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An Analysis of Gender-Based Pay Equity of Instructional Faculty Members
in the Virginia Community College System

A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Education

by

Mary Beth Page

August 2009

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Dr. James Lampley

Dr. Jasmine Renner

Dr. Carla Warner

Keywords: Salary, Equity, Adams, Gender, Community College

ABSTRACT

An Analysis of Gender-Based Pay Equity of Instructional Faculty Members

in the Virginia Community College System

by

Mary Beth Page

Based on the premises of “Equity Theory” (Adams, 1963), this study evaluated the Virginia Community College System compensation rates and compared the salaries of similarly ranked and similarly qualified male and female faculty members. A quantitative analysis was conducted of the reported salaries of all full-time instructional faculty members in the Virginia Community College System in the Fall of 2006. The specific areas examined included salary, rank, highest degree earned, and full- or part-time employment status. Using the tenets of Equity Theory as a foundation, this study evaluated any differences in the compensation and rank between male and female faculty members to determine the “fairness” of salary policies.

The population of this study included all instructional faculty members employed during academic year 2006-2007 in the 23 community colleges in the state of Virginia.

Results of this analysis indicated that there were differences based on gender in the mean salaries of faculty members of the Virginia Community College System at the professor faculty rank for VCCS faculty members outside of Northern Virginia Community College and at the associate professor rank at Northern Virginia Community College.

Findings of this study further indicated that faculty members in the Virginia Community College system overall were slightly more likely to be female, hold master's degrees, and hold assistant professor rank. Findings indicated that both males and females were equally likely to be employed as part-time faculty members in the Virginia Community College System and that both education and experience contributed significantly to salary in the Virginia Community College System.

DEDICATION

This study is dedicated to my mother who died too young in life to see her influence on her seven children and to my father for his insistence upon the opportunity for an education for my siblings and me that he was never afforded. I also dedicate this to my six brothers who provided me with the life experiences that allowed me to endure higher education!

To my husband, children, and grandchildren; thank you for your patience and understanding for the last 6 years as I have been immersed in this period of self-growth. Your love and support mean the world to me.

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CHAPTER 1

“The barriers for women in higher education not only raise questions of basic fairness, but place serious limitations on the success of educational institutions themselves”.

Martha West, American Association of University Professors (2007, p. 4).

INTRODUCTION

Background of the Problem

American Community Colleges have historically proven appealing and accessible to women for a variety of reasons. In the early years on some campuses, more than 60% of the students were women who were preparing to be grammar school teachers. And in the current population of students on community college campuses, we still find that about 58% of the population is female. The reasons women continue to attend community colleges are still varied but frequently include close proximity to home and family (AACC, 2007).

History also reveals that throughout the history of the Virginia Community College system, we also have seen increasing percentages of female students. Indeed, of the originally targeted audiences specified during the creation of the Virginia Community College system, women have made up more than half of the student body since 1987 (Vaughn, 1987, VCCS, 2007).

In the fall of 2006, there were almost 160,000 students enrolled in Virginia Community Colleges and of those 59% were female (VCCS, 2006). There were over 2,100 full-time instructional faculty members and of those 51% were women. There were more than 5,400 total part-time instructional faculty members and of those 46%

were women. It would appear that campuses in the VCCS system have retained their appeal to women both as students and as employees. One of the strongest motivations available to assist the VCCS in retaining its strong support for female students is by the recruitment and retention of female faculty members.

Recruitment of faculty members is an important and long-term investment and finding the best possible match for open positions should be of utmost priority (Janzen, 1994). Community colleges nationwide are in the beginning stages of a large turnover of faculty members due to impending retirements and, according to Murray (1999), this will trigger the simultaneous hiring of large numbers of faculty, thus forever changing the landscapes of their institutions. The hiring practices observed during these times will soon reveal the level of successful implementation of current salary equity policies. The importance of informed recruitment and hiring practices for community college faculty was also confirmed in a study by Winter and Kjørliien (2000).

According to Ehrenberg, a labor economist at Cornell University and former chairman of the AAUP's Committee on the Economic Status of the Profession, pay differentials among faculty members, especially on the same campus, made it difficult to promote cohesion and a commonness of purpose. Ehrenberg also asserted another factor in this equation was that high salaries would be required in order to attract and retain the kind of faculty members needed to ensure excellence (AAUP, 2003).

According to Curtis, the director of research and public policy with the American Association of University Professors:

“The financial well-being of faculty members and the value of students' educations are closely connected. Low-income students may be left doubly disadvantaged- unable to win admission to universities that can attract top faculty talent with competitive salaries, and unlikely to receive the kind of education at

the colleges they do attend that allows them to pull ahead after graduation” (Millman, 2007, p.A11).

This statement should be of significance for an academic organization such as the Virginia Community College System where over 31% of all full-time student receive financial aid with some member institutions reporting this rate to be as high as 70% (VCCS, 2006).

Instructional faculty members are frequently drawn to the community college setting because of their love for teaching and students as opposed to research. Understanding of and commitment to the community college mission are important factors in community college faculty members’ decisions about how long to stay. As we examine the available research to determine other possible motivating factors, concerns about salary and rank take center stage.

According to the United States Bureau of the Census, in 2000 the average woman earned \$.80 for every \$1.00 the average man earned, and in 2006 the average woman earned \$.77 for every \$1.00 the average man earned. Although there has been much written about disparities in pay for women in various sectors, studies of pay equity in college or university settings have been relatively infrequent, and few, if any, have been conducted in community college settings despite the heavy presence of females. Salary equity is an ongoing concern for the AAUP (American Association of University Professors) as well as numerous women's and human resource professional organizations.

Purpose of the Study

Based on the premises of “Equity Theory” (Adams, 1963), this study evaluates the Virginia Community College System compensation rates and compares the salaries of similarly ranked and similarly qualified male and female faculty members.

Adams (1963) first described equity theory by defining the existence of inequity as "...whenever [a person's] perceived job inputs and/or outcomes stand psychologically in an obverse relation to what he perceives are the inputs and/or outcomes to others" (p.424). In other words, we perceive our ratio of efforts or rewards as equitable if it is similar to the ratios of others in our comparison group. We perceive our efforts or rewards to be inequitable when there is a difference (usually negative) from others in our comparison group.

Adams described inequity as occurring due to perceived under-reward or over-reward based on self-assessment of input. This inequity causes cognitive dissonance, which employees are motivated to reduce through various actions. These actions may include an increase or decrease in input, a request for a raise, or a search for a new job. The entire process is predicated on the universal desire for a "fair" working environment for all employees.

In 1999, one of the predominant researchers in the field of higher education pay equity studies, Toutkoushian, defined equity as all employees having "...equal opportunities to pursue desired employment options for which they are qualified, and are rewarded in a similar manner conditional on their professional accomplishments" (p. 680). According to the American Association of University Women (2005), a college-educated woman working full time earned an average of \$46,000 per year, compared with an average of \$62,000 for a college-educated man. This was a difference of \$16,000. In the state of Virginia, 32% of women had college degrees, which meant that Virginia ranked ninth in the nation in the proportion of women who were college graduates. The median annual salary for those college-educated women was \$47,387 which ranked 10th

in the nation. Even though this annual salary exceeded the national average and was among the top 10 in the country, the earnings ratio between college-educated men and college-educated women in the state of Virginia was 67%, which ranked Virginia at the 49th spot.

Research Questions

When assessing gender equity in a national faculty study, the American Association of University Professors (2006) used four primary indicators. Those indicators included: 1) employment status (full time versus part time), 2) tenure status, 3) full professor rank and 4) average salary. This study focuses on three of the four same indicators. Tenure will not be included in this study because the Virginia Community College System discontinued the use of tenure for faculty members in 1972. Faculty rank in the VCCS includes: instructor, assistant professor, associate professor, and professor.

Question 1: Average salary

1) Is there a difference in mean salary between male and female full-time faculty members of the Virginia Community College System by rank when controlling for years in rank?

Question 2: Rank

2) Is there a difference in the proportion of male and female faculty members of the Virginia Community College System by rank?

Question 3: Highest degree earned

3) Is there a difference in the proportion of male and female full-time faculty members of the Virginia Community College System by highest degree earned?

Question 4: Full-time versus part-time

4) Is there a difference between males and females in the proportion employed as part-time faculty members in the Virginia Community College System?

Hypotheses

From the research questions, the following hypotheses were developed:

Question 1: Average salary

H₀1: There is no difference in mean salary between male and female full-time faculty members of the Virginia Community College System by rank when controlling for years in rank.

Question 2: Rank

H₀2: There is no difference in the proportion of male and female faculty members of the Virginia Community College System by rank.

Question 3: Highest degree earned.

H₀3: There is no difference in the proportion of male and female full-time faculty members of the Virginia Community College System by highest degree earned.

Question 4: Full-time versus part-time.

H₀4: There is no difference between males and females in the proportion employed as part-time faculty members in the Virginia Community College System.

Significance of the Study

In the state of Virginia, approximately 67% of all undergraduate students are enrolled in community colleges and, of that student population, the majority are female (VCCS, 2006). The administration of the VCCS at both the system office and on the 23 separate campuses devote much time and effort to the retention of students and those

happen to be primarily female students. A parallel issue is the retention of female faculty members to serve those students.

While several studies have focused on the satisfaction and motivation rates of faculty and staff in community college settings (Geiger, 2002; McCracken, 2001; Rice, 2003; Worley, 2006), there is little research available evaluating the specific salary schedules for instructional faculty members in a community college setting. Indeed, Winter (1996, 1998) observed that few empirical studies of any kind regarding any faculty recruitment or hiring measures have been completed.

Using the tenets of Equity Theory as a foundation, this study evaluates any differences in the compensation and rank between male and female faculty members to determine the “fairness” of salary policies.

Definitions

For purposes of this study, the following definitions are used:

1. *Cognitive dissonance*: “Two cognitions which, psychologically, do not fit together” (Festinger & Carlsmith, 1959, p. 203).
2. *Equity Theory*: The process in which “individuals engage in social comparison by comparing their efforts and rewards with those of relevant others. The perceptions of individuals about the fairness of their rewards relative to others’ influences their level of motivation” (Adams, 1963, p. 424).
3. *Gender*: Either male or female.

4. Virginia Community College System (VCCS) - The community college system of the Commonwealth of Virginia consisting of 23 separate colleges.
5. Northern Virginia Community College (NVCC) - One of the 23 community colleges in the Virginia Community College System.
6. *Instructional faculty*: According to the VCCS Policy Manual; Section 3.5

Faculty Responsibilities:

The primary responsibility of teaching faculty is to provide quality instruction within their area(s) of expertise. The major emphasis shall be on teaching, by working with students in classrooms, laboratories, individual conferences, and related activities to help the students develop their interests and abilities to the fullest capacity to become better persons, better workers, and better citizens.

7. *Adjunct faculty*: According to the VCCS Policy Manual; Section 3.0.5

Adjunct Faculty:

Adjunct faculty are employed to teach less than a normal faculty load or to teach less than a full session on a semester by semester or summer term basis. The adjunct faculty contract contains no guarantee of continued employment.

Delimitations and Limitations

1. This study is delimited to an investigation of instructional faculty members in Virginia's 23 community colleges and its associated satellite campuses. The findings of this study cannot be generalized to other state community college systems or other colleges and universities.

2. This study is also limited to an analysis of quantitative data and does not explore possible unrealized influences.

3. This study is also limited by the inclusion of only six demographic variables, those of gender, age, rank, years in rank, highest degree earned, and years since highest degree.

4. Not all possible variables that could impact salary and rank status are included in the study.

5. This study is not directly designed to address concerns regarding salary compression for senior faculty.

6. As a female full-time mid-level administrator as well as an adjunct faculty member at Virginia Highlands Community College, a member institution of the VCCS, I have a potential personal interest in the outcome of the study. Therefore, it is my responsibility to ensure that the study is objective and my own personal biases are not reflected in the outcomes of the study.

Overview of the Study

This dissertation is organized into five chapters. Chapter 1 provided an introduction to the study including a statement of the problem, research questions, significance of the study, definitions of terms used, and delimitations and limitations. Chapter 2 includes a literature review of relevant studies and issues. Chapter 3 focuses on research design and methodology. Chapter 4 presents the findings of the study and relevant discussion. Chapter 5 includes a summary of the data analysis, conclusions, and recommendations.

CHAPTER 2

Background and History

During the First World War, women were hired by manufacturers to fill jobs that had been vacated by men who went to serve in the military. As required by the U.S. War Labor Board, the women were paid the same wages as the men who previously had held the jobs (Lee, 1942). During World War II, a vast number of women gained employment outside their homes, many for the first time, in the major war industries. Once again, the War Labor-Board governed the wages paid to these women to ensure equity (p.1).

In the post-war years, there were many unsuccessful pay equity bills introduced into Congress. But finally, President Kennedy signed the federal Equal Pay Act (EPA) in 1963. For the first time in American history, employers were required to compensate all employees equally for equal work. At that point in time, women earned about 60 cents for every dollar earned by men. The following year, Title VII of the Civil Rights Act of 1964 was passed by Congress. This provided additional protection for women by declaring sex discrimination to be illegal. This was followed by Title IX of the Higher Education Amendments of 1972, which made sex discrimination illegal in education settings (AAUW online museum).

In May of 2007, a pay discrimination case reached the Supreme Court. The court subsequently vacated a landmark ruling in favor of Lilly Ledbetter versus Goodyear Tire and Rubber, Co., Inc. by declaring that although her employer had discriminated against her by paying her less than comparable male employees, her claim had been filed too long after the original decision. And although it was decades later that Ms. Ledbetter discovered the pay disparity, subsequent paychecks based on the original discriminatory

decisions were not “new” incidents upon which she could file a claim (Ashton & Feldman, 2007).

As a result of that ruling a new law was crafted and on January 29, 2009, President Barack Obama signed the Lilly Ledbetter Fair Pay Act as his first official bill. This bill reinstates as law the policy practiced by the Equal Employment Opportunity Commission (EEOC) that views each paycheck based on a discriminatory act as a new event thus extending the opportunity to file a discrimination claim for unfair pay practices. President Obama stated that he was signing this bill:

“...not just in [Lilly Ledbetter’s] honor, but in honor of those who came before her. Women like my grandmother, who worked in a bank all her life, and even after she hit that glass ceiling, kept getting up and giving her best every day, without complaint, because she wanted something better for me and my sister. And I sign this bill for my daughters, and all those who will come after us, because I want them to grow up in a nation that values their contributions, where there are no limits to their dreams and they have opportunities their mothers and grandmothers never could have imagined...” (FDCH Political Transcripts).

Women in the United States

According to the U.S. Census Bureau, as of 2007, the current United States population was 51% female (2007). The Census Bureau projected that women would earn 59% to 60% of the bachelor’s and master’s degrees awarded during the 2007-08 academic year as well as 52% of first-professional degrees (Census Bureau, 2007).

The census bureau also reported that in 2006, 59% of all females 16 and over were part of the labor force, as compared with 74% of all males 16 and over. An analysis of workers in managerial, professional, and related occupations revealed that 37% of females 16 and over were employed in such positions, as compared with 31% of men 16 and over. The census bureau also reported that in 2006, women owned 28% of all

nonfarm businesses in the United States. These businesses were primarily in the health care, social assistance, and other service-related industries.

Cultural issues and gender-role beliefs have played a strong part in the valuing of employment and have contributed to the pay gap in academe throughout our history (Ferber & Loeb, 1974, p.69). The idea that female faculty members historically have been paid a lesser salary because they "...do not need an income as badly as men because they do not have a family to support" seems to have residual effects regarding an employer's perception of the mobility of their female employees and the assumption of spousal commitment to the male partner's employment success (Toutkoushian, Bellas & Moore, 2007).

Equity Theory

Adams apparently first described the concept of equity in the workplace (1962). Based on his research at the General Electric Company in New York City, Adams observed that fairness and equity in the workplace involved a perception of "justice" that was the foundation of the relationships between employees and their employers. Adams said that employees gauged that sense of fairness or justice based on observations and knowledge of their peer groups. A sense of unfairness or dissonance between an employee's contributions on the job and his or her rewards on the job would result in some type of action on the part of the employee in order to reduce the pressure of the cognitive dissonance. Employees will either increase or decrease their work, based on perceived inequity, or will leave the company.

A foundational component of equity theory is the concept of cognitive dissonance, which Festinger and Carlsmith (1959) defined as "...two cognitions which,

psychologically, do not fit together” (p. 203). The resulting pressure from that dissonance was found to motivate a person to find some way to relieve the pressure by changing either cognitions or behaviors. Studies by Festinger indicated that an increase in reward also would alleviate the dissonance as well as increase productivity (p.209).

The ability to retain instructional faculty members is vital to the future of any educational institution and employee satisfaction is a key component. It is in a college’s or university’s best interest to understand all the different influences on employee satisfaction in order to increase the institution’s effectiveness or productivity (Thompson, 2001). Salary has been noted to be one of the key potential factors in the occurrence or prevention of dissatisfaction (Herzberg, 1966).

In a study entitled *Culture, Climate, and Contribution: Career Satisfaction Among Female Faculty* by August and Waltman (2004), the most significant motivator or hygiene variable associated with employee satisfaction noted was “...the importance of a comparable salary to others in the unit or department” (p. 187). The other variables included: “...good relations with the department chairperson, the level of involvement and influence within the department, the importance of student relations and the negative effect of a problematic departmental climate” (p.188). Similar findings were noted by Cropsey et al. in a 2008 study of reasons why female faculty members had left medical schools. The three most common reasons noted for departure were; “...lack of career/professional advancement, low salary, and chairman/departmental leadership issues” (p. 1117).

History of Pay Equity Studies in Higher Education

Pay equity studies in college and university settings began in the early 1970s, precipitated by both the extension of Title VII to educational institutions and Executive Order 11246, which prohibited racial and sex discrimination in all projects funded by government contracts. This first wave of equity studies and their subsequent publications served to raise many questions and the studies achieved mixed results (Barbezat, 2002). One consistent finding, however, was the clear salary advantage of male faculty members across nearly all campuses, though this pay gap varied significantly from institution to institution (p. 14).

The first documented pay equity study that included community colleges took place in 1983 in the state of Tennessee in response to pending litigation (Lassiter, 1983). A handful of other national cross-sectional studies throughout the 1980s and 1990s included faculty from 2-year institutions in the analysis, but no single study of salary equity limited to community colleges could be found in the extensive literature pertaining to pay equity studies.

With respect to higher education settings, there are four statutory defenses in litigation that a college or university can use to satisfactorily justify a pay differential between men and women. Those four affirmative defenses include: “1) a seniority system; 2) a merit system; 3) a system that measures earnings by quantity or quality of production; or 4) any other factor other than sex” (Perry, 2005, p.23).

Issues in Pay Equity

In the 1999 National Study of Postsecondary Faculty (NSOPF:99), the disparities in salary, rank, and tenure were evaluated by both gender and race. The research

continued to reveal that relatively few women taught at doctoral institutions in tenure-track or high-ranking positions. Even after controlling for numerous factors typically associated with employment and salary, the salary gap remained.

The mean salary in 1999 for male faculty members of all U.S. doctoral-granting institutions was reported at \$61,700, compared with \$48,400 for female faculty members at the same institutions. This gender pay gap was reported to hold regardless of race. A regression analysis demonstrated that after controlling for race or ethnicity, teaching field, tenure status, type of institution, level of instruction, highest degree, rank, years since earning highest degree, average proportion of time spent on teaching and on research, age, number of classes taught, and total number of publications, female faculty members on average still earned nearly 9% less than men.

In an analysis using this report, as well as other national surveys, Toutkoushian and Conley (2005) referred to the unexplained salary gap and acknowledged that, “There is still a lot that we do not know about the compensation of faculty and the extent of pay discrimination in academe” (p. 23). Pay equity studies reportedly typically have focused on observable and measurable factors but have failed to capture unobservable but important information, processes, and institutional behavior.

According to the National Center for Education Statistics (2006), from 1970 to 1980, average salaries for all college faculty members declined in true dollars after adjusting for inflation. But from the 1980s through the 2000s, using constant dollars based on the consumer price index, those losses were reversed. In 1970, the mean 9-month faculty salary was \$63,655, as compared to 2005-06 when the mean 9-month faculty salary overall was \$66,172. The mean in 2005-06 for male faculty was \$71,569

and the mean for female faculty was \$58,665. Despite the overall faculty pay increase, there was a difference of \$13,904 that resulted in female faculty earning only 82% of what male faculty earned (p. 24-25).

In 2004, the Institute for Women's Policy Research released a study of the labor market and the longstanding pay gap between men and women. The researchers, Rose and Hartmann, emphasized that, although there had been tremendous gains over the last 40 years, the losses due to the pay differential were still devastating to women and their families. In addition to wages, the losses included diminished access to quality child care, limited educational opportunities and decreased access to pensions.

The study also described the concept known as gender segregation. This describes the major categories of jobs that are filled primarily by members of one gender. Jobs historically identified as "women's work" were low paying compared to those identified as "men's work". Yet, even in the fields populated primarily by women, men earned higher wages.

Concerns about traditional female fields in which the few males were still compensated at a higher rate were reinforced in a study by Umbach (2006). These concerns for female faculty salary equity include being in "...disciplines characterized by relatively low demand, high teaching loads, and low amounts of research funding". These factors are negatively associated with compensation in higher education (p. 187).

In a study that reviewed the specific role that education played in the gender gap, Bobbit-Zeher (2007) concluded that there were four significant factors. Those factors were "(1) choice of a college major, (2) skills as measured by standardized tests, (3) amount of education, and (4) selectivity of the college attended." The most important of

those factors was the idea that women tended to major in fields that were not well compensated such as education as opposed to engineering. But that finding also triggered the longtime question; was it the field itself that had been devaluated or was it the result of the predominance of females in the field? (p.3).

In a study released in April of 2007, *Behind the Pay Gap*, The American Association of University Women's Educational Foundation focused on salary comparisons of college graduates. The study indicated that 1 year after graduation from college for full-time employees, women earned 80% on average of the amounts earned by their male counterparts. Ten years out of college for full-time employees, females earned only 69% of the earnings of their male counterparts. This was after removing the following variables: hours, occupation, parenthood, and other factors relevant to employment (Dey & Hill, 2007).

The foregoing study was refuted in an article entitled "One More Time: There is No Gender Pay Gap", by Viall (2007) in *The Four Hundred*; a trade publication of information technology human resource professionals. Viall declared that in neither title nor pay grade was there any pay gap. He also viewed any apparent pay disparity as the result of a woman's choice to enter a low-paying field rather than discrimination.

However, in a study conducted in 2006, the Institute of Management and Administration found that over 91% of human resource professionals endorsed the belief that pay gaps were a reality in the business world, but fewer than 18% said that a pay gap existed within their own respective organizations.

Farrell (2005) explored the controversial topic of potential reasons men continued to earn more than women in the workplace. Farrell stated that disparities were due to life

choices women had made in regard to their work such as choosing a profession based on interest or fulfillment rather than on expected salary. He also pointed to the decision to have children as one of the primary reasons women fell behind in salary.

This theory is substantiated, at least in part, by research conducted by Miller at the University of Virginia (2005). Higher female career achievement and salary were positively associated with delayed childbirth. Also, a delay in childbirth until after age 30 was positively correlated with higher income and more wealth by age 60 than was the case for those who had had children before 30 or not at all.

Exceptions to Miller's conclusions were expressed by Vouto (2005), who claimed that, while Farrell made a convincing case, women's work choices were not solely to blame for the pay gap. Also in contrast to Farrell, in a study conducted by the U.S. General Accounting Office (2003), work patterns were determined to be the key reasons for pay difference between the genders. Multiple key factors including industry, occupation, marital status, and job tenure were all factored in to account for the 80/100 pay ratio. However, the General Accounting Office noted, "Even after accounting for key factors that affect earnings, (the) model could not explain all of the differences in earnings between men and women"(p. 6).

In a study commissioned by the American Association of University Women (AAUW, 2005), the most important explanations Americans listed for the pay gap included:

Women prioritized family over career (41%), Men were more assertive at negotiating with employers (28%), Men were more likely to have the education and skills needed for higher paying jobs (12%), Employers didn't promote young women because employers believed that women left if they have children (56%), and Employers discriminated against women in their hiring and promotion practices (41%) (p.3).

Those beliefs persist despite the fact that, according to the U.S. Bureau of the Census, from 2001-2003, two thirds of first-time mothers worked throughout their pregnancies with almost all working within 6 months or less after giving birth.

Another perspective in the search for causes of this phenomenon was provided by Srinvas at Radford University. Srinvas stated that despite the continued increases in the number of women in the work force the pay gap remained. Srinvas suggested that a significant change in social attitudes over the last decade was to blame. Based on the results of the National Longitudinal Survey of Youth, a larger number of participants reported more “traditional views” of women such as “A woman’s place is in the home” (p. 273). For those women who had endorsed the more “traditional view”, there was a significant negative association with salary, but for those who did not endorse the more “traditional view” there was no significant correlation observed.

Another concern is the issue of reverse pay discrimination. Following pay equity studies in several states, female faculty member have been compensated. Male faculty members have successfully argued that reverse discrimination had occurred based on the action as a kind of overcorrection. Those authors suggested that “across-the-board” salary adjustments were less likely to raise the claim of reverse discrimination as opposed to individualized adjustments (Eckes & Toutkoushian, 2006).

In an analysis of pay equity importance in the “post Lilly Ledbetter era”, in an article in the *Massachusetts Lawyer Weekly*, Ashton and Feldman (2007) suggested three actions that employers could take to ensure pay equity, conduct regular pay equity audits, train all managers and supervisors who make compensation decisions, and retain the necessary pay records for the recommended length of time on the advice of legal counsel.

Faculty Member Demographics

According to West and Curtis in the AAUP Faculty Gender Equity Indicators 2006 report, female full-time faculty members at community colleges were nearing parity with male full-time faculty members. However, the number of tenured full-time female faculty members at baccalaureate- and master's-degree-granting colleges was just over 33% and only 25% at doctoral institutions.

Nationwide, women comprised only a quarter of all faculty with the rank of full professor, with only 19% of those at doctoral universities and 28% to 29% at baccalaureate- and master's-degree granting institutions.

In an across the board comparison of salaries in the report, female faculty members earned 81% of the salary earned by male faculty. Once again the two reasons cited for this disparity were that women held lower paying positions and lower rankings than men.

The study concluded that doctoral institutions simply were not hiring enough female faculty members and were not using sufficiently more centralized and uniform salary-setting processes to hire faculty members. The study also noted that the disparity in salaries would not be resolved as long as there remained significant differences between the number of female faculty members at the lecturer and instructor ranks, as opposed to the assistant, associate, and full professor ranks.

The findings seem in direct contradiction to the prevalence of female students in almost every level of the educational pipeline. Overall undergraduate enrollment was comprised of 57% females and overall graduate enrollment was comprised of 58% females, women have been obtaining academic credentials at increasing record levels

(King, 2006). Disparities existed, however, in fields of study considered traditionally masculine such as theology, law, business, and science. One exception to this rule was that women by then had achieved a slight majority in medical school enrollment as well as in other health-science programs. But in the field of education, women have earned a substantial majority of the graduate degrees at both the masters' level (80%) and the doctoral level (64%) (p.6). It seems counterintuitive that, with this type of monopoly of academic credentials, women in the field of education would continue to experience such inequity in the assignment of rank and tenure as well as in pay.

Part-time versus Full-time Faculty Members

The labor market for part-time or adjunct faculty members tends to rely on local or regional applicants as opposed to the national labor market for full-time, tenured faculty positions. As more and more colleges and universities have expanded their reliance on part-time (adjunct) faculty members, the debate over this practice has expanded as well. Edmondson and Fisher (2003) depicted adjunct faculty members as excluded and frustrated with their part-time status yet frequently known to be experts on the cutting edge of their respective fields. Institutions nationwide have struggled to find acceptable middle grounds between those opposing descriptions.

Adjunct faculty members at community colleges, in particular, have been viewed as employees who were hopeful about obtaining full-time employment with a single institution but who instead had found themselves teaching at multiple institutions in order to make a viable living (Sonner, 2000). Fulton (2000) found that adjunct faculty members earned a low percentage of what full-time faculty earned and frequently had tremendous workloads comprised of what was described as unwanted and overload classes. The

pronounced pay inequity of adjunct faculty members at the University of Washington led to a class action lawsuit in which they successfully sued for both lump-sum payments and annual pay raises. The complaint was based on annual pay increases granted to full-time faculty members that adjunct faculty did not receive (Gravious, 2007).

The AAUP determined that women were more likely to be employed in part-time faculty positions (48%) than in full-time faculty positions (39%). (West & Curtis, 2006) Similarly, the AAUP noted that women were more likely to hold temporary as well as permanent nontenure track full-time positions. Overall 30% of full-time female faculty members were in nontenure track jobs, compared to only 18% of full-time faculty men (p. 8). The results decreased both the long-term earnings potential and the professional achievement of those employees.

Perna (2005) suggested that the economic theory of human capital, defined as the faculty member's power, pay, and benefits in a higher education institution, was determined largely by a term known as productivity. Becker (1985, 1993) also used the term "productivity" to describe employee self-investments. Those investments included factors such as: education level, professional training, ability to relocate, personal drive, and work intensity, plus their overall levels of health and state of mind. Differences in salaries among individual faculty members sometimes were attributed to the practice of rewarding faculty based on their productivity. This theory also was used to explain some of the factors tied to part-time employment status as well as to the attainment of rank and tenure.

Another theory that has been used to analyze differences in faculty salaries is structural theory. This theory focuses on the organizational practices and policies of the

institutions that employ the faculty (Youn, 1988). Salary analyses using structural theory focus on the institution's financial resources, collective bargaining agreements, tenure, and student enrollment. This theory suggested that the women were more likely to be employed at lower paying and lower prestige institutions, thus resulting in disparities in pay.

Use of Rank for Pay Equity Studies

One of the most debated points in the field of salary equity for faculty members is the inclusion of academic rank as a predictor of salary. The rationale for using rank seems obvious because higher ranks are equated with promotions and pay increases and thus are significant predictors of salary. However, the influence of tenure on the process is not easily assessed. In other words, comparing faculty with similar rank to measure equity does not account for the possibility that women are not promoted to associate or full professor at the same rate as men and thus the gender bias may be understated (Becker & Toutkoushian, 2003). It is recommended that this variable be included in the statistical analysis of salary equity studies of institutions where tenure is granted to.

Previous VCCS Equity Studies

In 2007, a faculty salary analysis was conducted by Virginia Commonwealth University on behalf of J. Sargeant Reynolds Community College, a member institution of the Virginia Community College System. Neither gender nor minority status was deemed to be statistically significant in this analysis. Length of time at the institution plus years of experience prior to being hired by the institution were statistically significant. Also, those who were hired directly into certain levels (rank) tended to be paid higher than those who were promoted to those levels. The study concluded that faculty members

in the School of Business and the School of Engineering, as well as in Agriculture and Manufacturing Technologies, were paid at the highest levels and faculty members in the School of Culinary Arts and in Tourism and Hospitality were paid the least.

Status of Tenure in the Virginia Community College System

Most faculty salaries are directly tied to the tenure process. However, since 1972, the Virginia Community College system has not used a tenure-based system for faculty but has relied instead on renewable contracts for specified terms. Because of this decision, the VCCS was censured by the American Association of University Professors (AAUP) in 1975 because the action "...had been taken without the faculty's previous knowledge and contrary to the faculty's expressed wishes." (JLARC, 2004) The censure was lifted in 2003, following the adoption of the following policies:

- After six years of full-time faculty service, indefinite retention is assumed unless the administration demonstrates cause for termination at an appropriate hearing.
- Safeguards against faculty layoffs.
- A stronger statement on academic freedom (p.12).

In the fall of 2006, there were only 48 VCCS faculty members remaining with tenure status. Of those, 37 (77%) were male.

Retention and Mentoring of Female Faculty

As noted earlier in this chapter, there are a number of variables associated with faculty satisfaction such as departmental relations, professional priorities, and the equity of salary, benefits and services. But several other factors are relevant as well.

One relevant variable in the overall satisfaction for female faculty is the overlap between personal (home) and public (work) life. According to the NSOPF (1999), 60% of male faculty members were parents compared to only 43% of female faculty members.

This finding suggested one explanation could be that female faculty members had felt the need to forego family life in order to meet the rigorous demands of academic life.

Findings such as those discussed above were instrumental in the investment of \$15 million by Columbia University to increase faculty diversification according to President Bollinger (2005). The goals were to increase minority and female faculty members in the arts and sciences by using a number of approaches, including “...improvements in the search, selection and recruitment process and helping to meet the work-life needs of faculty members such as providing childcare” (p. 13). Similar recommendations from a diversity taskforce at Harvard University were suggested to increase the retention of female faculty members. One of the core recommendations was to focus on the work-family balance by improving maternity-leave policies and childcare plus an extension of the tenure process for faculty members who are parents (Fogg & Wilson, 2005).

Although the literature does not contain many studies targeted specifically on female faculty members in community colleges, one study does suggest that family life balance was at least perceived to be possible in community college settings (Wolf-Wendall, Ward, & Twombly, 2007). Following completion of the study, the authors discussed three major conclusions about the faculty studied: First, female faculty members with small children were attracted to the flexibility of the job and the work was conducive to raising a family. Second, this flexibility was particularly noted in female faculty members with doctoral degrees who wanted to raise families as well as teach. This focus on teaching has appeared throughout the literature on community college faculty members in a field where widespread perception that the “publish or perish”

university atmosphere had cast a negative light on employment in that post-secondary setting. And last, the perception that community colleges provided opportunities to pursue academics and raise families was generalized to the student population as well. In other words, this shared belief served as a connection between faculty members and students of both genders and of all ages (p.265).

Faculty mentoring of graduate students has been endorsed as a critical component of success in areas of academia from publication to tenure (Dixon-Reeves, 2003). Many universities have furthered this idea by pairing junior faculty members with senior faculty members within the same field, with positive outcomes reported for each faculty member. But female faculty members in particular have benefited from such relationships (p. 26).

The practice of female faculty members as mentors to students has been studied in to the fields of science, technology, engineering, and math (STEM) in a 2008 study by Starobin and Laanan. The recruitment of underrepresented groups for careers in those fields could be directly traced to educational careers that started in community colleges. That held true particularly for female students (p. 38). The presence of female faculty members in those fields in community college settings served as examples and reinforcements for the students' choices of careers as they identified strongly with the faculty members. The only negative ideas expressed by the students were that they wished their teachers in K-12 schools had suggested careers in those fields when they were younger. The strong connection to students was also endorsed by the female faculty members as an important part of their work.

Comparable Worth

In the *Federal Register*, the Office of Federal Contract Compliance Programs (OFCCP) in the U.S. Department of Labor, Employment Standards Administration, the federal enforcement arm for affirmative action, views compensation discrimination as "...dissimilar treatment of individuals who are similarly situated" in regard to the skill sets, type of work, and levels of responsibility (*Federal Register* 35124).

The concept of equal pay for similar or comparable work was determined by the calculation of specific job requirements along with concepts such as skills, responsibility, and work environment and then applying the pay formula to different jobs matching in criteria (Alkadry & Tower, 2006) This assertion is met with much controversy due to the inexact science espoused to make this determination.

Researchers have suggested that in society both women and women's work have been devalued. And as a result of this devaluation, pay for women's work is typically lower than comparable work completed by a man (Bellas, 1994). Others have suggested that institutions where more women worked were viewed as less prestigious and that women in those institutions worked in roles that were not rewarded (Smart, 1991).

Similarly, Elvira and Graham (2002) suggested that as individual employees women may have internalized the societal devaluation and not questioned the pay disparity. Supervisors also may have been likely to devalue less powerful groups as well as the work they produced and frequently such groups primarily consisted of women.

A contradictory view was taken by Barbara Brown in her testimony before the Senate Health, Education, Labor and Pensions Committee (Brown & Hastings, 2007).

Brown was the Vice-Chair of the Labor and Employment Law Section of the American Bar Association and the author of several articles and books in the area of employment law. Brown testified that:

An agenda of equalizing the pay of men and women, without regard for their job content, the market for their type of work and, the choices they made in the past concerning the salary they would work for, their education, and the fields they chose to work in, is something far different from working to eliminate discrimination (p.3).

Brown went on to say that the:

“...payment of equal amounts to jobs held predominantly by men and those held predominantly by women despite the different job content, market, and other dimensions of those jobs.... is nothing more than the discredited comparable worth theory in new clothing” (p.6).

In her analysis of solutions for pay disparity, Perna (2001) concluded that, in order to close the pay gap for female faculty members, more women must be employed at “valued” institutions in “valued” fields doing “valued” work. In other words, more women needed to be employed in more senior-level full professorships at doctoral and research institutions with opportunities for grant funding. Conversely, Umbach (2006) suggested that if underlying bias had been at fault, then we should have asked if the reward structures for faculty members in higher education were created to favor men. This would suggest that efforts to eliminate the bias would be a more efficient way to address the problem.

One possible means of controlling for bias seemed to be found in the formalization of the payroll process, which in some cases seemed to have leveled the playing field in employee salaries. The more rules and procedures were specified and centralized in the employment process, the less freedom for error there tended to be. This

suggested the uniform systems decreased the opportunities for cognitive biases to occur (Elvira & Graham, 2002). Though this methodology reportedly was frustrating for managers who struggled to reward good performance, it seemed to increase the chances of salary parity between men and women.

Equal Employment Opportunity Center (EEOC) Rulings

The U.S. Equal Employment Opportunity Commission (EEOC) was created in 1964 following the passing of Title VII of the Civil Rights Act of 1964. According to the agency website, the EEOC "...is responsible for enforcing the nation's laws prohibiting discrimination in employment based on race, color, sex (including sexual harassment and pregnancy), religion, national origin, age, disability, and retaliation". The EEOC began the enforcement of the Equal Pay Act in 1979 following the transfer of that responsibility from the U.S. Department of Labor.

On the 40th anniversary of the inception of the EEOC in 2004, a review of cases filed under the Equal Pay Act and/or Title VII found that the Commission had filed approximately 364 lawsuits "...alleging unlawful discrepancies in wages based on gender." The Commission resolved 359 of the suits, obtaining over \$28 million in monetary relief in addition to the changes in employment practices that resulted (EEOC, 2004). Sex discrimination filings had comprised 31% of all charges filed throughout the history of the EEOC. A brief review of those litigations found the following claims involving colleges and universities:

In 2001, Kettering University was charged with discriminating against a former professor of communications due to a disparity in salary and employment status. Kettering reportedly paid this female professor at a rate that was deemed to be less than

that of comparable male associate professor. The University was required to pay the female professor \$55,000 and to train managers and supervisors to ensure future compliance. In 2000, the Commission charged that Eastern Michigan University had paid lower salaries in one of its technology departments to female assistant and associate professors than it had paid to male instructors and assistant professors with equal levels of skills, effort, and responsibilities. In addition to monetary relief of back pay and retirement benefits, the university agreed to raise the females' annual salaries to amounts equal to the salaries of the corresponding male faculty members in the department.

In 1986, the EEOC filed suit against Troy State University and obtained over \$199,000 in back pay for female faculty members who were "...paid less than male faculty members for performing jobs requiring equal skill, effort, and responsibility". Also in 1986, the EEOC successfully settled a case for over \$122,000 against the University of Illinois on behalf of two female assistant professors who were discriminated against in salary as well as tenure and promotion. A similar case was settled against the University of Texas at El Paso for \$100,000 in 1983.

Among more recent cases, the Commission settled a suit brought against Centenary College of Louisiana in 2008, following the discriminatory firing of their women's head basketball coach after the birth of her child. The coach reportedly had been told by the athletic director that because she had become a mother, coaching was not something she should continue doing. An assistant athletic director testified that the athletic director had commented that due to this "life choice" the coach had made, he doubted she would be completely committed to her duties. In addition to payment for

damages, the college had to take proactive steps to prevent further acts of discrimination through postings of antidiscrimination policies and staff training (EEOC, 2009).

Also in 2008, Spartan Aeronautics College settled a sex discrimination suit brought on behalf of a longtime female employee who was singled out for her outspokenness and then fired for her complaints. The Commission contended that as more women entered fields long dominated by men, that employers must be proactive and “vigilant” in their efforts to provide a fair and equitable workplace. In 2009, the EEOC filed suit against Adelphi University of Long Island due to salary violations in which male full-time professors were being paid more than female full-time professors with the same ranks in the same schools. In addition to monetary payments to the charging professors, the college was required to provide salary increases for eligible female professors and consent to ongoing monitoring and training by the Commission for 2 years. Commission District Director Spencer H. Lewis added, “Employees are entitled to a workplace without disparity and differential treatment based on sex. The EEOC will seek full relief against employers who continue to pay women less than their male peers for performing the same work” (2009).

The EEOC reported that nationwide it received over 5,000 charges of pay discrimination each year under various statutes. In response to the 2009 signing of the Equal Pay Act, Acting Chair of the EEOC Stuart J. Ishimaru announced

"The Act is a victory for working women and all workers across the country who are shortchanged by receiving unequal pay for performing equal work. The EEOC intends to enhance enforcement in this area, in addition to increasing public outreach and education" (EEOC, 2009).

Clearly the Commission intended to bring parity to the workplace on behalf of female employees thus providing a clear and convincing reason for colleges and universities to gauge their employment practices to ensure equity for protected employees.

CHAPTER 3

METHODS AND PROCEDURES

Introduction

This chapter describes the design of this cross-sectional quantitative research study. The information presented includes a description of the research design, the population, data collection methods, research questions, and data analysis. The major purpose of this study was to evaluate gender equity in the salaries, rank, and employment status of instructional faculty members in the Virginia Community College System.

The chapter is structured to include the following sections: research design, population, data collection, data analysis, and summary.

Research Design

This was a quantitative study designed to evaluate gender equity in the salaries, rank, and employment status of instructional faculty members in the Virginia Community College System. Nonidentifying quantitative data were provided by the Virginia Community College System office for all 2,130 full-time instructional faculty members who were contracted for employment in the Fall of 2006 with complete data available for 1,974 of the faculty members (VCCS, Office of Institutional Research).

Data Collection

The hard copies of this confidential, though nonidentifying, information were maintained in a locked cabinet in the office of the principal investigator. The electronic copy of the same data was maintained in a password-protected flash drive. No one outside of the principal investigator, research editor, dissertation committee members,

and the VCCS Institutional Research Office had access to, nor does the study disclose, any potentially identifying data.

Permission was requested for the study from the Institutional Research Boards of East Tennessee State University and the Virginia Community College System. These boards deemed that permission was not required as the study involved data analysis only and no human subjects were involved.

Population

The Virginia Community College system was established in 1966. It includes 23 colleges and 40 campuses throughout the state of Virginia. The Virginia Community College System has an annual enrollment of approximately 230,000 students and employs approximately 5,000 staff and faculty members. The focus of this study was the instructional faculty members employed in the Fall of 2006. The study is focused on the 1,974 out of the 2,130 faculty members contracted for 9-month employment for which all statistical data were available.

Research Questions

This study was designed to answer four primary research questions:

Question 1: Mean Salary

Is there a difference in mean salary between male and female full-time faculty members of the Virginia Community College System by rank when controlling for years in rank?

H₀1: There is no difference in mean salary between male and female full-time faculty members of the Virginia Community College System by rank when controlling for years in rank.

Question 2: Rank

Is there a difference in the proportion of male and female faculty members of the Virginia Community College System by rank?

H₀2: There is no difference in the proportion of male and female faculty members of the Virginia Community College System by rank.

Question 3: Highest degree earned.

Is there a difference in the proportion of male and female full-time faculty members of the Virginia Highlands Community College System by highest degree earned?

H₀3: There is no difference in the proportion of male and female full-time faculty members of the Virginia Community College System by highest degree earned.

Question 4: Full-time versus part-time.

Is there a difference between males and females in the proportion employed as part-time faculty members in the Virginia Community College System?

H₀4: There is no difference between males and females in the proportion employed as part-time faculty members in the Virginia Community College System.

Data Analysis

This study examined salary, rank, highest degree earned, and employment status of instructional faculty members employed by the Virginia Community College System in Fall of 2006. The nonidentifying individualized data analyzed for all fulltime faculty included: institution of employment, department, date of hire for current position, date of hire at current institution, date of hire for state employment, current rank, length of time in current rank, discipline, 9 or 12 month contract, gender, age, highest degree earned,

and salary. (Institutional identity requested due to salary differential used at one institution). Available aggregate data through IPEDS-S report for part-time faculty members included institution of employment and gender. This research study used the Statistical Package for Social Sciences (SSPS 11.0) to perform data analysis.

Data for research question 1 were analyzed using a one-way analysis of covariance (ANCOVA). The covariate was number of years in current rank. Green and Salkind (2008) stated that an ANCOVA "...evaluates the null hypothesis that population means on the dependent variable are equal across levels of a factor, adjusting for differences on the covariate" (p. 209). In other words, do the group means differ significantly from one another.

The data for research questions 2, 3, and 4 were analyzed using a Chi-square test to determine statistical significance by category. Green and Salkind (2003) stated that the one-sample chi-square test "...evaluates whether the proportions of individuals who fall into categories of a variable are equal to hypothesized values" (p. 357).

The findings of all the data analysis were summarized and reported for each of the research questions of this study.

Data Collection Procedure

Prior to the implementation of this study, formal approval was obtained from my committee chair, my doctoral committee, and the Virginia Community College System Office. As stated previously, the Institutional Research Boards of East Tennessee State University and the Virginia Community College System deemed that permission was not required as the study involved data analysis only and no human subjects were involved. During the spring of 2008, a formal request for targeted data for all Fall 2006

instructional faculty members was made to the Virginia Community College System Office and was provided by the staff in the VCCS Institutional Research and Human Resources Offices.

This chapter includes a description of the study, data collection procedures, the population, research design, and methods of data analysis that were used for this research study. This study used a quantitative design to analyze gender differences in salary, rank, and employment status in the 23 Virginia Community Colleges. “Equity Theory” by Adams provided the theoretical foundation of the study.

CHAPTER 4

ANALYSIS OF THE DATA

The purpose of this study was to analyze the salaries of instructional faculty of the Virginia Community College System using J. Stacy Adams' Equity Theory to see if there were differences between the genders with regard to rank, pay, or employment status.

The study's population consisted of all full-time faculty members from the 23 community colleges in Virginia with 9-month contracts and with the ranks of professor, associate professor, assistant professor, or instructor as of the fall of 2006. Complete data on 1,974 faculty members were received. Research question 1 pertaining to differences in mean salary included two separate analyses to account for the pay differential scale for faculty members at Northern Virginia Community College. Aggregate data only for all reported adjunct faculty members by gender were included for research question 4.

Analysis of the Research Questions

Data for this study were assembled by the Office of Institutional Research in the Virginia Community College System and both descriptive and inferential statistics were used to analyze the data. Organization for this chapter is based on the order of the research questions presented in Chapters 1 and 3.

Research Question #1

Is there a difference in mean salary between male and female full-time faculty members of the Virginia Community College System by rank when controlling for years in rank?

Two analyses were run to answer this question to account for the separate and higher pay range for faculty members at Northern Virginia Community College. The analysis for VCCS faculty members outside of Northern Virginia Community College is presented first.

Results for VCCS Faculty Members Outside of Northern Virginia Community College

Table 1 shows the salary information for the first population presented.

Table 1

Means and Standard Deviations for Salary by Faculty Rank and Gender for VCCS Faculty Members Outside of Northern Virginia Community College

Faculty Rank	Gender	<i>N</i>	<i>M</i>	<i>SD</i>
Instructor	Male	115	\$42,368	\$4,681
	Female	157	\$41,141	\$4,079
	Instructor Total	272	\$41,660	\$4,377
Assistant Professor	Male	183	\$48,309	\$5,378
	Female	254	\$46,493	\$4,450
	Assistant Professor Total	437	\$47,253	\$4,936
Associate Professor	Male	276	\$53,910	\$6,191
	Female	218	\$51,585	\$5,082
	Associate Professor Total	494	\$52,884	\$5,838
Professor	Male	149	\$60,686	\$7,420
	Female	94	\$55,699	\$3,949
	Professor Total	243	\$58,757	\$6,752
Gender Total	Male	723	\$52,052	\$8,475
	Female	723	\$48,063	\$6,551
	Faculty Total	1446	\$50,058	\$7,830

To analyze this research question, a two-way analysis of covariance (ANCOVA) was planned. The independent variables for the planned two-way ANCOVA were gender and rank. The dependent variable was salary and the covariate in this analysis was years in rank. Prior to conducting the two-way ANCOVA, a variable was created to reflect the eight categories of gender and rank combinations. This variable was used in a preliminary

analysis to evaluate homogeneity of slopes between the covariate and the predictor variables across the eight rank-and-gender combinations, an assumption underlying ANCOVA. The statistical significance of two-way interaction for the variable representing the eight combinations of gender and rank by years in rank showed the homogeneity of the slopes could not be assumed, $F(7, 1430) = 4.025, p < .001$. However, the effect size, as measured by η^2 was small (.02). Therefore, null hypothesis 1 could not be tested.

*Follow-up Tests for Salaries of VCCS Faculty Members Outside of Northern Virginia
Community College*

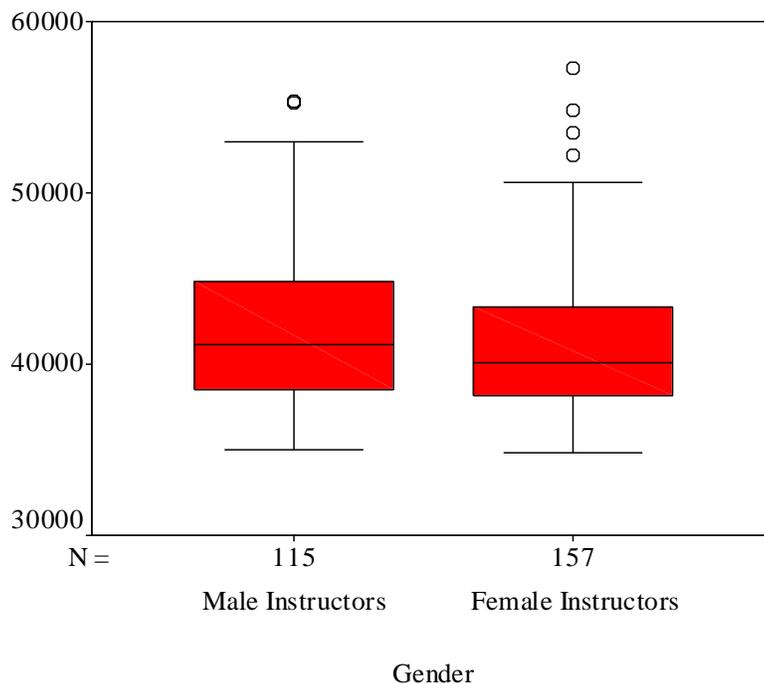
Because homogeneity of the slopes could not be assumed, the two-way ANCOVA was not conducted. Instead follow-up tests were conducted to compare the mean salaries of male and female VCCS faculty members outside of Northern Virginia Community College (NVCC). Specifically, t -tests for independent samples were conducted to compare salaries of males and females within each of the four ranks.

Salary Comparison for Gender within Instructor Rank

Ho: Among VCCS instructors outside of NVCC, there is no mean difference in the salary of male and female faculty members.

To test the null hypothesis, a t -test for independent samples was used. Levene's Test for Equality of Variances showed equal variances could be assumed, $F(1, 270) = 3.812, p = .052$. Therefore, the t -test that assumed equal variances was used.

Among VCCS instructors outside of northern Virginia, there was a difference between male and female faculty salaries, $t(270) = 2.302, p = .022$. Therefore, the null hypothesis was rejected. Male VCCS faculty members at the instructor rank outside of NVCC ($M = \$42,368, SD = \$4,681$) tended to earn more than female VCCS faculty members at the instructor rank outside of NVCC ($M = \$41,111, SD = \$4,079$). The 95% confidence interval for the difference in means was \$178 to \$2,277. However, the η^2 index was .019, which indicated a small effect size. That is, slightly less than 2% of the variance in salary was accounted for by gender. Figure 1 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

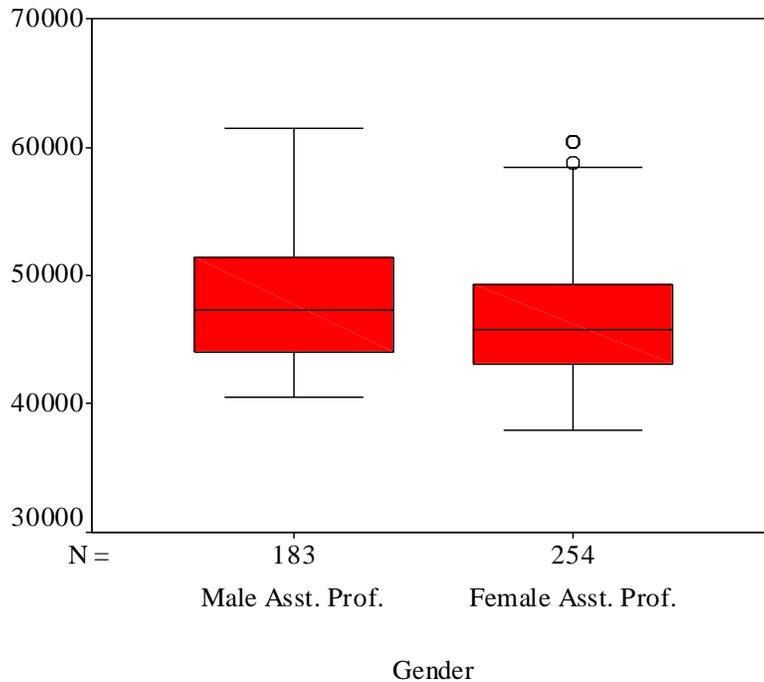
Figure 1. Boxplot for Salaries of VCCS Instructors Outside of NVCC by Gender

Salary Comparison for Gender within Assistant Professor Rank

Ho: Among VCCS assistant professors outside of NVCC, there is no difference in the salary of male and female faculty members.

To test the null hypothesis, a *t* test for independent samples was used. Levene's Test for Equality of Variances showed equal variances could not be assumed, $F(1, 435) = 10.873, p = .001$. Therefore, the *t* test that does not assume equal variances was used.

Among VCCS assistant professors outside of NVCC, there was a difference between male and female faculty salaries, $t(345.360) = 3.739, p < .001$. Therefore, the null hypothesis was rejected. Male VCCS faculty members at the assistant professor rank outside of NVCC ($M = \$48,309, SD = \$5,378$) tended to earn more than female VCCS faculty members at the assistant professor rank outside of NVCC ($M = \$46,493, SD = \$4,450$). The 95% confidence interval for the difference in means was \$861 to \$2,772. However, the η^2 index was .033, which indicated a small effect size. That is, slightly more than 3% of the variance in salary was accounted for by gender. Figure 2 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 2. Boxplot for Salaries of VCCS Assistant Professors Outside of NVCC by Gender

Salary Comparison for Gender within Associate Professor Rank

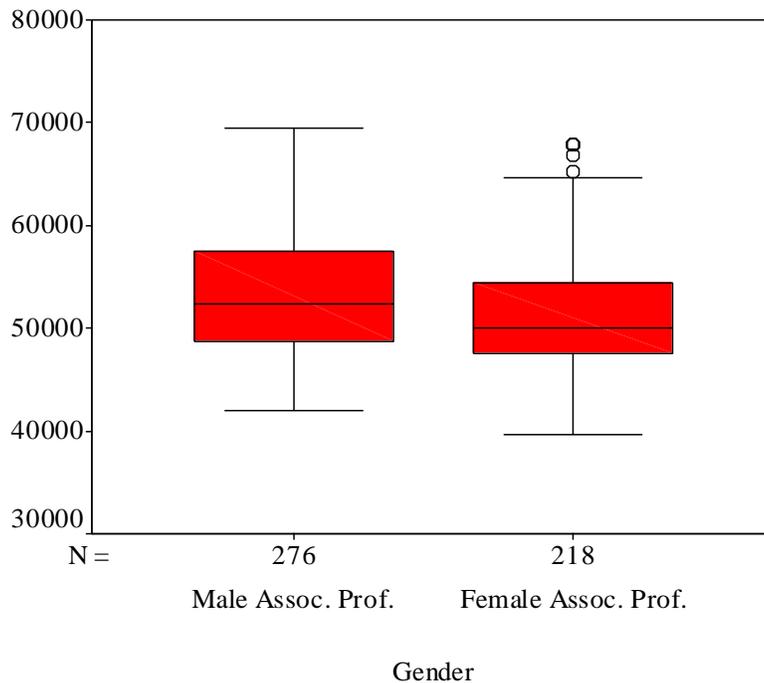
Ho: Among VCCS Associate Professors outside of NVCC, there is no difference in the salary of male and female faculty members.

A *t* test for independent samples was conducted to test the null hypothesis.

Levene’s Test for Equality of Variances showed equal variances could not be assumed, $F(1, 492) = 11.424, p = .001$. Therefore, the *t* test that does not assume equal variances was used.

Among VCCS associate professors outside of NVCC, there was a difference between male and female faculty salaries, $t(491.260) = 4.583, p < .001$. Therefore, the null hypothesis was rejected. Male VCCS faculty members at the associate professor

rank outside of NVCC ($M = \$53,910$, $SD = \$6,191$) tended to earn more than female VCCS faculty members at the associate professor rank outside of NVCC ($M = \$51,585$, $SD = \$5,082$). The 95% confidence interval for the difference in means was \$1,328 to \$3,322. However, the η^2 index was .039, which indicated a small effect size. That is, slightly less than 4% of the variance in salary was accounted for by gender. Figure 3 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 3. Boxplot for Salaries of VCCS Associate Professors Outside of NVCC by Gender

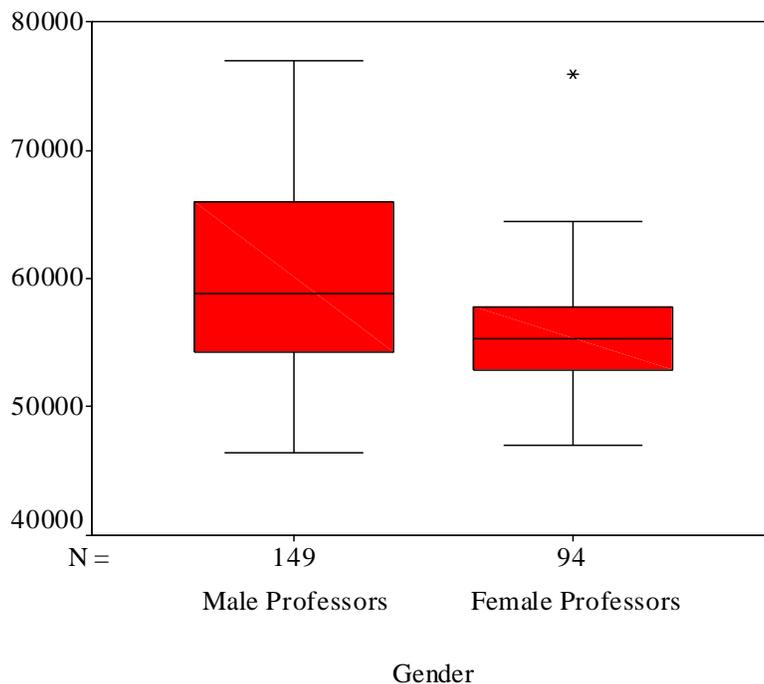
Salary Comparison for Gender within Professor Rank

Ho: Among VCCS professors outside of NVCC, there is no difference in the salary of male and female faculty members.

A *t* test for independent samples was conducted to test the null hypothesis.

Levene's Test for Equality of Variances showed equal variances could not be assumed, $F(1, 241) = 55.498, p < .001$. Therefore, the t test that does not assume equal variances was used.

Among VCCS professors outside of NVCC, there was a difference between male and female faculty salaries, $t(235.264) = 6.815, p < .001$. Therefore, the null hypothesis was rejected. Male VCCS faculty members at the professor rank outside of NVCC ($M = \$60,686, SD = \$7,420$) tended to earn more than female VCCS faculty members at the professor rank outside of NVCC ($M = \$55,699, SD = \$3,949$). The 95% confidence interval for the difference in means was \$3,545 to \$6,428. However, the η^2 index was .130, which indicated a medium effect size. That is, 13% of the variance in salary was accounted for by gender. Figure 4 shows the distributions for the two groups.



* = an observation which is more than 3.0 times the interquartile range

Figure 4. Boxplot for Salaries of VCCS Professors Outside of NVCC by Gender

Results for Faculty members at Northern Virginia Community College

Table 2 shows the salary information for the second population presented.

Table 2

Means and Standard Deviations for Salary by Rank and Gender for Faculty at Northern Virginia Community College

Faculty Rank	Gender	<i>N</i>	<i>M</i>	<i>SD</i>
Instructor	Male	34	\$44,234	\$4,620
	Female	60	\$43,979	\$3,657
	Instructor Total	94	\$44,071	\$4,009
Assistant Professor	Male	60	\$51,502	\$5,900
	Female	94	\$50,206	\$4,770
	Assistant Professor Total	154	\$50,711	\$5,259
Associate Professor	Male	60	\$60,643	\$7,375
	Female	62	\$55,559	\$4,589
	Associate Professor Total	122	\$58,059	\$6,607
Professor	Male	85	\$65,847	\$6,808
	Female	73	\$63,834	\$6,835
	Professor Total	158	\$64,917	\$6,873
Gender Total	Male	239	\$57,865	\$10,143
	Female	289	\$53,504	\$8,754
	Faculty Total	528	\$55,478	\$9,647

A two-way analysis of covariance (ANCOVA) was planned. The independent variables for the planned two-way ANCOVA were gender and rank. The dependent variable was salary and the covariate in this analysis was years in rank. Prior to

conducting the two-way ANCOVA, a variable was created to reflect the eight categories of gender and rank combinations. This variable was used in a preliminary analysis to evaluate homogeneity of slopes between the covariate and the dependent variable across groups, an assumption underlying ANCOVA. The statistical significance of two-way interaction for the variable representing the eight combinations of gender and rank by years in rank showed the homogeneity of the slopes could not be assumed, $F(7, 512) = 5.99, p < .001$. The effect size, as measured by η^2 was medium (.08). Therefore hypothesis 1 could not be tested.

Follow-up Tests for Salaries of Faculty Members at Northern Virginia Community College

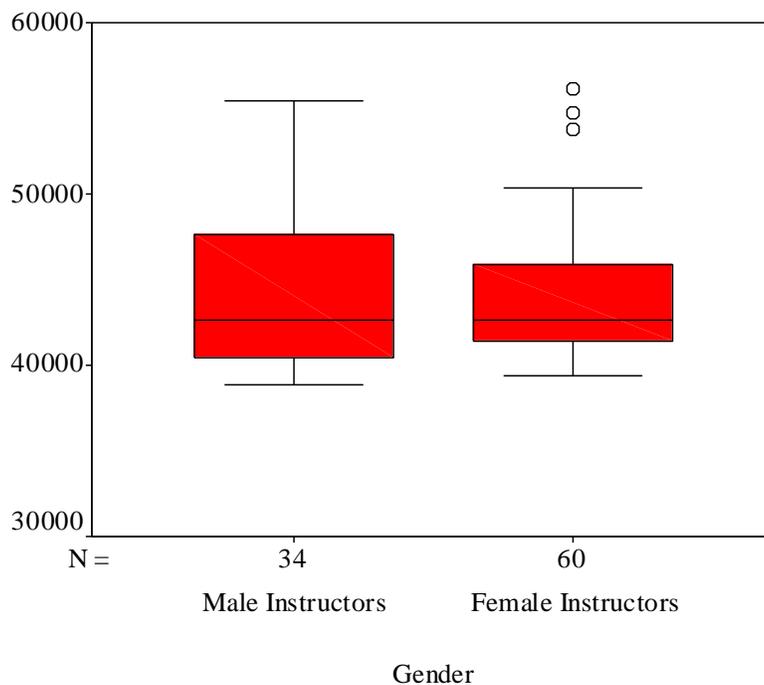
Because homogeneity of the slopes could not be assumed, the two-way ANCOVA was not conducted. Instead follow up tests were used to compare the mean salaries of male and female faculty members at Northern Virginia Community College. Specifically, t tests for independent samples were conducted, one for each of the four ranks.

Salary Comparison for Gender within Instructor Rank

Ho: Among instructors at Northern Virginia Community College, there is no mean difference in the salary of male and female faculty members.

To test the null hypothesis, a t -test for independent samples was used. Levene's Test for Equality of Variances showed equal variances could not be assumed, $F(1, 92) = 4.131, p = .045$. Therefore, the t test that does not assume equal variances was used.

Among instructors at Northern Virginia Community College, there was no significant difference between male and female faculty salaries, $t(56.608) = .277, p = .783$. Therefore, the null hypothesis was retained. The mean salary for male faculty members at the instructor rank at Northern Virginia Community College ($M = \$44,234, SD = \$4,620$) was only slightly higher than the mean salary for female faculty members at the instructor rank at Northern Virginia Community College ($M = \$43,979, SD = \$3,658$). The 95% confidence interval for the difference in means was $-\$1,592$ to $\$2,102$. The η^2 index was $< .001$, which indicated a very small effect size. That is, less than a tenth of 1% of the variance in salary was accounted for by gender. Figure 5 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

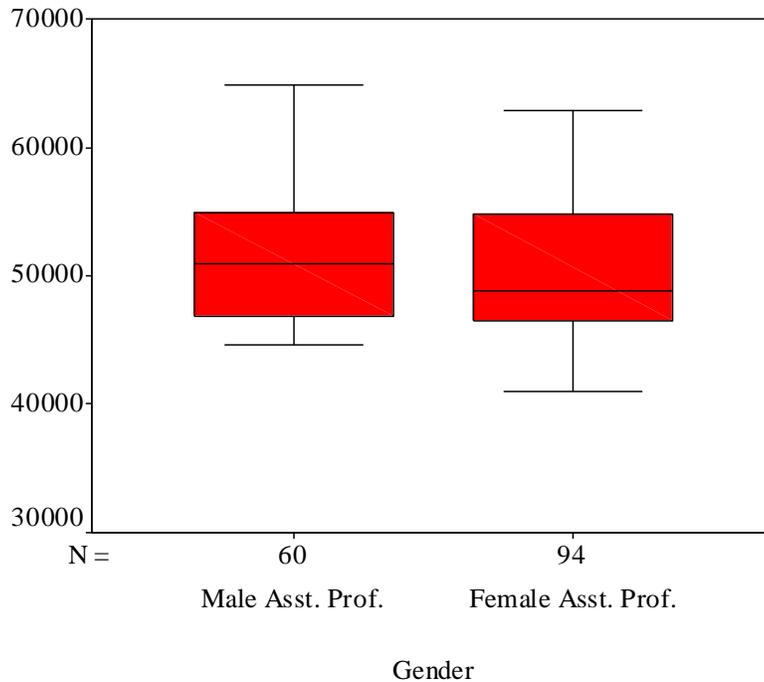
Figure 5. Boxplot for Salaries of Instructors at NVCC by Gender

Salary Comparison for Gender within Assistant Professor Rank

Ho: Among assistant professors at Northern Virginia Community College, there is no difference in the salary of male and female faculty members.

To test the null hypothesis, a t test for independent samples was used. Levene's Test for Equality of Variances showed equal variances could be assumed, $F(1, 152) = 3.500, p = .063$. Therefore, the t test that does assume equal variances was used.

Among assistant professors at Northern Virginia Community College, there was no significant difference between male and female faculty salaries, $t(152) = 1.498, p = .136$. Therefore, the null hypothesis was retained. Although male faculty members at the assistant professor rank at Northern Virginia Community College ($M = \$51,502, SD = \$5,900$) tended to earn more than female faculty members at the assistant professor rank at Northern Virginia Community College ($M = \$50,206, SD = \$4,770$), the difference was not statistically significant. The 95% confidence interval for the difference in means was $-\$414$ to $\$3,006$. The η^2 index was .015, which indicated a small effect size. That is, only 1.5% of the variance in salary was accounted for by gender. Figure 6 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 6. Boxplot for Salaries of Assistant Professors at NVCC by Gender

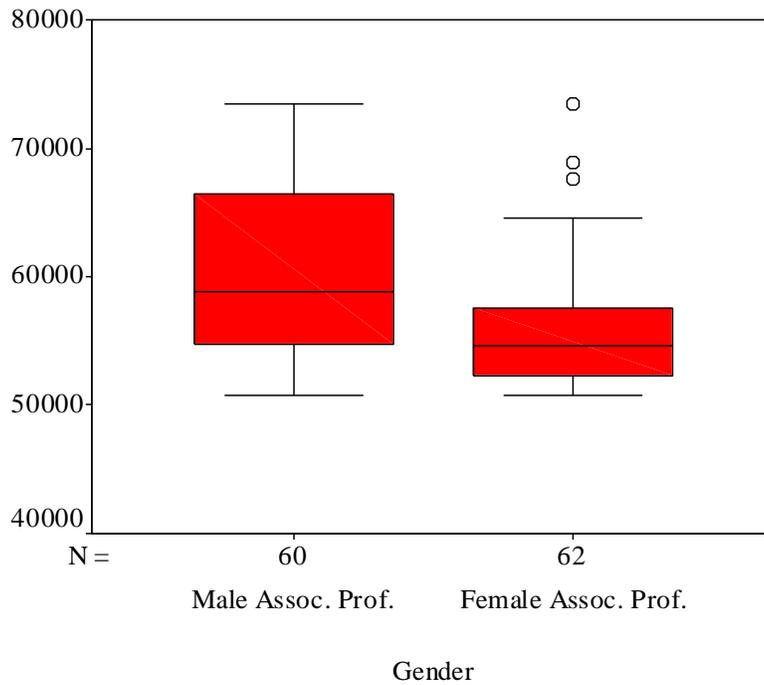
Salary Comparison for Gender within Associate Professor Rank

Ho: Among Associate Professors at Northern Virginia Community College, there is no difference in the salary of male and female faculty members.

To test the null hypothesis, a *t* test for independent samples was used. Levene’s Test for Equality of Variances showed equal variances could not be assumed, $F(1, 120) = 21.482, p < .001$. Therefore, the *t* test that does not assume equal variances was used.

Among associate professors at Northern Virginia Community College, there was a difference between male and female faculty salaries, $t(98.161) = 4.555, p < .001$. Therefore, the null hypothesis was rejected. Male faculty members at the associate professor rank at Northern Virginia Community College ($M = \$60,643, SD = \$7,375$) tended to earn more than female faculty members at the associate professor rank at

Northern Virginia Community College ($M = \$55,559$), $SD = \$4,589$). The 95% confidence interval for the difference in means was \$2,869 to \$7,300. The effect size, as measured by the η^2 index, was .15, which indicated a large effect size. That is, 15% of the variance in salary was accounted for by gender. Figure 7 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

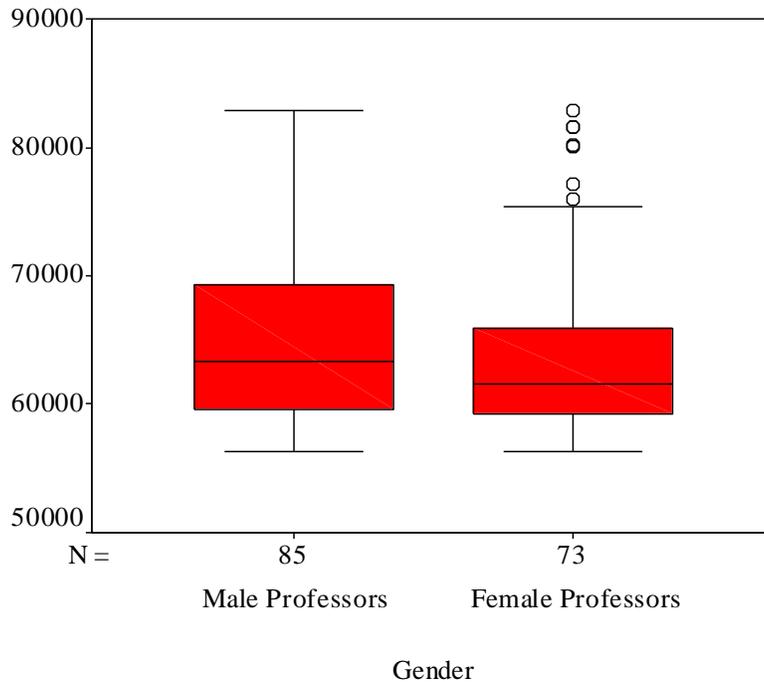
Figure 7. Boxplot for Salaries of Associate Professors at NVCC by Gender

Salary Comparison for Gender within Professor Rank

Ho: Among Professors at Northern Virginia Community College, there is no difference in the salary of male and female faculty members.

To test the null hypothesis, a t test for independent samples was used. Levene's Test for Equality of Variances showed equal variances could be assumed, $F(1, 156) = .099, p = .754$. Therefore, the t test that does assume equal variances was used.

Among professors at Northern Virginia Community College, there was no significant difference between male and female faculty salaries, $t(156) = 1.850, p = .066$. Therefore, the null hypothesis was retained. Male faculty members at the professor rank at Northern Virginia Community College ($M = \$65,847, SD = \$6,808$) tended to earn more than female faculty members at the professor rank at Northern Virginia Community College ($M = \$63,834, SD = \$6,835$), but the difference was not statistically significant. The 95% confidence interval for the difference in means was $-\$137$ to $\$4,165$. The η^2 index was .021, which indicated a small effect size. That is, slightly more than 2% of the variance in salary was accounted for by gender. Figure 8 shows the distributions for the two groups.



o = an observation between 1.5 times to 3.0 times the interquartile range

Figure 8. Boxplot for Salaries of Professors in Northern Virginia by Gender

Research Question #2

Is there a difference in the proportion of male and female faculty members of the Virginia Community College System by rank?

A two-way contingency table analysis was conducted to evaluate whether males and females differed in the proportion in each rank. The two variables were four levels of rank (instructor, assistant, associate, and full professor) and gender, male or female. Gender and rank were found to be statistically significantly related, Pearson $\chi^2 (3, N = 1974) = 46.34, p < .001$. The strength of the relationship, as measured by Cramer's V, was weak (.15). The proportions of males for instructor, assistant, associate, and full

professor were .16, .25, .35 and .24, respectively. The proportions of females for instructor, assistant, associate and full professor were .21, .34, .28, and .17, respectively.

Table 3 below shows the distribution of rank by gender.

Table 3

Crosstabulated Table for Faculty Rank by Gender

Faculty Rank	Female		Male	
	<i>N</i>	%	<i>N</i>	%
Instructor	217	21.4	149	15.5
Assistant Professor	348	34.4	243	25.3
Associate Professor	280	27.7	336	34.9
Professor	167	16.5	234	24.3
Totals	1012	100.0	962	100.0

Figure 9 shows the proportion of rank by gender.

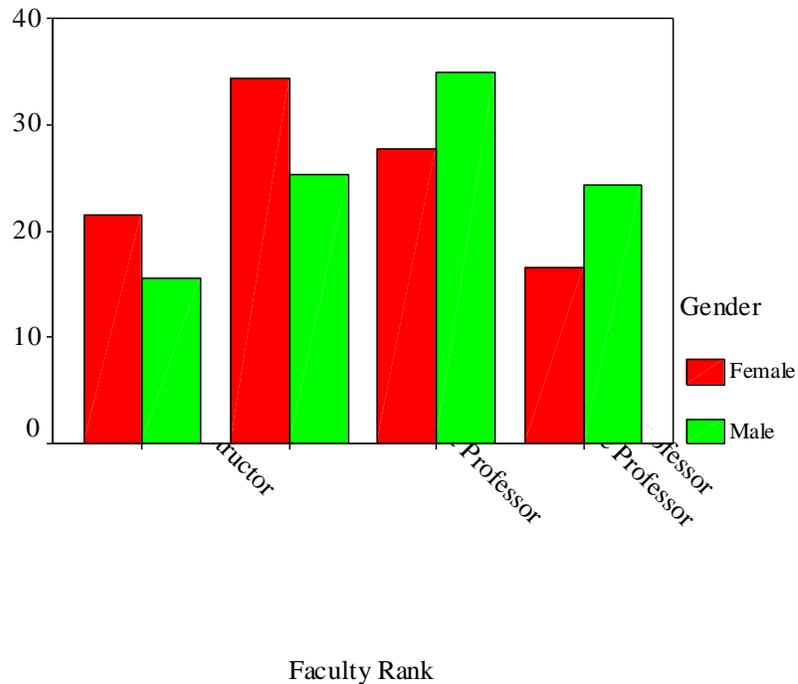


Figure 9. Proportion of VCCS Faculty Ranks by Gender

Follow-up pairwise comparisons were conducted to evaluate the difference among these proportions. The Holm's sequential Bonferroni method was used to control for Type I error at the .05 level across all six comparisons. There were 4 pairwise differences that were statistically significant. Table 4 shows the results of these analyses.

Table 4

Pairwise Comparison by Rank

	Pearson Chi-square	<i>p</i> value (Alpha)	Phi
Assistant vs. Professor	28.44*	<.001 (.008)	.169
Instructor vs. Professor	23.83*	<.001 (.010)	.176
Assistant vs. Associate	21.79*	<.001 (.013)	.134
Instructor vs. Associate	17.58*	<.001 (.017)	.134
Associate vs. Professor	1.43	.232 (.025)	.038
Instructor vs. Assistant	.015	.901 (.050)	.004

Research Question #3

Is there a difference in the proportion of full-time male and female full-time faculty members of the Virginia Community College System by highest degree earned?

A two-way contingency table analysis was conducted to evaluate whether males and females differed in the proportion of highest degree earned. The two variables were degree (bachelor's or lower, master's, and doctorate or special professional) and gender, male or female. Gender and highest degree earned were found to be statistically significantly related, Pearson $\chi^2 (2, N = 1974) = 21.56, p < .001$. The strength of the relationship, as measured by Cramer's V, was weak (.11). The proportions of males having bachelor's or lower, master's, and doctorate or special professional were .16, .59, and .26 respectively. The proportions of females for bachelor's or lower, master's, and

doctorate or special professional were .12, .69, .19, respectively. Both Table 5 and Figure 10 show the results of this analysis.

Table 5
Crosstabulated Table for Highest Degree Earned by Gender

Highest Degree	Female		Male	
	<i>N</i>	%	<i>N</i>	%
Bachelor's or lower	121	12.0	151	15.7
Master's	695	68.7	564	58.6
Doctorate or Special Professional	196	19.4	247	25.7
Totals	1012	100.0	962	100.0

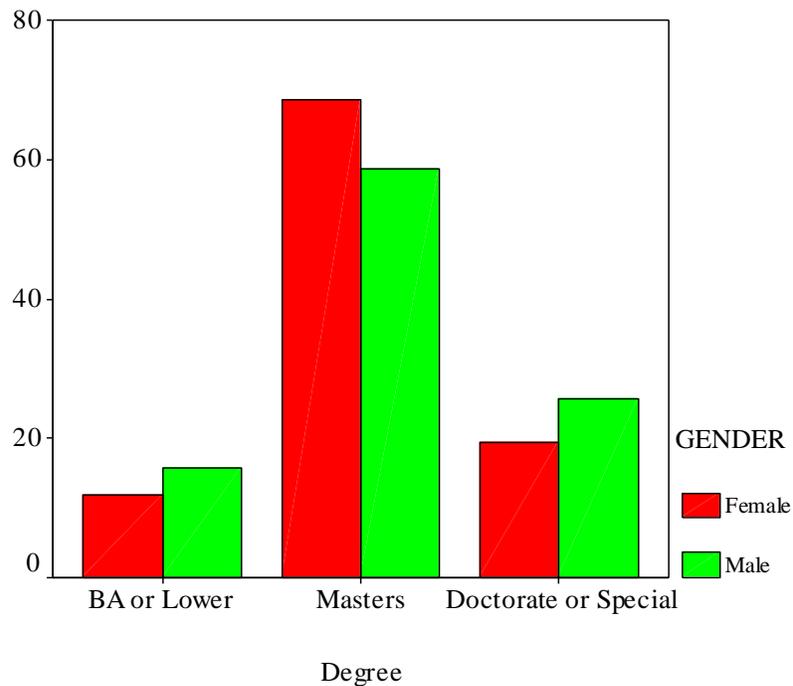


Figure 10. Proportion of Highest Degree Earned by Gender

Follow-up pairwise comparisons were conducted to evaluate the difference among these proportions. The Holm's sequential Bonferroni method was used to control for Type I

error at the .05 level across all three comparisons. There were two pairwise differences that were statistically significant. Table 6 shows the results of these analyses.

Table 6

Pairwise Comparison by Highest Degree

	Pearson Chi-square	<i>p</i> value (Alpha)	Phi
Master's vs. Doctorate or Special Professional	15.777*	<.001 (.017)	.096
BA or Lower vs. Master's	10.321*	.001 (.025)	.082
BA or Lower vs. Doctorate or Special Professional	.004	.950 (.050)	.002

Research Question #4

Is there a difference between males and females in the proportion employed as part-time faculty members in the Virginia Community College System?

A two-way contingency table analysis was conducted to evaluate whether males and females differed by employment status. The two variables were employment status, full time or part time and gender, male or female. Gender and employment status were found to be significantly related, Pearson $\chi^2 (1, N=7523) = 13.92, p < .001$. The strength of the relationship, as measured by Phi, was weak (.04). Among male faculty members, 73.8% were employed part-time compared to 70% of female faculty members. Table 7 shows the results of this analysis.

Table 7

Crosstabulated Table for Employment Status by Gender

Employment Status	Male		Female	
	<i>N</i>	%	<i>N</i>	%
Full-time	1038	26.2	1068	30.0
Part-time	2928	73.8	2488	70.0
Totals	3967	100.0	3556	100.0

Summary

Data analyses were presented in Chapter 4 to answer four research questions. The data analyses pertained to equity in salary, rank, highest degree earned, and employment status between male and female faculty members. Separate salary equity analyses were conducted for VCCS faculty members outside of Northern Virginia Community College and faculty members inside of Northern Virginia Community College due to the pay differential at NVCC.

Regarding research question number 1, on the issue of equity in salary for VCCS faculty members outside of NVCC, there was a statistically significant difference in salary between male and female faculty members at the instructor, assistant professor, and associate professor rank and thus each of the null hypotheses was rejected. However, the effect size of each was small, ranging from .019 to .039. For VCCS professors outside of NVCC, there was a statistically significant difference in salary between male and female faculty members and the null hypothesis was also rejected. The effect size for VCCS professors outside of NVCC was medium, thus indicating that gender accounted

for 13% of the variance in salary with male professors earning almost \$5,000 more, on average, than female professors.

For faculty members inside Northern Virginia Community College, there was no significant difference between the salaries of male and female faculty members at the instructor, assistant professor, and professor rank and thus each of the null hypotheses was retained. The effect size for the three ranks was small and accounted for less than 2% of the variance in salary. At the associate professor rank, however, there was a significant difference in salary between male and female faculty members and so the null hypothesis was rejected. The effect size for this rank was large and accounted for 15% of the variance in salary with male associate professors earning almost \$5,100 more than female faculty members.

Regarding each of the research questions 2 and 3, there was a statistically significant difference in proportion between male and female faculty members by rank and highest degree obtained. Thus, the null hypothesis for each of these questions was rejected. Female faculty members in the Virginia Community College system were more likely to have lower faculty ranks than were male faculty members and were also less likely to have doctorate degrees. However, the strength of the relationships between gender and rank and between gender and degree were weak.

Finally, in regard to research question number 4, there was a statistically significant difference in the proportion of males and females employed as part-time faculty, so the null hypothesis was rejected. However, the strength of the relationship between gender and employment status was quite weak ($\Phi = .04$) as evidenced by only

a slightly higher percentage of males who were employed part-time (73.8%) compared to female faculty members (70%).

The following chapter includes a summary of the research data analyses. In addition to the summary, recommendations and conclusions based on the results of the study are presented.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter provides a summary of the results presented in Chapter 4. Conclusions based on the findings from the study as well as recommendations for additional research in the area of salary equity are included.

As stated in Chapter 1, this study examined three of the four primary indicators of gender equity that are based on recommendations from the American Association of University Professors (2006). Those indicators included: 1) employment status (full time versus part time), 2) tenure status, 3) full professor faculty rank, and 4) average salary. Tenure was not included in this study because the Virginia Community College System discontinued the use of tenure for faculty members in 1972. Faculty ranks in the VCCS were: instructor, assistant professor, associate professor, and professor.

One purpose of this study was to analyze salary equity between male and female faculty members among instructional faculty of the Virginia Community College System using Adams' Equity Theory. Gender equity with regard to rank and employment status also was analyzed.

Summary of Findings

This section presents a review of the findings from the data analysis and interpretations of the statistical test results. Four research questions and four related hypotheses were addressed during the course of the study.

Research question 1 pertained to the issue of salary equity between male and female full-time faculty members of the Virginia Community College system. Two separate and complete analyses were run to answer this question in order to account for

the separate and higher pay range for faculty members at Northern Virginia Community College. For faculty members outside of Northern Virginia, there were statistically significant differences in salary between male and female faculty members at the instructor, assistant professor, and associate professor ranks, with male faculty members earning slightly higher wages. The large sample size probably accounts for these null hypotheses that were rejected when the effect size was small. Also, there was little if any practical difference in true dollars.

For professors outside of Northern Virginia, there was a significant difference in salary between male and female faculty members and the effect size was medium. Gender accounted for 13% of the variance in salary with male associate professors earning almost \$5,000 more than female faculty members; a difference that is both statistically and practically significant.

For faculty members inside Northern Virginia Community College, there was no difference between the salaries of male and female faculty members at the instructor, assistant professor, and professor rank. However, at the associate professor rank, there was a significant difference in salary between male and female faculty members. Gender accounted for 15% of the variance in salary with male associate professors earning almost \$5,100 more than female faculty members; a difference that is both statistically and practically significant.

Regarding research questions 2 and 3, there was a statistically significant difference in proportion between male and female faculty members by rank and highest degree obtained. Female faculty members in the Virginia Community College system were more likely to have a lower faculty rank than male faculty members and were also

less likely to have doctorate degrees. Faculty members overall were more likely to have master's degrees than bachelor's or doctorates. Female faculty members were more likely to hold the assistant professor level in faculty ranking and male faculty members were more likely to hold the associate professor ranking. The strength of the relationships between gender and rank and between gender and degree, however, were weak.

Research question 4 examines the proportion of males and females employed as part-time faculty members in the Virginia Community College System. There was a statistically significant difference in the proportion of males and females employed as part-time faculty. However, the strength of the relationship between gender and employment status was quite weak. Only a slightly higher percentage of males were employed part-time (73.8%) compared to female faculty members (70%).

Conclusions

The following conclusions were made based on an analysis of the study's findings:

1. It can be concluded that for faculty members in the VCCS outside of NVCC, there is a difference in salary between male and female faculty members, but only at the professor level is the difference both statistically and practically significant.

2. It can be concluded that for faculty members inside NVCC, there is no difference in salary between male and female faculty members at the instructor, assistant professor, and professor rank. But at the associate professor rank, there is a difference in salary between male and female faculty members and the difference is both statistically and practically significant.

3. It can be concluded that faculty members in the Virginia Community College system overall are slightly more likely to be female, hold master's degrees, and hold assistant professor rank.

4. It can be concluded that both males and females are equally likely to be employed as part-time faculty members in the Virginia Community College System.

Based on the conclusions of this study, salary practices in the Virginia Community College System appear to be directly related to the salary policies of the Human Resources Policy manuals in that education and experience are the most significant variables taken into consideration when determining salary. This practice is described in the literature as individual human capital. And according to Becker (1993), this capital can be accumulated through an employee's educational attainment and workforce training and experience. This capital can be used to leverage the employee's status and earnings. Similar capital can be accumulated in academia through an employee's work experience, educational attainment, teaching level, faculty rank, and research productivity and similarly used to increase an employee's status and power (Perna, 2003; Toutkoushian, 2003). Seemingly, the Virginia Community College system has endorsed this model of compensation in both policy and practice.

Recommendations for Further Research

The current study was limited to an analysis of gender-based salary equity in the Virginia Community College System. Additional studies of state community college systems around the nation would be helpful for comparison purposes for others seeking to conduct a similar study.

The current study was limited to an analysis of gender-based salary equity solely of instructional faculty in the Virginia Community College System. Additional studies of other employee groups in the college setting such as administrators or classified staff would be helpful for comparison purposes.

It is recommended that the impact of mentoring for female faculty be studied to assess impact of guidance in areas such as salary negotiation and the tenure process.

Given the findings of this study, it is recommended that a study be conducted that analyze the length of service at the professor level in the VCCS and at the associate professor level at NVCC to clarify the variables that account for the differences in pay.

Recommendations to Improve Practice

In an analysis of the role of education in closing the gender gap, Bobbit-Zeher (2007) pointed to the beginning phases of a career for women, when education levels and experiences matter more than life experiences gained thus far. The initial phases of work life are the time for careful attention to the issue of gender inequality in pay practices that have lifetime implications.

This study did not compare the salary of faculty members specifically grouped based on the date of hire. Recent analysis of the 2004 National Study of Post Secondary Faculty (Porter, Toutkoushian, & Moore, 2008) comparing pay structures for the recently hired finds that for recently hired faculty, the pay structure was more equitable in comparison to faculty members as a whole. It would appear that the continued updated practices to ensure salary equity of the Human Resources department in the Virginia Community College system have decreased the opportunities for inequity. However, specific studies to ensure this is the case are recommended. Also, the VCCS could

consider making necessary adjustments to eliminate existing disparities between male and female faculty members with professor rank in the VCCS and at the associate professor rank in NVCC.

In an analysis of pay equity importance in the “post Lilly Ledbetter era”, an article in the *Massachusetts Lawyer Weekly* by Ashton and Feldman (2007) suggested three actions that employers could take to ensure pay equity: conduct regular pay equity audits, train all managers and supervisors who make compensation decisions, and retain the necessary pay records for the recommended length of time on the advice of legal counsel.

These same recommendations were echoed by Barbara Brown in her testimony before the U.S. Senate Committee on Health, Education, Labor and Pensions (2007). In addition to the recommendations for pay equity practice listed above, Brown encouraged that efforts be focused to encourage employees to question salary equity by providing incentives for them to do so.

Also in 2007, the Equal Employment Opportunity Commission issued a set of best practices for employers to use as a guide on work and family balance for employees. Careful consideration should be taken of the practice of female employees as caretakers of children as well as the elderly as it is interwoven throughout the pay disparity practices of so many businesses and other organizations. These issued recommendations by the Commission are designed to assist employers in their decisions affecting working mothers, pregnant employees, and other potential protected groups in order to avoid gender-based assumptions and so called “benevolent” stereotyping.

REFERENCES

- Adams, J. S. & Rosenbaum, W. B. (1962). The relationship of worker productivity to cognitive dissonance about wage inequities. *Journal of Applied Psychology*, *46*, 161-164.
- Adams, J. S. (1963). Toward an understanding of inequity. *Journal of Abnormal and Social Psychology*, *67*, 422-436.
- Adams, J. S., & Jacobsen, P.R. (1964). Effects of wage inequities on work quality. *Journal of Abnormal and Social Psychology*, *69*, 19-25.
- Alkadry, M. G., & Tower, L. E. (2006). Unequal pay: The role of gender, *Public Administration Review*. November/December, *66*, 888-898.
- American Association of Community Colleges (2007). Historical information & student profile. Retrieved April 15, 2007 from <http://www.aacc.nche.edu/>
- American Association of University Women, *Brief History of the Wage Gap, Pay Inequity, and the Equal Pay Act*. Washington, DC. Retrieved February 12, 2007 from https://svc.aauw.org/museum/advocacy/1970_1979/index.cfm
- American Association of University Women, *Pay gap among college-educated women and men, state by state*. Retrieved April 23, 2007 from http://www.aauw.org/print_page.cfm?Path_Info=F:\web\aauw\research\statedata\index.cfm
- Ashton, J., & Feldman, G.M. (2007). Commentary: Pay equity after 'Goodyear': Can employers afford to relax? *Massachusetts Lawyers Weekly*. L54273963MSLW.
- August, L., & Waltman, J. (2004). Culture, climate, and contribution: Career satisfaction among female faculty. *Research in Higher Education*, *45*, 177-192.
- Barbezat, D. A. (2002) History of pay equity studies. *New Directions for Institutional Research*, *115*: 9-39.
- Becker, G. S. (1985). Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, *3* (1): S33-S58.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with a special reference to education*. Chicago: University of Chicago Press.
- Becker, W. E., & Toutkoushian, R. K. (2003). Measuring gender bias in the salaries of tenured faculty members. *New Directions for Institutional Research*. *117*, 5-20.

- Bellas, M. L. (1994). Comparable worth in academia. The effects on salaries of sex composition and labor-market conditions of academic disciplines. *American Sociologist*, 59, 807-821.
- Bobbitt-Zeher, D. (2007). The gender income gap and the role of education, *Sociology of Education*, 80, 1-22.
- Bollinger, L. C. (2005). Columbia dedicates \$15 million for faculty diversification efforts. *Diverse: Issues in Higher Education*, 22(14), 13-18.
- Brown, B., & Hastings, P. (2007). Equal pay for women. *FDCH Congressional Testimony; Senate Health, Education, Labor and Pensions*. Retrieved February 22, 2009 from <http://search.ebscohost.com.ezproxy.vccs.edu:2048/login.aspx?direct=true&db=mth&AN=32Y1121550737&site=ehost-live>
- Bradburn, E. M., & Sikora, A. C. (1999). Gender and racial/ethnic differences in salary and other characteristics of postsecondary faculty: Fall 1998. Retrieved April 16, 2007 from http://nces.ed.gov/programs/quarterly/vol_4/4_4/q4_5.asp
- Cropsey, K. L., Masho, S. W., Shiang, R., Sikka, V., Kornstein, et al. (2008). Why do faculty leave? Reasons for attrition of women and minority faculty from a medical school: Four-year results. *Journal of Women's Health*, 17, 1111-1118.
- Dey, J. G., & Hill, C. (2007). *Behind the pay gap*. Washington, DC: American Association of University Women Educational Foundation.
- Dixon-Reeves, R. (2003). Mentoring as a precursor to incorporation: an assessment of the mentoring experience of recently minted Ph.D.s, *Journal of Black Studies*, 34(1), 12-27.
- Edmondson, S., & Fisher, A. (2003). *Effective use of adjunct professors in educational leadership*. Paper presented at the Annual Meeting of the American Association of School Administrators, New Orleans, LA, February 21-23, 2003.
- Eckes, S. E., & Toutkoushian, R. K. (2006). Legal issues and statistical approaches to reverse pay discrimination in higher education. *Research in Higher Education*, 47, 957-984.
- Ehrenberg, R.G. (2003). Annual report on the economic status of the profession, *American Association of University Professors*. Retrieved January 18, 2007 from <http://www.aaup.org/AAUP/newsroom/prarchives/2003/zrep.htm>.
- Elvira, M. M., & Graham, M. E. (2002). Not just a formality: Pay system formalization and sex-related earnings effects. *Organization Science*, 13, 601-617.

- Farrell, W. (2005). *Why men earn more: The startling truth behind the pay gap---and what women can do about it*. New York: American Management Association.
- Ferber, M. A., & Loeb, J. W. (1974). Professors, performance, and rewards. *Industrial Relations*, 13(1), 69-77.
- Festinger, L. (1961). The psychological effects of insufficient rewards. *American Psychologist*, 16(1), 1-11.
- Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal & Social Psychology*, 58, 203-210.
- Fogg, P., & Wilson, R. (2005). Harvard committees suggest steps to help women, *Chronicle of Higher Education*, 51(38), 8-13.
- Geiger, T. A. (2002). *An investigation of job satisfaction among Florida's full-time faculty at small, medium, and large community colleges using Herzberg's motivation-hygiene theory*. (Unpublished doctoral dissertation. University of South Florida, St. Petersburg).
- Gravious, J. (2007). University of Washington settles lawsuit over pay for part-time lecturers. *The Chronicle of Higher Education*. 53. Retrieved March 8, 2008 from AcademicOneFile. Gale. Virginia Highlands Community College.
- Green, S.B., & Salkind, N.J. (2008). *Using SPSS for Windows and Macintosh: analyzing and understanding data* (5th ed.) Upper Saddle River, NJ: Prentice Hall.
- Fulton, R.D. (2000). The plight of part-timers in higher education. *Change*, 32 (3) 38-43.
- Haignere, L. (2002). *Paychecks: A guide to conducting salary-equity studies for higher education faculty* (2nd ed.). Washington, DC: American Association of University Professors.
- Herzberg, F. (1966). *Work and the nature of man*. Cleveland, OH: World.
- Hill, C., & Silva, E. (2005). *Public perceptions of the pay gap*. Washington, DC: American Association of University Women Educational Foundation.
- Institute of Management & Administration. (2006). *How widespread is the gender pay gap (COMPENSATION)? HR Focus 83.6*. Retrieved 1/18/2007 from *Expanded Academic ASAP*, Thomson Gale Database.

- Janzen, B. E. (1994). The personnel office. *Managing Community Colleges*. San Francisco: Jossey-Bass.
- King, J.E. (2006). *Gender equity in higher education: 2006*. Washington, DC: American Council on Education.
- Joint Legislative Audit and Review Commission of the Virginia General Assembly (JLARC) (2004). *Special report: Tenure and post-tenure review policies at Virginia's public colleges and universities*. Richmond, VA: Commonwealth of Virginia.
- Lassiter, R. L., Jr. (1983). The development and use of a faculty salary model for a higher education system. *Research in Higher Education*, 18, 333-358.
- Lee, K. R. (1942). Women in war work. *Editorial Research Reports*. (1).CQ Press: Washington, DC. Retrieved April 23, 2007, from CQ Electronic Library <http://library.cqpress.com/cqresearcher/cqresrre1942012600>.
- McCracken, C.G. (2001). *The relationship between stress levels and job satisfaction among community college faculty in east Tennessee*. (Unpublished doctoral dissertation. East Tennessee State University, Johnson City, Tennessee).
- Miller, A.R. (2005). *The effects of motherhood timing on career pat*. (Unpublished paper, University of Virginia: Charlottesville). Retrieved December 16, 2005 from <http://www.virginia.edu/economics/papers/miller/fertilitytiming-miller.pdf>
- Millman, S. (2007). For the first time in 3 years, faculty salaries beat inflation. Underlying financial inequalities trouble the AAUP. *Chronicle of Higher Education*, 53(33), A10.
- Murray, J.P. (1999). Interviewing to hire competent community college faculty. *Community College Review*, 27(1), 41-56.
- National Center for Education Statistics (2006). *Mini Digest of Education Statistics* Washington, DC. Retrieved February 29, 2008 from <http://nces.ed.gov/pubs2007/2007067.pdf>.
- Obama, B.H. (2009). President Barack Obama delivers remarks at signing of the Lilly Ledbetter Fair Pay Act. *FDCH Political Transcripts*, Retrieved February 22, 2009, from Military & Government Collection database.
- Perna, L.W. (2001). Focus on faculty: Challenges and changing roles; Sex differences in faculty salaries: A cohort analysis. *The review of Higher Education*, 24, 283-307.

- Perna, L.W. (2003). Studying faculty salary equity: A review of theoretical and methodological approaches. In J.C. Smart (Ed), *Higher education: Handbook of theory and research volume XVIII*, 323-388. Kluwer, Great Britain: Dordrecht.
- Perna, L.W. (2005). Sex differences in faculty tenure and promotion: The contribution of family ties. *Research in Higher Education*, 46, 277-307.
- Perry, S.J. (2005). Equal pay act cases in higher education. *Journal of Individual Employment Rights*, 12(1), 21-43.
- Porter, S.R., Toutkoushian, R.K., & Moore, J.V., III. (2008). Pay inequities for recently hired faculty, 1988-2004. *The Review of Higher Education*, 31, 465-487.
- Rice, C. (2003). *An investigation of job satisfaction and need satisfaction of department chairpersons in the Connecticut state university system*. (Unpublished doctoral dissertation. University of Bridgeport, Connecticut).
- Rose, S.J., & Hartmann, H.I. (2004). *Still a man's labor market: The long-term earnings gap*, Washington, DC: Institute for Women's Policy Research.
- Smart, J.C. (1991) Gender equity in academic rank and salary. *Review of Higher Education*, 14, 511-526.
- Sonner, B.S. (2000). A is for 'adjunct': Examining grade inflation in higher education. *Journal of Education for Business*, 76(1), 5-8.
- Srinivas, S. (2007). Social attitudes and the gender pay gap in the USA in recent years. *International Journal of Social Economics*, 34, 268-275.
- Starobin, S.S., & Laanan, F.S. (2008). Broadening female participation in science, technology, engineering, and mathematics: Experiences at community colleges. *New Directions for Community Colleges*, 142, 37-46.
- Thompson, C. (2001). *The effects of perceived leadership style on the satisfaction of mid-level student affairs administrators in institutions of higher education*. (Unpublished doctoral dissertation, University of Buffalo, New York).
- Thornton, S.R. (2007). *Financial inequality in higher education. The annual report on the economic status of the profession, 2006-07*. American Association of University Professors. Washington, DC. Retrieved March 1, 2008 from <http://www.aaup.org/AAUP/comm/rep/Z/ecstatreport2006-07/survey2006-07.htm>
- Toutkoushian, R.K. (1999). The status of academic women in the 1990s: No longer outsiders, but not yet equals. *Quarterly Review of Economics and Finance*, 39 (Special Issue), 679-698.

- Toutkoushian, R.K. (2003). What can labor economics tell us about the earnings and employment prospects for faculty? In J.C. Smart (Ed), *Higher education: Handbook of theory and research volume XVIII*, 262-321. Kluwer, Great Britain: Dordrecht.
- Toutkoushian, R.K., Bellas, M.L. & Moore, J.V. (2007). The interaction effects of gender, race, and marital status on faculty salaries. *The Journal of Higher Education*, 78, 572-601.
- Toutkoushian, R.K., & Conley, V.M. (2005). Progress for women in academe, yet inequities persist: Evidence from NSOPF:99. *Research in Higher Education*, 46, 1-28.
- Umbach, P.D. (2006). Gender equity in the academic labor market: An analysis of academic disciplines, *Research in Higher Education*, 48, 169-192.
- U.S. Bureau of the Census. (2007). *Table 2: Annual estimates of the population by selected age groups and sex for the United States: April 1, 2000 to July 1, 2006 (NC-EST2006-02)*. Washington, DC. Retrieved on February 29, 2008 from <http://www.census.gov/popest/national/asrh/NC-EST2006/NC-EST2006-02.xls>
- U.S. Bureau of the Census. (2005). *Earnings in the past 12 Months (In 2005 Inflation-Adjusted Dollars)*, (American Community Survey, S2001). Washington, DC. Retrieved January 18, 2007 from http://factfinder.census.gov/servlet/STTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2005_EST_G00_S2001&-ds_name=ACS_2005_EST_G00_
- U.S. Bureau of the Census. (2007). *Income, poverty, and health insurance coverage in the United States: 2006 Report*. Washington, DC. Retrieved February 29, 2008 from <http://www.census.gov/prod/2007pubs/p60-233.pdf>
- U.S. Department of Labor, Employment Standards Administration, Office of Federal Contract Compliance Programs (OFCCP). (2006). Interpreting nondiscrimination requirements of executive order 11246 with respect to systemic compensation discrimination, Notice. *Federal Register*, 71(116), 35124.
- U.S. Equal Employment Opportunity Commission. (2005). *New Gallup Poll on employment discrimination shows progress, problems 40 years after founding of EEOC*. Retrieved March 30, 2009 from <http://www.eeoc.gov/press/12-8-05.html>.
- U.S. Equal Employment Opportunity Commission. (2009). *Centenary college to pay \$200,000 to settle EEOC sex discrimination suit*. Retrieved March 30, 2009 from <http://www.eeoc.gov/press/3-8-08.html>.

- U.S. Equal Employment Opportunity Commission (2009). *Spartan Aeronautics College to pay \$32,500 to settle EEOC sex discrimination suit*. Retrieved March 30, 2009 from <http://www.eeoc.gov/press/2-19-09.html>.
- U.S. Equal Employment Opportunity Commission. (2009). *EEOC obtains over \$300,000 for class of female professors subjected to pay discrimination*. Retrieved March 30, 2009 from <http://www.eeoc.gov/press/3-24-09b.html>.
- U.S. Equal Employment Opportunity Commission. (2009). *EEOC issues new guidance on work/family balance and promotes employer best practices*. Retrieved on March 30, 2009 from <http://www.eeoc.gov/press/5-23-07.html>.
- U.S. Equal Employment Opportunity Commission. (2009). *Acting EEOC Chairman Ishimaru lauds final passage and signing of Lilly Ledbetter fair pay act*. Retrieved April 11, 2009 from <http://www.eeoc.gov/press/1-29-09.html>.
- U.S. General Accounting Office. (2003). *Women's earnings: Work patterns partially explain difference between men's and women's earnings*. (GAO-04-35). Washington, DC. Retrieved January 18, 2007, from <http://www.gao.gov/new.items/d0435.pdf>.
- Vaughn, G.B. (1987). *Pursuing the american dream, a history of the development of the Virginia Community College System*. Richmond, VA; VCCS.
- Virginia Commonwealth University, Survey and Evaluation Research Laboratory (2007). *J. Sargeant Reynolds Community College Staff Salary Analysis*. Richmond, VA: VCCS.
- Virginia Community College System (2006). *VCCS policy manual. Faculty responsibilities: Section 3.5*. Retrieved April 24, 2007 from <http://system.vccs.edu/Polcypdf/section/Sct3.PDF>
- Virginia Community College System (2006). *VCCS policy manual. Adjunct faculty responsibilities: Section 3.0.5*. Retrieved March 4, 2008 from <http://www.vccs.edu/Portals/0/ContentAreas/PolicyManual/Sct3.pdf>
- Virginia Community College System (2006). *VCCS Statistics*. Retrieved on January 18, 2007 from <http://system.vccs.edu/vccsasr/Research/ipeds.htm>.
- Viall, N. (2007). One more time: There is no gender pay gap. *The Four Hundred*, 16 (23). Retrieved January 18, 2008 from <http://www.itjungle.com/tfh/tfh061107-story03.html>
- Vouto, L. (2005). Sauce for the gender. (Review of the book *Why Men Earn*

- More: The Startling Truth Behind the Pay Gap--- and What Women Can Do about It). *National Review*, 57, 48. Retrieved March 4, 2007 from *InfoTrac OneFile* Thomson Gale Database.
- West, M.S., & Curtis, J.W. (2006). *AAUP faculty gender equity indicators 2006*. Washington, DC: American Association of University Professors.
- Winter, P.A. (1996). The application of marketing theory to community college faculty recruitment: An empirical test. *Community College Review*, 24 (3), 3-16.
- Winter, P.A. (1998). Community college faculty recruitment practices: The effects of applicant gender, instructional programs, and job attributes. *Community College Journal of Research and Practice*, 22, 187-201.
- Winter, P.A., & Kjorlien, C.L. (2000). Community college faculty recruitment: predictors of applicant attraction to faculty positions. *Community College Review*, 28(1), 23-40.
- Witte, R. S., & Witte, J. S. (2004). *Statistics*. Hoboken, NJ: John Wiley & Sons.
- Wolf-Wendall, L., Ward, K., & Twombly, S.B. (2007). Faculty life at community colleges, *Community College Review*, 34(4), 255-281.
- Worley, J. B. (2006). *An investigation of gender differences in motivation of senior administrators in Virginia community colleges using Herzberg's Two-Factor Theory*. (Unpublished doctoral dissertation, East Tennessee State University, Johnson City).
- Youn, T.I.K. (1988). Studies of academic markets and careers: An historical review. In D.W. Breneman, & T.I.K. Youn (Eds), *Academic labor markets and careers*, New York: Falmer Press.

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