coefficient of the dependent variable (Year) was (-0.02646). The R-Square was 0.097 and the one-side p-value was 0.90. Based on this regression model there has been no measurable growth in the average salary for full-time female faculty at the rank of professor over the time period 1974 – 1995 when compared to the average salary of all faculty with this rank. Using the data listed in Table 6 the difference between the average salary for female professors and all professors was $6,757 in 1974 and $6, 222 in 1995. The difference in average salary for female faculty at this rank over this time period decreased by only $535. This further explains the regression analysis.

The literature holds several explanations for the continued disparity in the salary of women faculty when compared to their male faculty at each rank. Past research has used racial discrimination, economics, and sex biases as a basis to explain and measure salary disparity. Some of these are explored below.

Human Capital Theory: Human capital theory postulates that earning disparities between groups are caused by human capital differential. Human capital is defined as knowledge, skills, and work experience that are earned from formal education, on the job training and/or life experiences. Using only this theory to explain differences in earnings received by women and men faculty members, an assumption is made that women accumulate less human capital

than men do. This assumption suggests that women do not invest in human capital at the same level as their male counterparts. They attend graduate programs that are less expensive and/or tend to take teaching rather than research jobs. Expected career interruptions due to family planning or other personal obligations devalues human capital.

Sex Discrimination: Bognanno reported that Johnson and Stafford (1974) using National Science Foundation data on Ph.D. recipients, found that female faculty earn less than male faculty. The reason for the differential in pay was attributed to sex discrimination and to differences in female and male human capital investment. Johnson and Stafford concluded that even if there were no differences in the salary that women and men received at the start of their academic careers the choices (research, service, family planning, and etc.,) that women made after their entry into the profession, resulted in a lower contribution for their human capital investment. The lower contribution accounted for the inequity in salary rewards in the latter stages of their careers. (Bognanno, 1987, p.253).

Johnson and Stafford's research showed the differences in salary were not due exclusively to differences in human capital, but it could be due to differences in the return on human capital. The data for this current study contain no measures of human capital and its effect cannot be considered.

Ferber and Kordick (1978) studied thirty-six hundred women and men

Ph.D. holders who had earned their degrees in the periods of 1958-63 and 1967-72. Using the results of their study they rejected the human capital model as an explanation for earning differentials between women and men. The data they collected led them to "reject the proposition that the lower rewards of highly educated women are chiefly caused by their voluntary decision." Ferber and Kordick concluded that the evidence "points toward the need for vigorous pursuit of anti-discrimination and affirmative action policies" (Farley, 1982, p. 44).

Discipline differences and discrimination: Mary Frank Fox (1981) analyzed the salary gap on a university campus to test three hypotheses. They were: (a) that high proportions of women in an academic unit depress men's salaries; (b) that women's salaries are higher in male-dominated units than in female-dominated units; and (c) that men in female dominated fields are compensated for being there by receiving higher salaries. None of these hypotheses were supported by the data she used from a major mid-western university's personnel records in 1971. She found that the sex composition of a given unit was not a significant determinant of salary but that achievement was. Achievement in this case was defined as level of education and time in the unit or seniority (Farley, p.47).

Marcia Bellas (1997) examined the effects of the labor market conditions and sex compositions of sixteen academic disciplines on the average salary of entry-level faculty. Bellas, using both cross sectional and dynamic models,

concluded that after controlling for the effects of human capital and productivity measures, the sex composition of academic disciplines influence average salaries. Simply stated faculty in disciplines with a higher proportion of women suffered a financial penalty when compared to those in disciplines where women are uncommon. Her study results are consistent with research in the larger labor market that has documented an inverse relationship between the proportion of women in occupations and wage levels (Bellas, 1997, pp. 314-316).

Discrimination: Bognanno summarized several published studies on faculty salary, rank, and promotion from the 1970's and 1980's. Some of the conclusions he summarized are included here. The Johnson and Stafford (1974) study using the National Science Foundation data concluded that 40 percent of the wage disadvantage faculty women endured over a 35-year work life was attributable to discrimination. Ferber and Green (1982) using data from the University of Illinois, Urbana-Champaign, concluded that 48 percent of the differential between the mean salary of faculty men and women could be attributed to discrimination (rank was omitted from the analysis). Gordon, Morton, and Braden (1974) using data from an unnamed university examined the relationship between salary and age, race, years at the university, current education, department, work, and sex. They concluded that all things being equal, faculty women earned 9.5 percent less than men did. Hoffman (1976) by replicating the models used by Gordon, Morton, and Braden, but using a data set

from another university, concluded that if rank was included the sex coefficient (female = 1) was –7.4 percent; when rank was excluded, this coefficient changed to –16.2 percent (Bognanno, 1987, p.254). Being female had negative impact on salary. The change in coefficient is an indication of multicollinearity or a relationship between the sex and rank variables used for these data.

The National Science Foundation (NSF) in 1996 published a report on women, minorities and persons with disabilities in the science and engineering field. The salary for science and engineering faculty is included in this analysis. In 1993, among employed science and engineering doctorate-holders who worked full time, the average salary for women was $50,200 compared with $63,600 for men (NSF, 1996, p. 72). This report stated that the differences between men and women in the doctoral labor force help explain the salary gap observed among these two groups.

This research used statistical analysis to explain the doctoral gender salary gap. The variables examined included years since doctorate, field of degree, other work-related employee characteristics, employer characteristics, type of work, and life choices. These variables accounted for 90 percent of the observed gap in 1993 of approximately $13,300. NSF researchers concluded that the most important explanatory variable is years since receiving the doctorate. This variable accounted for 24 percent of the salary gap. Field of degree accounted for 11 percent of the gap. Other work-related employee characteristics (full-time work experience, age when doctorate was received,

professional membership, second career, licensure, additional post-doctoral training) accounted for 19 percent of the gap. Employer characteristics (private or public sector, employment locality) accounted for 10 percent of the salary differential. Type of work (occupation, primary or secondary work activity, management or supervisory, postdoctoral appointment) explained approximately 15 percent of the gap. Life choices (marital status, spouse employment status, job history, educational background, post degree training and workshops) collectively explained 11 percent of salary gap. Still 10 percent of the gap, approximately $1400 could not be explained. It is important to recognize that within these regression variables some margin of error can occur in the measuring process. Underlying this analysis is the researcher's caution that at best, the analysis of these variables to explain the salary gap, is a rough estimate and not all of it could be explained (NSF, 1996, pp. 72-75).

Bognanno (1987) stated that few seriously challenge the assertion that sex (female) discrimination is a fact of academic life. Discrimination he asserts can be shown to exist only when women having identical characteristics to the men they are being compared to (e.g. ability, education, experience, performance, and tastes) are given inferior employment treatment. Studies have attempted to meet this requirement in varying degrees with both national and university-specific samples. Bognanno concluded that virtually all of these studies found that earning decisions are governed, to some degree, by sex. He stated that the examination of a single regression model with sex as an

independent variable and male and female rewards analyzed in separate regression runs verified these finding (Bognanno, M., 1987, p. 252).

Summary: This study does not look at salary differential based on sex within academic fields. The reviewed research from National Science Foundation (1996) and Marcia Bellas (1997) implies that differences in salary compensation within disciplines do exist and can be linked to gender characteristics associated with the sex of the faculty member. Equal Opportunity Theory is based on the premises that equal treatment and compensation will be the result of equal effort and ability to achieve. This applies across academic disciplines. The sex of an individual should not affect this outcome.

Using the aggregated data described in the each section the following conclusions can be made. The average for women faculty definitely did not increase at every rank over the 1974 -1995 time period. Using linear regression to determine if the slope measuring possible change overall at each rank was negative, giving no support for Hypothesis #2 or Hypotheses #3A – #3D.

Table 7: Section 3 – Hypotheses Summary

Group Of Salary Related Hypotheses

Hypothesis	Group	Slope Coefficient	1-Sided P-Value	Conclusion
#2	All	-0.00042	0.51	No Increase
#3A	Instructors	-0.01803	0.74	No Increase
#3B	Assistant Prof.	-0.6866	0.95	No Increase
#3C	Associate Prof.	-0.05117	0.99	No Increase
#3D	Full Prof.	-0.02645	0.90	No Increase

Financially, female faculty members continue to receive on average a smaller salary than their male counterparts at every listed rank. The data are clear and the examined research supports the conclusion that disparity based on the sex of an individual exist in the average salary for teaching faculty at each of the four ranks examined. Figures 4,6, 8, 10, and 12 all show an upward trend in female faculty salaries in the 90s; even though there may have been no overall increase over the time period 1974 to 1995.

Section 4: What changes have occurred in the tenure status between female faculty and male faculty?

Faculty members in higher education are classified as either tenured, tenure track, or not on tenure track (not eligible for tenure). In academia achieving tenure status is synonymous with a promotion, a degree of job security, peer acceptance and peer recognition. Faculty members with tenure or in a tenure track position can serve and participate in the academic governance process. This is not necessarily true for all faculty members. To determine if there have been changes in the status of women faculty members over the time period 1974 to 1995, an examination of the percent of female faculty who have achieved tenure compared to the percent of male faculty was done.

Hypothesis #4: Percent of female faculty with tenure when compared to the percent of male faculty with tenure has increased over the time period.

The data used to answer this question were compiled from many volumes of two publications. The NCES *Digest of Education Statistics (Various Years)* and *Professional Women and Minorities: A Manpower Data Resource Service (Various Years)* were used. The data were recorded as a percent of full-time faculty with tenure from several tables in the above publications. To ensure accuracy for each year, the data were verified in several volumes to account for updated reported data. The percent used in this data series is the number of female or male faculty members with tenure divided by total female or male faculty members. Figure 13 shows the percent of tenured faculty by sex for the period 1974 – 1995. Please note that the data depict unexplained drops in the percent of tenured faculty for both males and females in 1981 and 1990. The observations were checked in both series to determine if there were discrepancies in the reporting process but none could be found.

Over the 22- year period tenured full-time female faculty increased from 41 percent in 1974 to 51 percent in 1995. Male faculty over the same period increased from 58.2 percent classified as tenured to 71.8 percent. Using Figure 13 to visually analyze the data, it is clear that women faculty members have not advanced in closing the gap in the percent of tenured faculty. Instead over this

22-year period the gap has actually expanded.

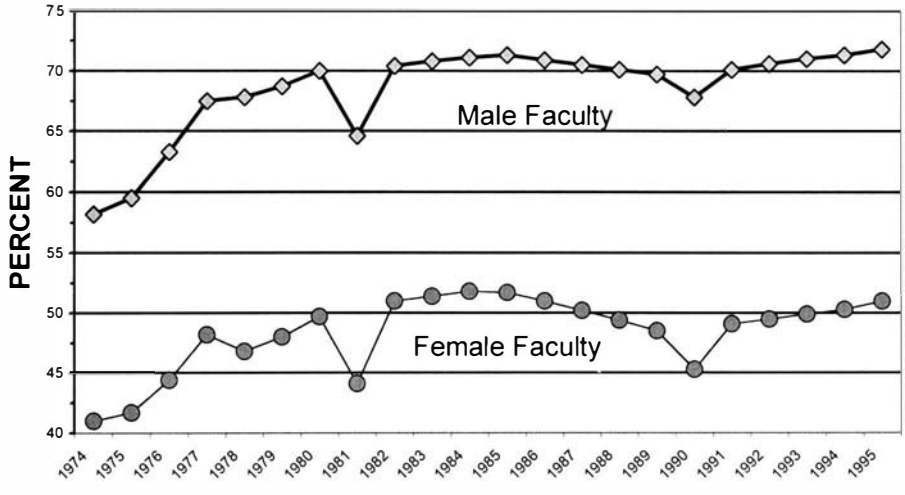

Figure 13. Percent of Tenured Faculty By Sex (%Tenured/Total by Sex)

Table 8
TENURE STATUS –– PERCENTAGE
(By Sex)

Year	Percent Male Faculty	Percent Female Faculty
1974	58.2	41.0
1975	59.5	41.7
1976	63.3	44.4
1977	67.5	48.2
1978	67.8	46.8
1979	68.7	48.0
1980	70.0	49.7
1981	64.6	44.1
1982	70.4	51.0
1983	70.8	51.4
1984	71.1	51.8
1985	71.3	51.7
1986	70.9	51.0
1987	70.5	50.2
1988	70.1	49.4
1989	69.7	48.5
1990	67.8	45.3
1991	70.1	49.1
1992	70.6	49.5
1993	71.0	49.9
1994	71.3	50.3
1995	71.8	51.0

Note: Data for 1983,1986, 1988, AND 1992 were an average of the preceeding and following years' observation.
Data for these years were not available.

Source: U.S. Department of Education, *Digest of Education Statistics*, 1972-1997.

U. S. Equal Employment Opportunity Commission, Higher Education Staff Report File, 1975-1991, unpublished data.

Commission on Professionals in Science and Technology. *Professional Women and Minorities: A Manpower Data Resource Service*, (1974-1996)

The literature offers many reasons for a smaller percentage of women faculty members achieving tenure (Academe, 1998; NCES. 1997, pp.1-2; Bognanno, 1987, Eds.). Some of these are 1) access to tenure track positions, 2) academic rank, 3) quality and quantity of research or work productivity, 4)self efficacy perceptions and 5)sex – gender related biases. Several of the listed reasons are discussed below.

Non-tenure track faculty: In 1997 a NCES publication stated that sixty-percent of female faculty compared to forty-percent of male faculty in tenure system institutions were employed in non-tenure track positions. The age of the faculty member (regardless of age group) did not impact this percent. Among full-time faculty, females were found to be twice as likely to be in non-tenure track positions (NCES. 1997, pp.1-2). Although the number and percent of female faculty over the time period (1974 – 1995) have continued to increase, their propensity to attain tenure track positions relative to male faculty has not.

Academic Rank: Recent data on faculty continue to show a gap in academic rank and tenure status by sex in public institutions of higher education. Data on full-time faculty by academic rank in public institutions published by Academe (March-April 1998) for 1997-1998 academic year indicated that, relative to their male counterparts, faculty women were less likely to be full professors or associate professors. Academe reported that 30.3 percent of all

faculty members were male full professors while 7.1 percent were female full professors. At the rank of associate professors, 18.8 percent of all faculty members were male associate professors while 9.6 percent were female associate professors. However, the gap is smaller for the rank of assistant professor: 12.8 percent of all faculty members were male assistant professors while 11.2 percent were female assistant professors. Women exceeded their male counterparts at the rank of instructor or lecturer. Of all faculty members, 2.6 percent were male instructors compared to 3.6 percent female instructors. At the rank of lecturer, 1.3 percent of all faculty members were male lecturers and 1.7 percent were female lecturers. These statistics suggest that women are not experiencing the same academic prestige, achievement, and job security as their male counterparts (Academe, 1998; Bognanno, 1987).

Faculty workload and productivity: Henry L. Allen (1998) using data from the National Survey of Post-Secondary Faculty 1993 (NSOPF-93) used various regression techniques to make gender comparisons in the area of faculty workload and productivity. He concluded that all faculty members worked long hours. The sex of the faculty member resulted in differences in the priority given to work assignments. With few exceptions, Allen found that male faculty across academic institutions, ranks, disciplines, age cohorts, and marital statuses, worked more hours, spent more time in research than in teaching, and published more frequently than their female colleagues. Female faculty members worked

fewer hours, devoted more time to teaching than research, and published less often in refereed journals (Allen, 1998, p. 29, p.41). Publication in refereed journals is a key element in tenure decisions at most institutions.

Studies using other data show that men historically were dominant in higher education and they were more likely to work full-time. Men and women were distributed differently throughout disciplines, ranks, and institution (i.e. research versus non-research). Differences in the social structures of the different institutions and their locality can result in sex-based different expectations in the areas of faculty productivity and workloads (Allen, 1998, p.29, p.41).

Self-efficacy Theory: Latika Vasil (1992) suggested that the self-efficacy model could be useful in providing a theoretical framework to integrate empirical findings about women's present status in academia. Self-efficacy, as defined by Bandura (1977,1986), is the conviction that one can successfully perform a required behavior in order to achieve a desired outcome. The premise of self–efficacy theory is that one of the most important influences on behavior is the individual's self-efficacy belief. Self-efficacy beliefs are defined as the individual's perception about their ability to successfully perform a behavior (Vasil, 1992). Vasil's article summarized recent empirical research by Landino & Owen (1988) and Schoen & Winocur (1988) which examined university faculty performances and self-efficacy. (Vasil, 1992, pp.259-261)

Landino and Owen investigated the effect of performance accomplishments (academic rank, highest degree held, and productivity), vicarious learning, sex, age, and years of experience in higher education on measures of research, service, and teaching self-efficacy and found sex related to research self-efficacy indirectly. They concluded that females felt less confident about research tasks. This was influenced primarily by negative outcomes of past research related experiences. Schoen and Winocur examined the academic self-efficacy expectations of male and female university faculty in an attempt to explain the factors that contribute to the under-representation of female faculty in the senior ranks of academia. They found that females were less confident than their male counterparts in performing research tasks but were more confident than males in performing teaching related tasks. Statistically the findings were not significant and this could be attributed to an inadequate sample size that resulted from a low response rate (38%) to the test instrument by faculty (Vasil, 1992, pp.259-263).

Vasil's study tested a model of research self-efficacy among male and female university faculty. The study hypothesized that research self-efficacy would predict research performance (productivity), after controlling for the effects of years of experience, rank, and college affiliation. An additional focus of Vasil's study was to examine sex differences among university faculty in their research self-efficacy beliefs, frequency of performance of research tasks, and research productivity. Using step-wise multiple regression and defining productivity as the

dependent variable in one scenario and self efficacy in another, results showed that research self-efficacy was positively correlated with research productivity, providing empirical support for Bandura's contention that self-efficacy expectations are related to behavior. The study also found that male faculty reported significantly stronger research self-efficacy than did females (Vasil, 1992, pp. 259-269).

Conclusion: The above research leads to the conclusion that there remain systematic sex-related differences in the way faculty enter and progress in academia. The number of tenure track positions offered to women indirectly impact the percent of women faculty that actually attain this status. The allocation of research resources and the type of structural support in the different academic programs and institutions dictate the level of research productivity demanded and expected by faculty. Given the smaller number of women entering tenure-track positions and the measures used to determine tenure (primarily research and publication) the probability that parity with their male counterparts will occur in the near future is small. The data in the current study agree with this conclusion. The data used is based on the percent of tenured faculty by sex for each population (male and female). This was the only consistent measure for tenured faculty found. If the data existed for tenured faculty that entered the academy in tenured-track positions over this time period by sex the results might differ. Equal opportunity theory suggests that if women

faculty members are given the same opportunity to achieve tenure, resource support and allocation to publish, and rated equitably on productivity as their male counterparts; these tenure statistics would improve.

Section 5: Has the number of females receiving doctoral degrees resulted in an equivalent increase in female faculty?

Tenure track positions at most higher education institutions in the United States are filled with candidates that have or will soon receive a doctoral degree. The number of women receiving doctoral degrees directly impacts the number of women faculty that can achieve tenure. Also salary compensation for faculty members who have this degree is better. The previous discussions in Sections 1, 2, 3, and 4 identify faculty number, salary compensation, and tenure status as key measures impacting the status of women faculty over the time period 1974 to 1995. This research determines what changes have occurred in the number of doctoral degrees received by women over this time period.

The data used in this section were found in a complete series published by the NCES, Digest of Educational Statistics. The series title for the data is *Earned degrees conferred by institutions of higher education by level of degree (1970 - 1995)*. The number of students receiving a doctoral degree was plotted in Figure 14 to determine if there were visible changes by sex over time (1974 – 1995) in the number of recipients.

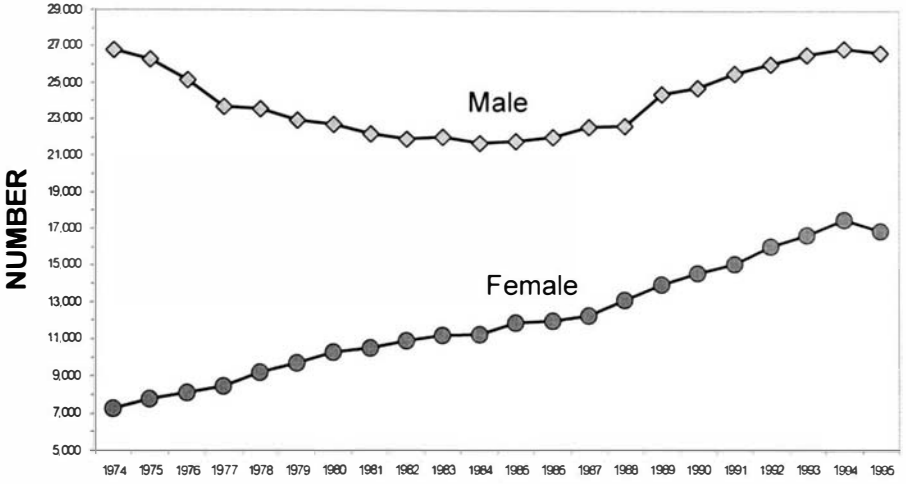

Figure 14. Number of Doctoral Degrees Earned By Sex

Figure 15. Female Doctoral Recipients as a Percent of All Doctoral Recipients

The number of female doctoral recipients increased from 7,266 in 1974 to 16,900 in 1995. The number of male doctoral recipients totaled 26, 817 in 1974 and decreased to 26,700 in 1995. The data show a 17 percent increase in the percent of female doctoral recipients over the time period 1974–1995. The percent of female doctoral recipients over this time period is shown in Figure 15. The data are given in Table 9 below.

Linear regression was used to determine if time had a positive linear relationship with the percent of female doctoral recipients over this 22-year period. The coefficient of the dependent variable (time) was 0.78599243. The R-Square was 0.91 and the one-sided p-value was $3.74225 * 10^{-12}$. This research concludes that there has been a continuous rate of growth in the number and percentage of female doctoral recipients since 1974. By using this regression model a prediction can be made that if this growth trend continues female doctoral recipients will account for 50 percent of total recipients around 2006. The formula used to determine this value is:

$$\mathbf{Y = 0.78599\ t - 1526.8866}$$

where Y= female doctoral recipients as a percent of all recipients and t = time in Years. This projection assumes a constant increase in the percentage. Figure 15 shows that the increase was greater in the 70's than in the 80s and 90s.

Table 9

Doctoral Degrees Granted

Year	Total Doctoral Degrees	Male Doctoral Degrees	Female Doctoral Degrees	% Female Doctoral Degrees to
1974	34,083	26,817	7,266	21.32
1975	34,064	26,267	7,797	22.89
1976	33,232	25,142	8,090	24.34
1977	32,131	23,658	8,473	26.37
1978	32,730	23,541	9,189	28.08
1979	32,615	22,943	9,672	29.66
1980	32,958	22,711	10,247	31.09
1981	32,707	22,224	10,483	32.05
1982	32,775	21,902	10,873	33.17
1983	33,209	22,064	11,145	33.56
1984	32,943	21,700	11,243	34.13
1985	33,653	21,819	11,834	35.16
1986	34,041	22,061	11,980	35.19
1987	34,870	22,615	12,255	35.14
1988	35,720	22,648	13,072	36.60
1989	38,371	24,401	13,970	36.41
1990	39,294	24,756	14,538	37.00
1991	40,659	25,557	15,102	37.14
1992	42,132	26,073	16,059	38.12
1993	43,185	26,552	16,633	38.52
1994	44,446	26,916	17,530	39.44
1995	43,600	26,700	16,900	38.76

Source: U.S. Department of Education, *Digest of Education Statistics*, 1996 & 1997.

Over this time period the number of female faculty members and the number of female doctoral recipients increased. Since the number of female doctoral recipients increase the pool of potential female faculty members, comparing the changes that have occurred in the percent of each group provides another measurement for the status of female faculty over the time period 1974 to 1995.

Hypothesis #5: The percent of female faculty to total faculty has increased when compared to the percent of female doctoral recipients to all doctoral recipients over the time period.

Using the data for total faculty discussed in Section 1, the percent of female faculty members and the percent of female doctoral recipients over the time period were plotted to determine if the growth pattern in one would reflect or mimic a change in the other. This plot is shown in Figure 16. Female faculty grew 10.9 percent of total faculty while female doctoral recipients grew 17 percent of the total number of doctoral recipients over the same time period. From 1974 to 1987 the female faculty were not keeping pace with female doctoral recipients. However, from 1987 to 1995 female faculty members appear to be increasing at a constant rate.

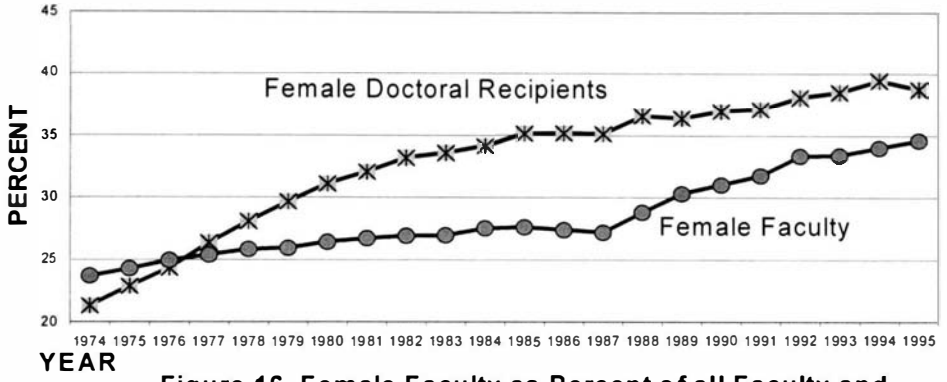

Figure 16. Female Faculty as Percent of all Faculty and Female Doctoral Recipients as Percent of all Doctoral Recipients

The literature suggests that employment opportunities differ slightly for doctoral recipients depending upon the sex of the graduate (NCES-C95.34. 1995, pp. 1-2). Differences also have been found in the choices that are made in determining the field of study. Some of these differences are reviewed and discussed below.

Overview of higher education opportunities: A 1995 NCES report on the condition of education evaluated over time (1970 –1993) the percentage of new doctoral recipients with committed academic employment plans in the United States. Commitment was defined as a signed contract or the acceptance of a formal offer. The report stated that the proportion of new doctoral recipients with definite employment commitments in higher education declined substantially between the early 1970s (68.1 percent in 1970) and the early 1980s (50.3 percent in 1981). Since the 1980s the proportion has been relatively constant. In 1987 and in 1993 this proportion was 51.9 percent (NCES-C95.34. 1995, p.1).

Employment commitment in higher education by field of study varied over this time period. Between 1970 – 1993, a larger proportion of new doctorates in the humanities (96.1 percent in 1970 and 86 percent in 1993) had job commitment than those in other fields. Those in engineering and physical science (38.2 percent in 1970 and 45.4 percent in 1993) had the lowest proportion of academic job commitments (NCES-C95.34. 1995, p. 1).

Graduate field of study: Opportunities in the job market affect the field of study decisions of graduate students. A 1997 NCES report on the condition of education evaluated over time (1971 –1994) the graduate field of study by sex. According to this report, at the doctoral level, in the social and behavioral sciences females since 1971 have been consistently more likely to earn a degree than males. Overall, in 1994 females earned more graduate degrees in

education and the health professions than in any other disciplines. A higher proportion of males earned graduate degrees in natural sciences, computer sciences and engineering and business management than females (NCES-C97.28. 1997, pp. 1-2).

Summary: Female doctoral recipients have increased at a slow but constant rate over the time period 1974 – 1995. The data visually show in Figure 14 and Figure 15 a positive change in the number and in the percent of female doctoral recipients since 1974. Figure 16 shows that the percent of female faculty when compared to the percent of female doctoral recipients did not grow at the same rate over this time period. Each group increased in percent over this time period but the percent of doctoral recipients after 1977 exceeded the percent of female faculty members in each succeeding year. Hypothesis 5 is not supported because an equivalent increase in the percent or the number of female doctoral recipients when compared to female faculty members, have not occurred over the time period 1974 to1995.

Section 6: Has the growth in the female student body correlated with an increase in women faculty?

This section discusses if the change in the number of female students over the time period 1974 to 1995 is reflected in the number of female faculty members in the classroom. Enrolled students form the pool for future faculty in higher education. They determine supply and demand for faculty as well. As

enrollment increase it is expected that faculty demand would increase as well. As the number of female students increase they become part of the `voice' in academia that shape academic policies and practices. An increase in the number of enrolled female students over a lagged time period should positively impact the number of female faculty members.

The data used in this section were found in a complete series published by the NCES, Digest of Education Statistics. The series title for the data is *Fall Enrollment: 1947 to 1995.* The number of students enrolled was plotted in Figure 17 to determine if there were visible changes by sex over time (1974 – 1995) in the number of recipients. The percent of female enrolled students over this time period is shown in Figure 18.

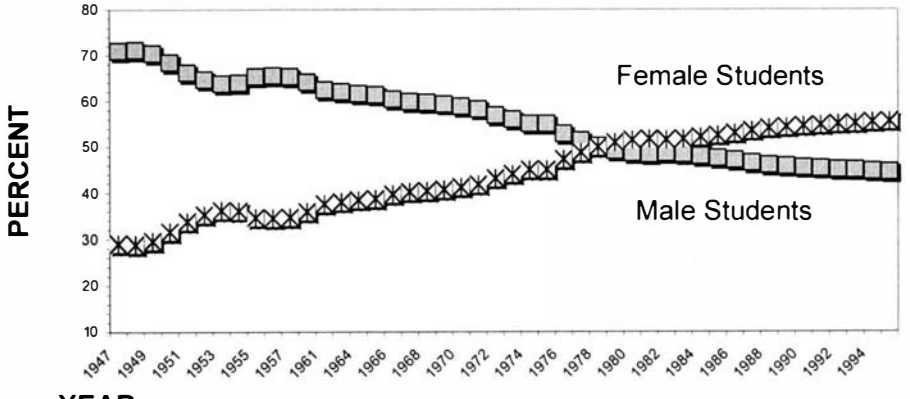

Figure 17. Fall Enrollment by Sex as Percent of Total Enrollment

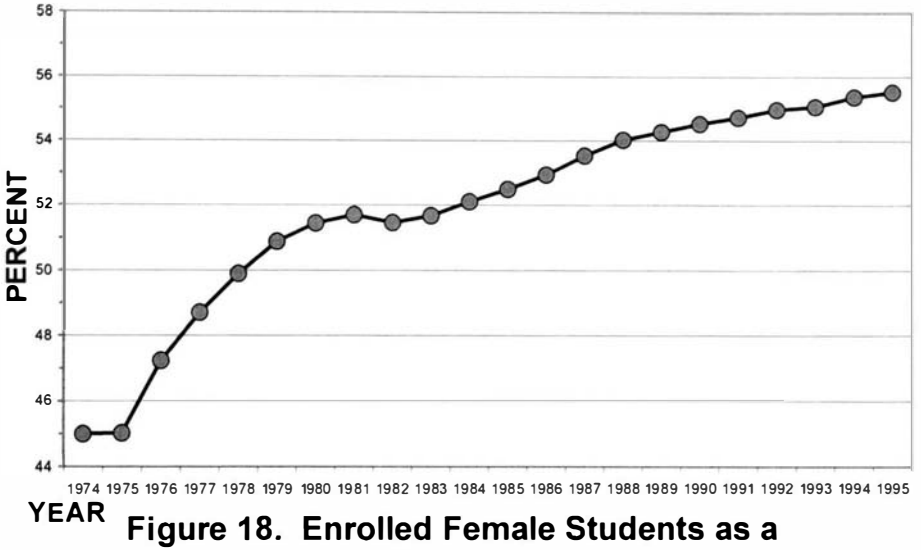

Figure 18. Enrolled Female Students as a Percent of Total Enrollment

The number of enrolled female students increased from 4.6 million in 1974 to 7.9 million in 1995. The number of enrolled male students increased from 5.6 million in 1974 to 6.3 million in 1995. The data show that female students accounted for 45 percent and male students were 55 percent of the enrolled students in 1975. In 1995 female students accounted for 56 percent and male students 44 percent of the enrolled students.

Linear regression was used to determine if the percent of enrolled female students increased over this 22-year period. The coefficient of the dependent variable (time) was 0.45392. The R-Square was 0.88 and the one-sided p-value

was $3.75 * 10^{-11}$. This research concludes that there has been a continuous rate of growth in the percentage of enrolled female students since 1974. In 1980 the number of enrolled female students equaled the number of enrolled male students. The regression equation is:

$$\mathbf{Y = 0.45392\ t - 848.86}$$

where Y= percent of female enrolled students to total and t = time in years. The data used for this analysis can be found in Table 10 on page 108.

Table 10 Total Fall Enrollment				
YEAR	All Enrolled Students	Enrolled Male Students	Enrolled Female Students	Percent Enrolled Female Students to All
1974	10,223,729	5,622,429	4,601,300	45.01
1975	11,184,859	6,148,997	5,035,862	45.02
1976	11,012,137	5,810,828	5,201,309	47.23
1977	11,285,787	5,789,016	5,496,771	48.71
1978	11,260,092	5,640,998	5,619,094	49.90
1979	11,569,899	5,682,877	5,887,022	50.88
1980	12,096,895	5,874,374	6,222,521	51.44
1981	12,371,672	5,975,056	6,396,616	51.70
1982	12,425,780	6,031,384	6,394,396	51.46
1983	12,464,661	6,023,725	6,440,936	51.67
1984	12,241,940	5,863,574	6,378,366	52.10
1985	12,247,055	5,818,450	6,428,605	52.49
1986	12,503,511	5,884,515	6,618,996	52.94
1987	12,766,642	5,932,056	6,834,586	53.53
1988	13,055,337	6,001,896	7,053,441	54.03
1989	13,538,560	6,190,015	7,348,545	54.28
1990	13,818,637	6,283,909	7,534,728	54.53
1991	14,358,953	6,501,844	7,857,109	54.72
1992	14,486,315	6,523,989	7,963,370	54.97
1993	14,304,803	6,427,450	7,877,353	55.07
1994	14,278,790	6,371,898	7,906,892	55.38
1995	14,261,781	6,342,539	7,919,242	55.53

Source: U. S. Department of Education, *Digest of Education Statistics, 1996, 1997.*

Using the data for total faculty discussed in Section 1, the percent of female faculty members and the percent of enrolled female students over the time period 1974 – 1995 were plotted in Figure 19. By graphing the percents, it is possible to determine if the growth pattern in one population reflected a change in the other. This research will test the Hypothesis stated below.

Hypothesis 6: The percent of female faculty to total faculty has increased when compared to the change in the percent of enrolled female students to all enrolled students over the time period.

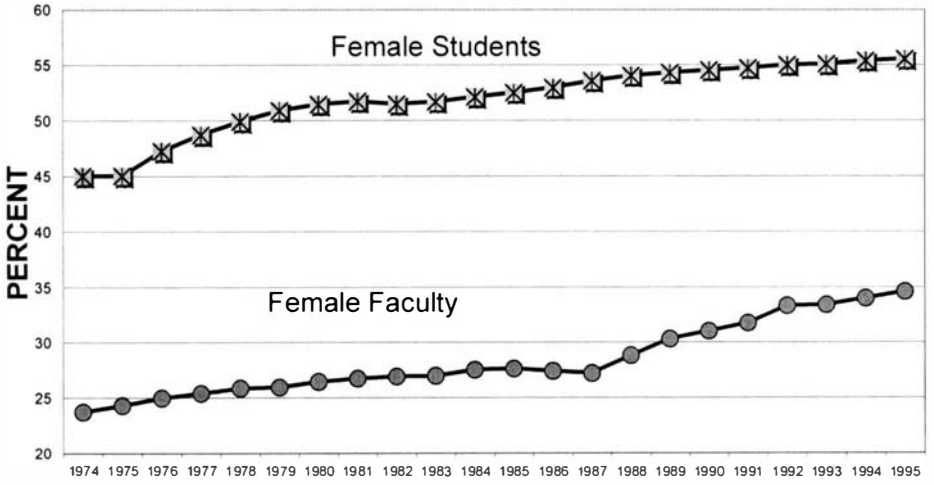

Figure 19. Female Faculty as a Percent of all Faculty and Enrolled Female Students as a Percent of Total Enrollment

Female faculty grew 10.9 percent of total faculty while enrolled female students increased 11percent when comparing the percent of each in 1974 to 1995. In 1974 for every 53 female enrolled students there was 1 female faculty member. In 1995 for every 42 female students there was 1 female faculty member. The change in the percent of faculty that were female (10.9) appears to follow the change that occurred in the percent of enrolled female students (11.0) over this time period. However, female faculty members as a percent of total faculty were 23.7 percent in 1974 and increased to 34.6 percent in 1995 while female enrolled students as a percent of total enrolled students were 45 percent in 1974 and increased to 55.5 percent in 1995. Faculty data can be found in Table 1 on page 59 and the enrollment data is listed in Table 10 on page 108.

Conclusion: From these data it is clear that the change in the number of female faculty members as a percent of total faculty does closely mirror the change in the number of enrolled female students as a percent of total enrolled students on college campuses. A female student was more likely in 1995 to have one or more classes with a female faculty member than they were in 1974. The gains that were made in the increase of female faculty over this time period were partially offset by an equal increase in the percent increase in the number of female students.

Over the past 15 years the enrollment of female students in college programs has continued to increase at rates greater than male students at the undergraduate and master's level. A slower growth rate has occurred at the doctoral degree level. Fewer women advance to this level of education. This directly impacts the pool for female faculty.

Chapter Summary: There are more women in the classroom as faculty and as students today. This increase in number is not reflected in the percent of females with tenure or in the percent of average salary that female faculty receive. This implies that higher education opportunities have become more accessible to females since 1974 but that gains toward equity with their male counterparts have not materialized. The current research findings included the following;

- a slow rate of growth in the percent of women faculty members,
- a sex-based inequity in average salary compensation,
- an increase in the tenure gap percent by sex, and
- the increase in the percent of female faculty members, was not greater than the increase in the percent of women with doctoral degrees.

Chapter V

Conclusion

This research examined the status of women faculty employed in colleges and universities in the United States over the time period 1974 to 1995. Historical inequities against women in the academy resulted in legislative intervention that sought to improve these conditions. This research used the axioms defined in the Equal Opportunity Theory to evaluate the status of women faculty members over this time period. Status was defined as the position or condition of female faculty in relation to male faculty. Change in the status of female faculty was determined by evaluating sex-related differences in the number and percent of total faculty, average salary earned, average salary earned by rank, tenure status, number of doctoral degrees earned, and the total number of students enrolled in higher education over this time period. The data were analyzed by determining percentage changes, plotting the data, and using linear regression when appropriate.

The history of women's work experiences, educational experiences, and academic faculty experiences were examined to provide information and possible understanding about how and why women's experiences in these areas differed from those experienced by the white male in this country. An examination of some of the legislative changes impacting these experiences was included in the literature review in Chapter II. The analysis and examination of these

experiences provided a plausible explanation for the results found in this research. The corresponding legislative interventions provided a lens to examine what was occurring politically, the resulting work and educational policies that were enacted and a time frame for this study.

The research results can be found in Table 11 on the following page. The following conclusions were made in evaluating the status of women faculty in relation to male faculty.

- The number and percent of female faculty have increased.
- The average salary for female faculty has not increased.
- The average salary for female faculty with the rank of instructor has not increased. Female faculty at this rank has the smallest gap in average salary compensation.
- The average salary for female faculty with the rank of assistant professor has not increased. The last four observations show an upward trend for female faculty.
- The average salary for female faculty with the rank of associate professor has not increased.
- The average salary for female faculty with the rank of full professor has not increased. Female faculty at this rank shows the largest gap in average salary compensation.
- The percent of tenured female faculty compared to the percent of tenured male faculty has not increased.

Table 11: Summary of Research Findings					
Hypothesis	Group	Slope Coefficient	1-Sided P-Value	Analysis Used	Conclusion
#1	Women Faculty	0.4862	1.52E-12	Plotted data and Regression	Increase
Group of Salary Related Hypotheses					
#2	All	-0.00042	0.51	Plotted data and Regression	No Increase
#3A	Instructors	-0.01803	0.74	Plotted data and Regression	No Increase
#3B	Assistant	-0.6866	0.95	Plotted data and Regression	No Increase
#3C	Associate	-0.05117	0.99	Plotted data and Regression	No Increase
#3D	Professor	-0.02645	0.90	Plotted data and Regression	No Increase
#4	Percent Female vs Percent Male Tenured Faculty		N/A	Plotted Data	No Increase
#5	Percent Female Faculty vs Female Doctoral Recipients		N/A	Plotted Data	No Increase
#6	Percent Female Faculty vs Percent Enrolled Female Students		N/A	Plotted Data	No Increase

- Female faculty as a percent of all faculty members did not correspond to the change that occurred with female doctoral recipients as a percent of all doctoral recipients. Female doctoral recipients as a percent of all doctoral recipients have increased.
- Female faculty as a percent of all faculty members did correspond to the change that occurred with enrolled female students as a percent of all enrolled students. The initial gap in 1974 remained in 1995 when comparing these percentages.

Overall, female faculty members, female doctoral recipients, and enrolled female students in number and as a percent of total have increased over the time period 1974 – 1995. The increase in the numbers of female faculty has not been reflected in equitable salary compensation for women. Overall female faculty as a group are paid less. When comparing salary compensation by rank the gap has increased or remained practically constant for assistant professors, associate professors and full professors over the time period. A decrease in the salary gap only occurred at the rank of instructor for women. An explanation for this occurrence is that new hires are paid less than experienced faculty. If the group that make up the majority of new hires earn less than the larger experienced group the overall average compensation is more equitable. The less experienced group (instructors) cannot be

compensated using possible subjected criteria (research records, teaching performance, or service). This criteria needs to be developed by both men and women entry-level faculty as their career develops within the academy.

The gap between the percent of female faculty members with tenure when compared to the percent of male faulty with tenure has actually increased in favor of male faculty over the 22 years this research reviewed. To achieve tenure status at most higher education institutions a faculty member has to be identified as a tenure track employee. Women faculty members compared to men faculty members were found to be twice as likely to be in non-tenure track positions (NCES. 1997, pp.1-2). This could account for the results found in this research. The data used included non-tenure track faculty by sex. If the data only accounted for tenured faculty that were in tenure track positions the resulting percent may have portrayed a different outcome.

Based on the criteria defined to determine if the status of female faculty members have changed over the time period 1974 to 1995, this research concludes that superficial changes have occurred in the number of female faculty and the pool for female faculty. The financial compensation (measurement of worth) has not improved over this 22-year period. The percent of female faculty receiving tenure have not improved when comparing this portion with the percent of male faculty with tenure. This implies that women continue to gain tenure at a lower rate of growth.

Reasons for Findings: The decision based variables used (number of faculty, salary, tenure status, doctoral degrees, and enrollment) to evaluate the status of women faculty members over the time period 1974-1995 are all affected by the socialization process of women in the United States. How children are socialized and their potential opportunities in and out of academia are defined by society at large impacts the pool of future female faculty members.

When structural barriers exist in academia that impede women, equal opportunity, as defined by the theory discussed in Chapter I, cannot be achieved. These barriers can exist in the, education process, hiring process, salary rewards, promotion process, and in the process of allocating resources that improve faculty opportunities. Barriers result in an inefficient allocation of faculty resources and in this specific case, for female faculty. This inefficiency does not allow the `society' referenced in axiom 5 of this theory (defined as faculty in academia), to optimize all of its resources. In higher education, until opportunity is sex-neutral and the defined structure for promotion encompass the unique `voice' of women faculty, the status of women faculty when compared to their male counterparts at every rank will not be equitable.

The changes that have occurred in how women are viewed in society can account for many of the changes that have occurred in the career decisions that women have made and are currently making in and out of academia. This

research reviewed the literature to determine how the socialization of women and how the role of gender impact the decisions women make in pursuing non-traditional careers. Understanding that gender perceptions impact human development, career choices and opportunities, and life decisions for women and men offers an explanation for the changes that have occurred in the status of women faculty since the early 1970s. The possible consequences, when women step outside of traditional career paths like academia, are discussed. The following literature review offers one explanation.

Socialization of Women: Gender is defined by patterns of learned behavior that are considered appropriate either for women alone or for men alone. Historically, most of the defined values for women have been articulated in relation to men, rather than independently in terms related to women as a group. Stereotypes that are gender based inevitably restrict women. Gender is at the core of values and beliefs. It is difficult to formulate a clear idea of self without associating it with gender. Expectations of gender vary dramatically between social classes and ethnic groups, as well as, in different historical and cultural settings (Hall, 1992, pp. 34-35).

Gender expectations are first internalized in the family. The most basic way to accomplish changes in gender expectations in society at large is through the early socialization of our children. It is not that communicating the content of particular roles for women and men is essential to constructive socialization, but

rather that it is essential to create conditions that will foster the autonomy and independence of both girls and boys (Hall, 1992, p. 34).

Helen Astin defined socialization as the process of bringing the individual, particularly the child, to understand and accept the customs, standards, traditions, and culture of the group of which he or she is a member and to cooperate actively with that group. Sociologists have documented that parents based on their perception of the child's gender identification have different expectations and therefore encourage different behavior in their children. The child's sex determines what and how they teach their children. Through parental behavior and interactions children quickly categorize themselves as either male or female, and realize the expected limitations of either role. The socialization of children directly impacts their self-concept, self-esteem, and their values for self-worth (Gappa, 1979, p.29; White, 1992, pp.22-23).

Girls can remain dependent and infantile longer than boys can because the dependency, fears, and affection seeking that are normal in early childhood for both sexes are defined as feminine in older children. Boys, unlike girls, at an early age are not expected to show hurt and disappointment. Boys are pushed to develop internal, independent sources for good feelings about themselves. Girls tend to continue in the affectionate, dependent relationships that are characteristic of all young children. At greater rates than their male counterparts, girls will continue for an extended period of their lives to value the self as a function of reflected appraisals (Hansen, 1995, p.48; Bardwick, 1970, p.4).

Historically, women's lives and their experiences have been explained in terms of men's lives by comparing and contrasting experiences that were both common as well as unique to each. When marked differences occurred in the life experiences of women these differences were pushed aside and explained by women's inability to follow the norm. Some of these differences resulted in successful careers, going against traditional society expectations, and consequently, succeeding in traditional male environments. Gilligan states that "only when life-cycle theorists divide their attention and begin to live with women as they have lived with men will their vision encompass the experience of both sexes and their theories become correspondingly more fertile." She argued that the representation of women's development throughout the psychological literature has not been inclusive when it comes to certain truths about the lives of women (Gilligan, 1982, pp. 1-2).

Expectations and conflicting signals: Matina Horner agrees with Gilligan that in theory and in practice the role of women in American society has over the years been little understood and much ignored by psychologists (Bardwick, 1970, p. 45). She believes that femininity and successful achievement are two inconsistent notions in today's society. Horner wrote about a peculiar paradox that arises in this society because of an educational system that ostensibly encourages and prepares men and women identically for careers that social and, even more importantly, psychological pressures really limit to men.

This paradox is reflected by the feelings of the women who overcome these pressures and pursue careers that are dominated by men. Many of these women experience feelings of anxiety and guilt. They may also feel unfeminine and selfish because of their career choices (Bardwick, 1970, p.45). When women find themselves in working environments that do not embrace them, the feeling of exclusion tends to result in lower job satisfaction, fewer promotions, a decrease in self-value, and an increase in feelings of inadequacy. Women that succeed in this type of environment possess a strong sense of self, have dealt successfully with their internal conflicts for the need to be constantly praised and reassured, have resolved any role conflicts, and have given priority to their career (White, 1992, p.115).

Horner's research suggests that even if female students perform well and are academic achievers, their inner conflict, fostered by society's expectations, will lead them to lesser demanding career choices. This can be observed by documenting traditional parental behavior and expectations. Parents support their children and encourage them to go to college and become independent. Then they and other well meaning friends badger the daughter with questions of marriage and starting a family. This sends mixed messages to the woman that no matter how well she performs, she needs the spouse and the children to be completely validated by society or more importantly by her family (Bardwick, 1970, pp.67-71; White B. and Cooper, 1992).

Earlier work by several prominent sociologists showed that the rewarding

of self-reliance by parents would result in high achievement motives in their children as adults. Horner's research determined that despite the prevalence of these values in most middle-class American homes, femininity and individual achievement continue to be viewed as two desirable but mutually exclusive ends (Bardwick, 1970, pp.45-46). This has resulted in fewer women in high-level management, politics, and higher education. Instead many women continue to be employed as support staff, in non-technical, and in undervalued positions (Hansen, 1995, pp.53-56).

Career choices, rewards, and perceived career possibilities for women are directly related to how they collectively and individually value society's expectations, traditions, and approval. Only when women can see themselves effectively assuming career paths without guilt will they be able to pursue lines of work in their own real interest. Putting societal expectations aside, self-evolved women are able to choose the arena for their work based on their strengths and preferences (Hall, 1992, pp.60-61).

Summary of Socialization Literature: Although women and men are expected in society to achieve, become self-reliant, and reach their full potential, women traditionally have been evaluated differently in their quest to attain these goals. The basis for Equal Opportunity and the theory discussed in Chapter I relies on the right of the individual, regardless of sex, to a fair chance to realize one's realistic goals. Overwhelmingly, documented in the literature is the belief

that society still view a woman's ultimate position is to procreate, nurture her children, and take care of the home. Ultimately, both women and men want to be valued and rewarded in the society in which they live. The literature suggests that the criteria for validation and achievement are still gender specific and the current research findings on the status of women faculty agree.

Additional Explanations for Research Findings: This research used national data that indicated few improvements for women faculty in gaining equity with men faculty. However the reviewed literature indicate that this inequity does not exist at all institutions of higher education or at all levels within these institutions. At some institutions women faculty may be treated equitably, but the United States is a country known to stand for equal treatment for all citizens, not just some. The minimal changes that have occurred in status of women faculty over the time period 1974 –1995 could be attributed to following reasons:

- Apathy toward the enforcement of equity legislation by the administration within the institutions of higher education.
- Minimal sanctions and removal of government dollars levied on institution that do not comply too the enacted legislation.
- Continuance of structural biases practiced within the hallowed halls of higher education.
- The quiet acceptance of subjective criteria to promote and hire faculty by

other faculty members.

- Fear of reprisals when you oppose the established practices within the institution.
- A small number of women in administrative decision making positions in higher education.
- The values of the academy were formed by males and may not encompass the values that are important to women.
- Women are socialized differently than their male counterparts and this difference is exacerbated in the male structured academy.

Recommendations: Significant work still remains to bring women faculty into an overall equitable position relative to men faculty. Women faculty cannot assume that institutions of higher education actively comply to mandated or enacted legislation. The interpretation of any law is subjective. Therefore the innate beliefs and attitudes of the primary administrators at each institution determines what level of compliance constitutes adherence to the equity legislation discussed in Chapter II. Women faculty should emulate the actions of the National Organization for Women (NOW) during the late 1960's. This organization (NOW) focused its' energy towards changing the guidelines of the EEOC to address the sex equity issue included in Title VII. Women faculty members should unite and become the strongest advocates on their campus for equitable treatment in the areas of hiring, promotions, salary compensation, and

work assignments for all.

This research found minimal changes in the status of women faculty in the United States over the time period 1974-1995. Women faculty and administrators in higher education should speak loudly of their experiences in higher education to acquaint policymakers and the academic community of any experienced inequities. They have to become the strongest and loudest advocators to improve their status. This can be achieved with continued research evaluating the status of women faculty at every academic level i.e. college, university, by state, by region, and nationally. The consciousness of the academe on all levels (students, staff, faculty, and administrators) needs to be raised to change any sex-based values at all academic institutions.

The data collection process for faculty information, currently financed by the Department of Education, should be expanded to collect more sex-based data. Collected data should include faculty data by rank, tenure, tenure track, non-tenure track, salary, full-time status, part-time status, research publications, teaching loads, employment by type of institution (research, teaching, public, or private) and by locality (region and state). Data should be collected annually. Increased accuracy in the measurement of status for female faculty can be found and monitored if a complete set of data exist with these sex-based measurements. Funding to collect and compile data and encourage research on the status of women faculty should continue. Female students enrolled at the undergraduate and masters-level should be made aware of careers in academia.

An aggressive campaign should be implemented to recruit them for all doctoral degree programs; with a greater emphasis in areas where male faculty remain dominant. This may increase the pool of potential female faculty hires.

Future Research: This project is a platform that can be used to launch future research in the area of women issues in higher education. Some of the questions that need to be addressed are listed below.

- What is the role of legislation in accomplishing a positive change in the status of women faculty?
- What should be the current political agenda for women faculty?
- What should the agenda include to help improve the current status of women faculty?
- What can women do to accomplish positive change in their current status within these institutions?
- What constitutes an acceptable change in the status of women? Is parity with male faculty feasible? Reasonable?
- What historical data are available to measure differences by discipline in the salary received by sex?
- What role does society play in determining the position that women currently hold in the academy?
- What changes can be made in the socialization of men and women in and out of the academy that can impact the status of women faculty in

the academy?

Conclusion: The reviewed literature suggests and the research data concur that women faculty members continue to disproportionately attain access to opportunities (salary, tenure status, faculty to doctoral recipient ratio, and faculty to enrolled student ratio) in higher education. The socialization literature offers the explanation that some women do not seek these opportunities (because of how they are socialized) thus, resulting in the inability of the members of this group to fully capitalize on or actively pursue possibilities in non-traditional careers. Therefore, one can conclude that the propositions defining equal opportunity theory have not become a significant part of the society defined as higher education faculty.

The goal of this research was to determine based on listed criteria what changes have occurred in the status of women over a 22-year period in the United States. The findings are clear that although improvement was made in the number of women faculty, no improvements have occurred in the areas of salary compensation and tenure status when compared to men faculty. This study leaves a host of unanswered questions that need to be addressed by future researchers.

Since 1974 women have been allowed to enter the doors of the academe as faculty and students in greater numbers. Some have actually risen to the upper floors of these institutions by progressing through the ranks. By and large

most of them remain on the lower floors providing the numbers that society has insisted upon through legislative intervention. This behavior has been mirrored and documented in private enterprise and is referred to as the `Glass Ceiling' phenomena. Until changes in the male defined culture perpetuated and accepted in the academy occurs, there will be little improvement in the status of women faculty.

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