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The Effect of Union Affiliation on Salary for Female Community College Faculty

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Abstract

There is a substantial pay disparity between the highest and lowest paid full-time community college faculty members, more so for women. Faculty unions, which are common at community colleges, are believed to increase pay equity, although research on unions is limited. This study provided evidence addressing gaps in the literature regarding the community college workforce and unionization in higher education. No previous research has been conducted at the community college level examining specific union affiliation and the role it plays in salary.

The purpose of the study was to examine salary variables for female community college faculty members employed in union environments in Illinois. The research questions focused on 1) the influence of background attributes, union affiliation, and institutional characteristics on base salaries and 2) the possible difference in base salaries between AFT- and NEA-affiliated institutions.

The study utilized multiple linear regression to explain the unique contribution made by each independent variable to the 9-month base salaries of 1,861 full-time female faculty members employed in 33 community college districts in Illinois during Fiscal Year 2017. The independent variables included specific union affiliation, teaching area, educational level, tenure status, years of experience, the institution's Carnegie classification, presence of a ranking system, gender of the college president, and the number of full-time faculty.

Each of the nine independent variables were statistically significant predictors of salary and the regression model accounted for approximately 50% of the variance in salary. The findings revealed a statistically significant difference, $p < .05$, between

National Education Association salaries (M = $76,148) and American Federation of Teacher salaries (M = $72,707). The findings also revealed that faculty members working at suburban colleges, teaching in the areas of Business and Liberal Arts, and working at institutions led by female presidents had higher salaries.

Implications of this study may affect administrators, faculty, students, and union leaders. Knowledge regarding increased earning power between national unions affects faculty considering unionization. Knowledge regarding salary differences in teaching areas affects administrators, faculty, and union leaders in regard to fairness in compensation. Female community college faculty salaries reflect systemic pay inequity and must be addressed.

Keywords: faculty salaries, union affiliation, National Education Association, American Federation of Teachers, salary inequity

Dedication

This dissertation is dedicated to my parents; the person I am today is because of them.

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This dissertation is the culmination of a challenging and fulfilling graduate adventure. I have not only learned a great deal about the field of higher education and the specific focus area of my dissertation, but I have learned much about myself in the process. I am grateful to have had this adventure and to have been supported along the way by many remarkable individuals.

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CHAPTER 1

Currently, women in the United States earn 82 cents (Hegewisch & Tesfaselassie, 2019) for every dollar men earn. In "nearly every occupational field" (American Association of University Women, 2015, p. 15) and "at every level of academic achievement" (Miller, 2016, p. 14), women's median earnings are less than men's. This disparity of earnings is present in higher education where salary inequality has been a persistent problem for decades (Benjamin, 2006). Regardless of federal laws such as The Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, the Equal Employment Opportunity Act of 1972, and the Lilly Ledbetter Fair Pay Act of 2009, women have continued to earn less than men in every segment of higher education from doctoral level universities to associate level colleges (Myers, 2011).

While the pay gap has been well-documented and explored in some segments of higher education (Nettles, Perna, Bradburn, & Zimbler, 2000; Perna, 2001; Toutkoushian & Conley, 2005; Umbach, 2007; Umbach, 2008), research in the community college segment is lacking (Gahn & Twombly, 2001; Perna, 2003; Townsend & Twombly, 2007). Community colleges are of particular interest regarding pay inequality due to the prevalence of unions on campus; unions are present at community colleges in greater numbers than at other institutions (Cohen & Brawer, 2008). Historically, unions have been an important force in shaping wage policies for their members by advocating for higher salaries, reducing discrimination, and moderating pay inequality among workers (Metcalf, Hansen, & Charlwood, 2001). Theoretically, due to unionization at community colleges, there should not be pay disparity. However, recent research findings have revealed that pay inequality exists at community colleges; community college female

faculty members earn less than their male colleagues, even on unionized campuses (Floss, 2015; Myers, 2011; National Education Association, 2014a). This study will examine the factors contributing to salaries for female community college faculty members.

Background of the Study

History of Gender-Based Pay Inequality in the United States

The United States (U.S.) underwent a dramatic socioeconomic expansion after World War II resulting in increased economic and industrial productivity, higher standards of living, rapid growth in college enrollments, and an increased demand for labor (Toossi, 2002). In the decades that followed, this increased labor demand coupled with societal changes brought about by the civil rights and women's movements made the workplace more welcoming than ever for women (Toossi, 2002). As a result, more and more women entered the U.S. workforce. In 1950, women made up 29.6 % of the total U.S. workforce (Toossi, 2002); by 2015, the percentage had grown to 46.8% (Bureau of Labor Statistics, 2015). Correspondingly, the percentage of U.S. women in the workplace has risen substantially from 34% in 1950 (Toossi, 2002) to 56.7% in 2015 (Bureau of Labor Statistics, 2016). While women make up less than half of the total percentage of U.S. workers (46.8%), more than half of all women in the U.S. (56.7%) are employed outside the home (Bureau of Labor Statistics, 2015). Even though the numbers of women in the workforce have substantially increased, wages have not kept pace and pay inequality between men and women has persisted (Proctor, Semega, & Kollar, 2016).

In other words, more women in the workforce (Bureau of Labor Statistics, 2016) has not translated to pay equality in the workplace (Bureau of Labor Statistics, 2015).

Unionization in the United States and Higher Education

Historically, one of the ways employees have sought to improve their working conditions and compensation is through the organization of labor unions in the workplace (Kearney & Mareschal, 2014). Unions have had a rich and controversial history in the United States, dating back to the American Revolution (Kearney & Mareschal, 2014). Self-help organizations formed by individuals working in specific crafts and trades, similar to European guilds, influenced wages, working conditions, and product quality in various professions (Kearney & Mareschal, 2014). The first such guild to develop in America was the Cordwainers (shoemakers) organizing in Boston in 1648, later becoming the first American trade union, the Society of Master Cordwainers (Kearney & Mareschal, 2014). Early unions struggled, sometimes violently, with management to advocate for safety in the workplace, ten-hour days, job security, and a living wage; oftentimes they advocated for ideological and political causes such as women's suffrage, elimination of debtors' prisons, free universal education, and the abolishment of the military draft (Kearney & Mareschal, 2014). Violence, as well as the ideological and political rhetoric swirling around unions, often led to them being perceived as contentious and combative (Kearney & Mareschal, 2014).

The emergence of unionization and collective bargaining in higher education in the 1960s and 1970s was met with much disagreement and was seen by many as a controversial and divisive movement. According to DeCew (2003):

> Faculty unions have been controversial from the outset, and debates surrounding unionization have included heated political rhetoric. Numerous commentators have pointed out that despite the large percentage of faculty working under unions, most of the literature in higher education has ignored or overlooked unions or has been very critical of unionization in the academy. (p. 5)

While unions are well-established in higher education, there is an on-going debate about the need for unions, the role unions will play in the future of higher education (Schmidt, 2011b), and the professionalism of unions (Rhoades, 1998). Despite this debate, unionization in higher education is currently on the rise; new research published by the National Center for the Study of Collective Bargaining in Higher Education and the Professions (NCSCBHEP) details 32 new faculty unions approved by the National Labor Relations Board (NLRB) in just the first nine months of 2016, with a sizeable number of others pending approval (Herbert, 2016). Despite the controversial nature of faculty unions, it appears as if they are likely to remain part of higher education for the foreseeable future.

Faculty unions at community colleges. Faculty unions are more prevalent at public community colleges than any other sector of higher education (Cohen & Brawer, 2008). Public community college faculty members belong to unions more often than their four-year counterparts; 60% of full-time community college faculty members are working at unionized institutions compared to only 32% of four-year faculty members (Berry & Savarese, 2012, p. viii). These data were taken from the *Directory of U.S. Faculty Contracts and Bargaining Agents in Institutions of Higher Education* published

by the NCSCBHEP. The directory, last published in 2012, is an extensive compilation of faculty contracts. Unfortunately, it is only published periodically due to the burdensome task of data collection; so, while this data is seven years old, it is the most recent data in existence. Greater union prevalence in community colleges compared to four-year institutions is attributed to the historical connection between community colleges and K-12 school districts where unionization had been in place for decades prior to the 1960s (Berry & Savarese, 2012; Cohen & Brawer, 2008). Many community colleges grew out of K-12 school districts and employed former K-12 teachers (Cohen & Brawer, 2008) who brought pro-union attitudes into their new workplaces.

Two national unions, the National Education Association (NEA) and the American Federation of Teachers (AFT), represent faculty at 78% of unionized community colleges; 48% percent of institutions are affiliated with the NEA while 30% are affiliated with the AFT (Berry & Savarese, 2012). The AFT is considered to be the more aggressive union, seeking collective bargaining rights for its members while the NEA considers itself a more professional association with more moderate positions on social welfare issues (Kearney & Mareschal, 2014). Twenty-two percent of unionized community colleges are represented by a group other than NEA or AFT; the American Association of University Professors (AAUP) represents 2% of institutions, local independent unions represent 7%, non-education unions such as the American Federation of State, County and Municipal Employees (AFSCME) represent 2%, and 11% are represented jointly by more than one national union such as AAUP/AFT (Berry & Savarese, 2012).

The NEA, which has the largest presence at community colleges (Berry & Savarese, 2012), was founded in 1857 by a group of educational professionals, most of whom were school administrators; decades later, the organization began recruiting teachers (Murphy, 1990). Traditionally, it has labeled itself as an independent professional organization, focused on suburban schools (Murphy, 1990). Historically, the NEA has been more influential in state legislatures, less willing to utilize strikes, and more democratic (Schrag, 1998). Today, the NEA has three million members in 14,000 local affiliates and its focus is on providing "great public schools for all students" (NEA, 2015a). The NEA represents more than 200,000 higher education employees in public and private institutions (NEA, 2015b), mostly in mid-sized cities and suburban areas (Kearney & Mareschal, 2014).

The AFT, which is affiliated with American Federation of Labor-Congress of Industrial Organizations (AFL-CIO), was founded in 1916 by Chicago Public School teachers who were looking for better pay and improved working conditions (Murphy, 1990). The AFT grew quickly and added 174 locals in the first four years (AFT, 2017), mostly in urban areas such as Chicago, New York, and Atlanta (Murphy, 1990). Historically, the AFT has been viewed as more the traditional, urban (Schrag, 1998), and aggressive (Gibson, 1998) blue-collar union more likely to utilize strikes (Annunziato, 1994). The AFT today represents 1.7 million members in more than 3,000 local affiliates nationwide (AFT, 2017), 200,000 of whom are higher education members in all types of colleges and universities (AFT, 2017).

Faculty pay issues at community colleges

More than half of community college faculty members are women; the most recent

statistics state that 55% of all full-time community college faculty members are women (National Center for Education Statistics, 2017). Not only are community college faculty paid less than faculty at other types of institutions (National Education Association, 2014a), but also because community colleges hire more women and then pay those women less; issues of pay inequality impact women to a much greater extent. Women faculty members are experiencing a sort of double-jeopardy, they are more likely to be employed at institutions that pay the least (community colleges) and at those institutions, they are paid less than men (Floss, 2015; Myers, 2011; National Education Association, 2014a). Women faculty members are most likely to be making the least amount of money at the lowest-paying institutions in higher education.

Taking a different perspective, Hagedorn and Laden (2002) assert that the climate for women faculty members on community college campuses may be somewhat less chilly than at four-year institutions due in large part to the presence of collective bargaining. Collective bargaining is theorized to reduce disparity in salaries (Lester & Bers, 2010), increase equity in tenure and promotion decisions (Hagedorn & Laden, 2002), and provide a greater voice for women (Hartmann, Spalter-Roth, & Collins, 1994). However, other scholars have argued that a scarcity of research regarding women faculty leaves many questions about their experiences unanswered (Perna, 2003). The scarcity is mostly due to the lack of community college research overall (Gahn & Twombly, 2001; Perna, 2003; Townsend & Twombly, 2007). Perna (2003) stated it this way, “sex and racial/ethnic group differences in the employment experiences of community college faculty are poorly understood” (p. 205). While it may be accurate that two-year campuses are less chilly for women (Hagedorn & Laden, 2002), this topic

area has been virtually unexplored, and it is almost impossible to draw definite conclusions without appropriate research.

Problem Statement

There is a large disparity between the highest paid and lowest paid full-time public community college faculty members in Illinois. In fact, the lowest full-time salary is $20,294 and the highest is $160,498 a difference of $140,204 (Wilson, Brooks, Dufour, & Ferguson, 2017). Illinois is a large state and while it might be assumed that these disparities exist because of geographical differences in cost of living between urban and rural colleges, it is important to note that large disparities also exist between the minimum and maximum salaries at individual institutions (Wilson et al., 2017). At South Suburban Community College located in South Holland, IL, the lowest full-time faculty salary is $21,150 and the highest is $109,735 for a difference of $88,585; at Oakton Community College located in Des Plaines, IL, the lowest full-time faculty salary is $58,527 and the highest is $160,498 for a difference of $101,971 (Wilson et al., 2017). The inequality in salaries in Illinois has not been examined; no published research to date has focused on this area. This is not surprising given that research on the community college labor market is extremely scarce (Gahn & Twombly, 2001).

Some researchers may be hesitant to conduct salary studies due to preconceived ideas that unionization and collective bargaining eliminate inequity. Lester and Bers (2010) make this statement:

> Salary inequities are generally nonexistent in community colleges, a stark contrast from the entrenched salary disparities in four-year

> institutions. A lack of salary disparities has been attributed to the presence of unions that negotiate standard contracts, with both starting and subsequent salaries determined by degrees, years of experience, and participation in a variety of professional activities. (p. 43)

Unfortunately, there is no research to support or refute this statement. However, the prima facie evidence in Illinois indicates a substantial salary disparity between the highest and lowest paid faculty members at the institutional level and the state level (Wilson et al., 2017). This disparity raises questions about gender equity, the effectiveness of the state and national union affiliates, individual demographics, and other factors that might contribute to salary. Unless further research is conducted, there is no way to know what factors play a role in salary determination and the disparities that exist in faculty salaries in Illinois (Wilson et al., 2017).

Purpose of the Study

The purpose of this study is to test a theory which describes the factors contributing to salaries for women public community college faculty members working in union environments. There is a gap in the literature regarding faculty pay at community colleges and how specific union affiliation influences pay. The findings may explain the substantial disparity between the lowest paid and the highest paid full-time faculty members in the state, which was $140,204 in 2017 (Wilson et al., 2017). It will inform faculty members, administrators, and union leaders about the contributing variables to faculty salaries, which at this point are unknown. If these variables are unknown, it is impossible to determine whether salary inequity exists or not in the state of

Illinois. This study may help further an understanding and analysis of community college faculty salary equity in the state. This study may also influence faculty groups in the future as they are selecting union representation if the findings reveal higher salaries among members of one union versus the other. The study is restricted to only one state to eliminate the complex issues of differences in state laws, governing board policies, and institutional missions of multiple community college systems.

Another way to think about the purpose of the study is to consider the broader research questions it answered. The two research question for this study were:

1. How do background attributes, union affiliation, and institutional characteristics influence female community college faculty base salaries in Illinois?
2. Is there a statistically significant difference in base salaries of female community college faculty members between AFT and NEA affiliated institutions?

Significance of the Study

This study is significant because it provided evidence to help understand the factors that influence pay for women in community colleges, a relatively unexamined area (Perna, 2003). There are so many unanswered questions in the community college labor market (Gahn & Twombly, 2001; Perna, 2003; Townsend & Twombly, 2007); this study addressed the gap in the existing literature. The findings of previous studies have revealed a gender pay gap in community colleges (Floss, 2015; Myers, 2011; Monks & Robinson, 2000). Pay inequality is a pressing issue for both ideological and practical

reasons. Specifically, “equal pay is not simply a women’s issue - it’s a family issue.…Families increasingly rely on women’s wages to make ends meet” (American Association of University Women, 2015, p. 4). Individuals, families, children, and society are affected by lower salaries for women. “Barriers for women in higher education not only raise questions of basic fairness but place serious limitations on the success of educational institutions themselves” (West & Curtis, 2006, p. 4). Specifically, Myers (2011) contends that systemic pay differences negatively impact both individuals and institutions. In other words, if female faculty systematically are paid less than male colleagues, it may discourage highly qualified and talented women from taking positions in the academic arena, resulting in fewer numbers of women or less qualified women in the ranks, resulting in unfavorable consequences. Ultimately, fewer female faculty members may reduce the number of female graduate students who seek a career in academia and when “women are missing from the faculty ranks, the research questions they would raise…are not asked and the corresponding research is not undertaken” (West & Curtis, 2006, p. 5). West and Curtis (2006) contend that if this happens American higher education collectively suffers because of gender inequity in the faculty.

It is impossible to determine whether inequities exist without having a model to explain the role of certain variables in salary. Unless an analysis is undertaken, administrators and policymakers are not aware of the factors contributing to pay, they may be contributing inadvertently to the gender pay gap making it difficult to challenge and correct pay inequities disproportionately affecting women. It would be important to know if there is bias in determining where a faculty member is placed on the salary schedule, if faculty in certain departments are placed higher as an example. This is a

concern for both academic administrators and union leaders alike. If institutions fail to remain competitive with salaries, it may be difficult to recruit qualified faculty (West & Curtis, 2006). Similarly, union leaders strive to represent their members and get the most competitive advantage they can in terms of salary.

Although it is widely-known that women earn less than men do in the United States (Proctor et al., 2016) and scholars (Barbezat, 2002; Benjamin, 2006; Lee, 2011; Rhoades, 1998) have acknowledged a persistent gender pay gap in higher education, it is understandable that women faculty members may not be content with those realities. In fact, they may be looking for opportunities to reduce pay disparity and gain advantages over their current situation. In some cases, effective union representation could provide them with greater financial advantages (Hartmann et al., 1994). Because unionization is on the rise in higher education (Herbert, 2016; Schmidt, 2014; Schmidt, 2016), it would be helpful for faculty members and leaders to know whether there is a predicted salary advantage for one national union over another. Knowing which union is associated with higher salaries might be a major factor in the affiliation decision-making process. The findings are meaningful to faculty groups pursuing unionization or considering a change in affiliation. While there have been studies in other segments of education (Baird & Landon, 1972; Guthrie-Morse, Leslie, & Hu, 1981; Rees, 1993), no published research to date has addressed the role of specific union affiliation in community college faculty salaries.

From an institutional perspective, disparity in salaries and a lack of understanding of the factors contributing to salaries could make it more difficult to hire well-qualified female faculty members (Myers, 2011). Finkel (2005) discusses the potential challenge

of replacing community college faculty members in certain disciplines, especially in the fields of science, technology, and health care; individuals with graduate degrees in these areas can typically earn much more money working in the private sector. The ranks of community college faculty are filled with aging baby boomers; it is predicted that there will be a substantial turnover in upcoming years (Center for Community College Student Engagement, 2014; Finkel, 2005; Townsend & Twombly, 2007). Ten percent of full-time community college faculty members have 30 or more years of experience while 55% have between 10-29 years of experience (Center for Community College Student Engagement, 2014); even though it is difficult to predict exactly when faculty members will retire, these statistics seem to indicate that a sizeable departure will happen in the near future. While community colleges seem to favor replacing full-time faculty with part-time faculty to reduce costs (Cohen & Brawer, 2008), it would be expected that some of those replacements would be full-time faculty members and most of them would be women, if the current trend holds constant (Knapp et al., 2012). Attracting and retaining highly qualified faculty is directly tied to the salaries paid to faculty members (Cohen & Brawer, 2008); understanding what affects those salaries is critical for administrators and policymakers.

Lastly, this study addressed issues of basic fairness. Large disparities in the pay among colleagues who are employed in the same position seem unfair. Faculty members who are getting paid significantly less than their colleagues may question why and what causes the disparity. Unless studies such as this are conducted, faculty members' questions will remain unanswered. Perhaps there are valid, understandable reasons for

the large range in salary, but unless studies like this are conducted, those questions will persist.

Definition of Terms

Academic Rank

Academic rank refers to the titles of instructor, assistant professor, associate professor, and professor. Some community colleges use an academic rank and promotion system, similar to a university, while others do not have a formal system and all full-time faculty have the same title, usually instructor or faculty.

American Federation of Teachers (AFT)

The American Federation of Teachers is one of the largest education unions in the United States; it is a part of the larger umbrella organization, the American Federation of Labor-Congress of Industrial Organizations (AFL-CIO) (Murphy, 1990). Today, there are 1.7 million members of the AFT (AFT, 2017), and approximately 200,000 of them work in higher education (AFT, 2017).

American Association of University Professors (AAUP)

The American Association of University Professors is a non-profit professional association representing faculty and other higher education professionals (AAUP, 2017). The AAUP has a sister organization, the AAUP-CBC (Collective Bargaining Congress), which is a labor union predominantly representing four-year faculty members (AAUP, 2017).

Base Salary

Base salary is a fixed amount of money paid to an employee for work performed, generally in 26 payments throughout the year; it does not include fringe benefits, bonuses, overtime, or any other potential compensation (Business Dictionary, 2017a).

Community College

A community college is defined as a public, two-year associate degree granting institution offering both a baccalaureate transfer curriculum as well as career, technical, and workplace training programs (Cohen & Brawer, 2008). In Illinois, community college districts, similar to K-12 school districts, provide education and other services to residents in return for tax revenue (ICCB, 2016).

Collective Bargaining

Collective bargaining is the process whereby union leaders negotiate with their employers regarding working conditions, leave, and salaries (American Federation of Labor and Congress of Industrial Organizations, 2017).

Collective Bargaining Agreements

The collective bargaining agreement, otherwise known as a union contract, is a document outlining working conditions, leave and salaries for employees in a union; it is the outcome of the collective bargaining process (American Federation of Labor and Congress of Industrial Organizations, 2017).

Illinois Community College Board (ICCB)

The Illinois Community College Board is the state-wide coordinating board for all public community colleges in Illinois; the purpose of the board is to administer the Illinois Public Community College Act and provide coordination and oversight for all 39 community college districts in the state (ICCB, 2016).

Labor Union

According to Mish (1989), a labor union is an "organization of workers formed for the purpose of advancing its members' interests in respect to wages, benefits, and working conditions" (p. 668).

National Education Association (NEA)

The National Education Association is the largest education union in the United States, with over three million members (NEA, 2015a) working at every level of education, including 200,000 members working in higher education (NEA, 2015b).

Salary Schedule

A salary schedule is a spreadsheet comprised of cells in which columns and rows representing education and experience intersect to determine an individual's salary; movement occurs on the salary schedule by attaining more education and years of experience (Winters, 2011).

Unionized

Unionized refers to the presence of a union acting as the sole bargaining agent for

the faculty on a campus; all faculty members are subject to the conditions of the collective bargaining agreement (American Federation of Labor and Congress of Industrial Organizations, 2017).

Unionization

Unionization is the process of organizing employees of an educational institution or company into a labor union culminating with a majority vote to authorize the union to act as the sole bargaining agent for the employees (Business Dictionary, 2017b).

Organization of the Study

This dissertation is organized into five chapters. Chapter 1 provided background information, described the problem to be explored, delineated the specific research question, discussed the need for the research, and described key terms. Chapter 2 provides a review of literature and lays the theoretical foundation for the study. Chapter 3 describes the research methodology and data collection. Chapter 4 presents the findings and Chapter 5 discusses the implications, limitations, and opportunities for further study.

CHAPTER 2

In Chapter 1, a brief history of the two major community college faculty unions was provided as well as a discussion of the major roles and functions of unions. This chapter will address the role of salaries in job satisfaction, the literature surrounding salary inequity in higher education, and how unions influence salaries. Because faculty salaries are one of the largest educationally related expenses for institutions (Barr & McClellan, 2011) and individual salaries play a major role in recruiting, hiring, and retaining well-qualified faculty members (Finkel, 2005), it is incumbent upon policy makers and institutional leaders to have a better understanding of the issues surrounding salaries, job satisfaction, and employee retention.

Herzberg (1968) argued that salary complaints were major contributors to job dissatisfaction. If individuals are not satisfied with their salary, it can lead to overall job dissatisfaction. Similarly, Adams (1963) theorized that satisfaction with one's salary is based on a perception of fairness in the exchange between the employer and the employee; he further states that there is a factor of relative justice involved. His equity theory asserts that it is not merely a matter of feeling like one is getting fair pay for a fair day's work, but rather how one's pay compares to others (Adams, 1963). If colleagues seem to be getting paid more for similar work, similar education and experience, and similar productivity, dissatisfaction can ensue. In other words, inequity can breed dissatisfaction.

While Adams (1963) and Herzberg (1968) developed their theories roughly 50 years ago in business and industry, more recent research targeted at college faculty members revealed similar findings. Akroyd, Bracken, and Chambers' (2011) research

findings revealed perceptions of inequity led to job dissatisfaction among community college faculty members. Job satisfaction is an important component of success and retention for faculty members, especially community college faculty members; Isaac & Boyer (2007) point out "it is common knowledge that community colleges are faced with the challenge of retaining faculty and keeping them satisfied" (p. 366). In addition, several studies have demonstrated the negative consequences of job dissatisfaction among faculty members; it can lead to lowered faculty morale (Norman, Ambrose, & Houston, 2006) and also can result in less effective teaching and interactions with students (Bedeian, 2007). As these findings reveal, salary inequity often has broader institutional consequences beyond individual faculty dissatisfaction, ultimately the quality of teaching and individual faculty-student relationships may suffer (Bedeian, 2007; Norman et al., 2006). Therefore, it is important for college and university department heads, deans, and human resources professionals to be mindful of salary inequity.

Gender Inequity in Faculty Salaries

Historically, salary inequity was not really a major concern in the U.S. until the 1960s and 1970s (Barbezat, 2002). Fewer women were in the workforce and the push for equal rights had not yet begun (Barbezat, 2002). With the passage of the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, and Equal Employment Opportunity Act of 1972 (Equal Employment Opportunity Commission, 2009), greater emphasis was placed on salary equity in higher education (Barbezat, 2002). These laws were designed to make it illegal for employers to pay women less than men for equal work. In the wake of these new laws, colleges and universities began the difficult task of determining

whether inequity existed and then developing a plan to fix inequities which were discovered (Barbezat, 2002).

Initially, studies focusing only on an individual department, academic college, or single institution were the norm (Barbezat, 2002). According to Barbezat (2002), since that time, however, a large number of salary studies using national data sets have been conducted, beginning with Bayer and Astin (1968) who published the first recognized study of faculty salary differences based on gender in higher education. The study was conducted using a sample of National Science Foundation (NSF) members who were employed full-time, held doctorate degrees, and reported their primary responsibility as teaching; the findings revealed that women earned significantly lower salaries than men across disciplines, ranks, and over time (Bayer & Astin, 1968). The mean salaries of women were only 83.8% of the mean salaries of men (Bayer & Astin, 1968), or in other words, a 16.2% pay gap existed. This study was groundbreaking because not only was it the first study to use a national data set, but also it was the first to provide empirical evidence to support the long-held belief that a pay gap existed between men and women in academia (Barbezat, 2002).

The first study to include community college faculty members did not happen until 15 years later (Barbezat, 2002). Barbezat (2002) stated that Lassiter (1983) designed a study to respond to allegations of gender discrimination in faculty salaries in the state of Tennessee, and while this study is important from an historical perspective, the findings revealed no statistically significant differences in salaries between men and women.

As society continued to grapple with ideas of equality and equal rights for women, a sharper focus was placed on women in higher education (Barbezat, 2002); studies were conducted which focused on the number of female faculty members (Bach & Perrucci, 1984; Kulis, 1997), the professional responsibilities of female faculty members, and differences in pay between men and women. The findings of a number of national studies conducted in the 1980s and 1990s revealed a long standing and pervasive pay equity problem in higher education (Ashraf, 1996; Barbezat, 1989, 1991; Bellas, 1993; Porter, Toutkoushian, & Moore; Ransom & Megdal, 1993; Smart, 1991; Toutkoushian, 1998). In reviewing the faculty pay equity studies conducted from the 1960s through the 1990s, Barbezat (2002) stated that while the specific results of the studies varied somewhat, the findings revealed that faculty women always earned less than men with the range of the differential being 5.5% to 12.7%. Consistently, women were being paid less, but advocates hoped this would change as institutions more fully implemented the corrective measures needed to comply with federal guidelines and equalize pay between men and women (Barbezat, 2002).

However, as research continued in the new millennium, very little progress had been made (Barbezat, 2002). The findings of salary studies continued to show a clear and persistent pattern of salary inequity between men and women, even when controlling for education, productivity, experience, and institution type (see Nettles, Perna, Bradburn, & Zimbler, 2000; Perna, 2001; Toutkoushian & Conley, 2005; Umbach, 2007; Umbach, 2008). When reviewing the more recent literature, it is important to recognize the differences between faculty members at four-year institutions and community colleges and how these differences might impact salary equity. As Hardy and Laanan (2006) point

out, the values and characteristics of the community college environment are different from those of a four-year college or university and the demographics and expectations of the faculty in these two very different contexts should not be ignored. As an example, community colleges are more likely to hire women and people of color than four-year colleges and universities (Finkelstein, Seal, & Schuster, 1998). In addition, the majority of community college faculty members' highest degree is a master's, whereas the majority of college and university faculty members hold a doctorate (Gahn & Twombly, 2001). Because of the differences between these two institution types, it is instructive to review the research based on institutional type.

According to the National Education Association (2014), in reporting National Center for Education Statistics (NCES) data for 2012-2013, the salary differentials based on gender for four-year institutions ranged from the highest differential of 22% at doctoral level private institutions to 8% at private liberal arts colleges; for public institutions the statistics were 9% for comprehensive institutions and 20% at doctoral institutions, with men always earning more. These data (NEA, 2014) are merely descriptive and makes no attempt to account for other factors such as academic discipline and rank, but nonetheless provides prima facie evidence of a current gender gap in faculty pay at four-year institutions.

Studies which controlled for various factors such as race, years of experience, number of publications, and grants produced similar findings (Monks & Robinson, 2000; Perna, 2001; Porter et al., 2008; Umbach, 2008; Umbach 2009). Perna's (2001) study focused exclusively on four-year institutions to determine if a gender wage gap still existed; findings revealed that women were paid 26% less when no controls were utilized

in the model and 8% less when the model controlled for human capital variables, such as years of experience, rank, and research productivity. Porter et al.'s (2008) findings, which were similar to Perna's (2001), revealed 22 % less pay for women when no variables were accounted for and 9 % less when the model controlled for experience, rank, and research productivity.

More recently, Umbach (2008) conducted a study using the National Study of Postsecondary Faculty (NSOPF) 2004 data for four-year institutions and the findings revealed a statistically significant 4.5% difference in pay between men and women when institutional rank, experience, other demographic, and disciplinary variables are accounted for. While the pay gap may be closing, these findings demonstrate that inequity persists for women. Moreover, a 4.5% salary differential compounded over the course of a career is a substantial loss in pay (Umbach, 2008). Umbach's (2008) findings align with the earlier findings of Monks and Robinson (2000), which revealed a 4% salary disadvantage for women at four-year institutions. Building on Umbach's (2008) research, Myers (2011) conducted a study utilizing *NSOPF:04* data to determine what accounted for the pay differential between male and female faculty members while controlling for human capital and structural variables. Myers' (2011) findings revealed a 4.7% overall pay differential when considering faculty in all segments of higher education: doctoral, master's, baccalaureate, and associate institutions. When isolating only two-year associate degree granting institutions, the gap between male and female salaries dropped to 0.4% with women earning only slightly less than men (Myers, 2011).

According to the National Education Association (2014), gender-based salary differential for community colleges is 4%, with women earning less. In a separate

analysis conducted by Floss (2015) utilizing 2013 National Center for Education Statistics (NCES) data, comparable findings revealed the average salaries for males are 4% higher than for females. This gap is an improvement over the 11% difference which occurred in the 1970s (Floss, 2015), but nonetheless, it is still a cause for concern and further investigation.

In short, the findings of these revealed that the gender pay gap is well-established and well-documented across the field of higher education studies (Floss, 2015; Myers, 2011; Monks & Robinson, 2000; Perna, 2001; Porter et al., 2008; Umbach, 2008; Umbach 2009). Benjamin (2006) described the situation in this way, "the disparity between the salaries of men and women is a chronic problem" (p.251).

Faculty Unionization

One of the ways that faculty members have sought to deal with this chronic salary inequity is through the development and proliferation of faculty unions. While low salaries, concerns about tenure, and reductions in the number of faculty members were the main motivators for unionization in higher education (Kearney & Mareschal, 2014), there was also another motivator, greater salary equity. Metcalf et al. (2001) discuss the egalitarian effect that unions have on salaries by reducing the disparity of salaries across employees and lowering the salary differential between men and women; the authors refer to unions as the "sword of justice" (p. 73). Because salaries are negotiated or bargained for the collective good of the group rather than the individual, proponents argue that unionization can be an effective way to deal with salary inequity (Lester & Bers, 2010). Additionally, Metcalf et al. (2001) argue that unionized institutions use more objective criteria when determining salary than non-union institutions. Unions

became successful in higher education, in part, because of the hope for fairness they brought to their members.

Although the National Labor Relations Act was passed into law in 1935, allowing collective bargaining, it wasn't until the 1960s that public-sector higher education began to utilize unionization and collective bargaining to address issues such as wages, benefits, and job security (Palmer, 1999). Increasing college enrollment as a result of the post-war baby boom twenty years earlier fueled the expansion of universities and the development of community colleges to meet educational needs; more faculty members were hired and new ideas regarding salary and workload entered academia (Palmer, 1999).

One of the higher education segments in which unions and collective bargaining quickly took hold was at the community colleges. Unions and collective bargaining agreements are common in community colleges, in part because of the evolution of the institution from the K-12 system, where unions are very common (Cohen & Brawer, 2008), but also because community college faculty members tend "to have less status, independence, self-regulation, salary and benefits, and less bargaining power than their colleagues elsewhere in the profession" (DeCew, 2003, p.13). Supporters would argue that unions developed out of necessity at the community colleges in order to gain respect and fair pay; although critics would point out that they have been controversial from the beginning and much of the literature has ignored them or been "very critical of unionization in the academy" (DeCew, 2003, p. 5). As an example, Rhoades (1998) points out that "most scholars expect non-union faculty to be paid better, for unionization is considered a sign and/or cause of *de*-professionalization, and thus of lower pay" (p. 29).

Collective bargaining is now well-established in the ethos of higher education. Despite early criticisms and recent threats from state legislatures challenging public-sector collective bargaining rights (Schmidt, 2011a), it remains a considerable force in salary determination. Approximately one-third of all four-year faculty members are unionized and 42% of public community college faculty members work at institutions with collective bargaining agreements; the largest percentage in any higher education segment (Mayhall, Katsinas, & Bray, 2015). Breaking it down even further, 60% of all full-time community college faculty and 33% of part-time community college faculty are union members (National Center for the Study of Collective Bargaining in Higher Education and the Professions, 2012, p. viii).

The Unions' Impact on Faculty Salaries

Despite the role unionization and collective bargaining plays in higher education, there is little consensus about the economic impact of unionization on faculty salaries (Monks, 2000). Understanding the impact of collective bargaining is important for administrators, individual faculty members, and union leaders. Administrators are responsible for setting salary upon hiring and therefore need an understanding of the influences upon salary. Individual faculty members pay union dues and have the expectation that their union provides benefits for their dues and, obviously, one of the most visible and measurable benefits for a faculty member is salary. As unions are coming under greater scrutiny, it is important for local and national leaders to be able to point to measurable benefits to keep members happy and justify membership in unions. Union leaders tout higher salaries for unionized faculty, but empirical research is the only

way to determine whether the claim of higher salaries is accurate. This next section reviews the literature regarding the impact of unions on faculty salaries.

The term "union premium" is used to describe a salary advantage for faculty members who work at institutions where the faculty is unionized (Hedrick, Henson, Krieg, & Wassell, 2011), which means that the faculty have voted to be collectively represented in salary negotiations by a recognized bargaining agent (union) such as the American Federation of Teachers or the National Education Association. Research on the economic impact of unions in higher education began in the 1970s and the initial phase of research continued until the early 1990s; an analysis of those early studies reveals no consistent pattern of findings (Rhoades, 1998). Some of the studies' findings revealed higher average salaries in unionized settings (Ashraf, 1992; Birnbaum, 1976; Leslie & Hu, 1977; Morgan & Kearney, 1977), while other findings revealed higher salaries in non-unionized settings (Barbezat, 1989; Guthrie-Morse, Leslie, & Hu, 1981; Kesselring, 1991; Marshall, 1979; Rees, 1993), and still others (Staller, 1975; Wiley, 1993) revealed no significant differences for either group. So, after numerous studies no clear pattern had emerged (Ashraf, 1992; Barbezat, 1989; Birnbaum, 1976; Guthrie-Morse et al., 1981; Leslie & Hu, 1977; Marshall, 1979; Morgan & Kearney, 1977; Rees, 1993; Staller, 1975; Wiley, 1993).

Additionally, according to Rees (1993), there were several methodological issues with these early studies specifically with regard to the sample size, institutional matching techniques, and the number of years covered by the study, all of which called into question the legitimacy of the findings (Birnbaum, 1976; Guthrie-Morse et al., 1981; Leslie & Hu, 1977; Marshall, 1979; Morgan & Kearney, 1977). For example, Leslie and

Hu's (1977) findings revealed unionized community college faculty had significantly higher salaries than non-unionized faculty in one year, but the next year there was no difference and Wiley's (1993) findings revealed unionized community college faculty members had higher salaries than non-unionized, but only the first year after unionization. Another complicating piece of the puzzle is that some non-unionized institutions may have offered higher salary increases for several years to stave off unionization (Wiley, 1982). So, while it appeared that non-unionized institutions were offering higher salaries, it may have just been a temporary increase which distorted the overall picture.

Further complicating the issue was that some studies used only four-year institutions (Barbezat, 1989; Guthrie-Morse et al., 1981; Kesselring, 1991; Morgan & Kearney, 1977) while others (Ashraf, 1992; Birnbaum, 1976; Marshall, 1979; Rees, 1993) used both two-year and four-year institutions and others used only two-year institutions (Staller, 1975; Wiley 1993). Essentially, after two decades of research on the existence of a union premium, there were no solid conclusions, mostly due to wide-ranging differences in methodology (Hedrick et al., 2011; Rhoades, 1998).

Researchers continued to investigate salary inequality using more similar methodologies (regression analysis) and national data sets which were more widely available, thereby allowing for more comparable salary studies. Unfortunately, however, the focus on unionization as a variable in salary research began to subside in 1990s after the initial round of research stretching from the 1970s through the early 1990s. Current salary research focusing on unionization is rather limited.

When reviewing the limited current research regarding the existence of a union premium, it is important to separate the research and make a distinction between four-year institutions and community colleges for several reasons. First, faculty members at research universities typically earn substantially more than faculty members at community colleges (National Education Association, 2014), so comparing an individual community college faculty member's salary to the overall national average may not be very meaningful. The average is likely to be inflated due to the university salaries. It is much more accurate to compare unionized community college faculty members' salaries to their non-union peers. Secondly, there are some noteworthy differences between four-year and two-year colleges: not all community colleges have a faculty rank system, teaching loads are typically heavier, there is no obligation for research at the community college, and most community college faculty members hold a master's degree as their terminal degree, rather than a Ph.D. (Cohen & Brawer, 2008). These differences may be factors beyond unionization that potentially could influence salary. Lastly, as previously stated, community colleges employ more women and minorities than four-year institutions (Finkelstein et al., 1998), which can raise questions about institutional discrimination and racism. These factors taken together demonstrate the importance of separating the research and reviewing it by institutional type.

In attempting to determine the existence of a union premium, the more recent studies conducted using four-year institutions provide some interesting findings, contribute to the body of literature, and help scholars and policy-makers understand the overall impact of unionization in this sector of higher education (Ashraf & Williams, 2008; Hedrick et al., 2011; Monks, 2000). Two of these studies, Ashraf and Williams

(2008) and Hedrick et al. (2011) focus exclusively on four-year institutions, whereas Monks (2000) combines two-year and four-year institutions.

Ashraf and Williams (2008) analyzed *NSOPF:99* data and the findings revealed a 1.08% overall salary advantage for unionized institutions. In other words, when comparing salaries at unionized and non-unionized institutions, those that were unionized had salaries that were 1.08% higher than the non-unionized institutions. Interestingly, however, it was private, comprehensive unionized universities that had the greatest advantage, 5.5%, followed by public comprehensive unionized universities at 3.51% (Ashraf & Williams, 2008). The lowest numbers were found at doctoral/research universities, with unions being a disadvantage for both public and private institutions; the numbers were - 4.41% for private doctoral/research institutions and -1.01% for public doctoral/research institutions (Ashraf & Williams, 2008). It is not surprising that faculty at doctoral/research universities do not benefit from a union because the reward structure of those institutions tends to support the ideals of an individual meritocracy much more than the collective good of the group (Rhoades, 1998).

The findings of the second study focusing on four-year institutions revealed an even greater union premium. Hedrick et al. (2011) analyzed all four cycles of the NSOPF data (1988, 1993, 1999, 2004); the findings revealed a 7.4% union advantage for unionized faculty at four-year institutions. When analyzing only the *NSOPF:04* data, the premium dropped to 6.3%; even though it had dropped, the authors still referred to it as "statistically significant and economically important" (Hedrick et al., 2011, p. 10).

Monks' (2000) research muddies the waters in a couple of ways. First, the findings of his study revealed a union premium of 7.3% according to one model and 14%

when using another model and secondly, he used a mix of two-year and four-year institutions without clearly delineating between the two groups (Monks, 2000). Regardless of those complications, the results are consistent with the previous studies (see Ashraf, 1992; Barbezat, 1989; Birnbaum, 1976; Guthrie-Morse et al., 1981; Kesselring, 1991; Marshall, 1979; Morgan & Kearney, 1977; Rees, 1993; Staller, 1975; Wiley 1993). Additionally, the findings of these studies (Ashraf & Williams, 2008; Hedrick et al., 2011; Monks, 2000), correspond with the findings of Smith (1992) and Smith and Grosso (2009) which revealed a union premium at doctoral-level institutions. It appears as if there is a union advantage at four-year institutions, or to put it another way, faculty members working at four-year institutions with unionized faculties earned more than their peers who worked at non-unionized institutions.

Community college research is limited because the majority of research conducted on faculty unions is focused on doctoral universities where the researchers are employed rather than community colleges or other parts of the higher education sector (Rhoades, 1998). Early research on the effects of unionization upon community college faculty salaries was inconclusive (Henson et al., 2012). More recent research, however, has helped to clarify this issue. Generally, faculty members working in unionized community colleges earn more than their non-unionized peers (see Ashraf, 1998; Clery & Christopher, 2010; Henson, Krieg, Wassell, & Hedrick, 2012; Maldonado, 2006; Mayhall et al., 2015). For example, the findings from Maldonado's (2006) national study of community college faculty members revealed a surprising 32% difference between the average salaries of those working at institutions with collective bargaining and those working at institutions without it (p. 173). Similarly, Clery and Christopher (2010)

analyzed NCES data for the NEA *Almanac of Higher Education* and the findings revealed that faculty members at unionized community colleges earned $2,581 more than their peers at non-unionized campuses. Mayhall et al. (2015) analyzed 2010-2011 data collected from the NCES Human Resources Survey; the findings revealed a $16,482 gap in average salaries between unionized community college faculty members and those who were not unionized. It is important to bear in mind that these findings are only descriptive in nature and the studies did not control for other variables which might have influenced the findings (Clery & Christopher, 2010; Maldonado, 2006; Mayhall et al., 2015). Nonetheless, it is clear that a gap exists.

Only two studies have been published to date which focused on individual or micro-level data to determine the impact of unions on community college faculty salaries (Ashraf, 1998; Henson et al., 2012). The first study was conducted by Ashraf (1998); the findings revealed an eight percent advantage for unionized faculty members at public community colleges versus non-unionized faculty members. Henson et al. (2012) conducted a study which was more deliberate in controlling for other variables such as cost of living, institutional size, and location; the findings revealed a 3% difference in favor of unionized community college faculty when variables such as geography, rank, and institutional size were controlled. While 3.0% is not a large difference, it is statistically significant and economically meaningful when compounded over a career (Henson et al., 2012).

Specific Union Affiliation

While research findings (see Ashraf, 1998; Clery & Christopher, 2010; CUPA-HR, 2014; Henson et al., 2012; Maldonado, 2006; Mayhall et al., 2015) have revealed

some salary advantage to being a member of a union, no research to date has been published that investigates salary differences based on specific union affiliation at community colleges. This research could be extremely valuable as faculty members are making decisions about whether to unionize and if so, with which national organization to affiliate. Unionization efforts on college campuses have increased dramatically in the past several years, particularly among adjunct faculty (Schmidt, 2014) and graduate students (Schmidt, 2016), but full-time faculty have been affected as well (Singer, 2016). Even though there has been no research published involving specific union affiliation at community colleges, there have been studies conducted in other segments of education, specifically at four-year institutions (Guthrie-Morse et al., 1981; Rees, 1993) and K-12 public schools (Baird & Landon, 1972; Thornton, 1970). It is important to look to these studies to determine what relevant findings can be gleaned from them.

Guthrie-Morse et al. (1981) conducted research utilizing salary data over an eight-year period from four-year institutions; the findings revealed that institutions affiliated with the American Federation of Teachers (AFT) had the highest salaries, followed by the American Association of University Professors (AAUP) affiliates, and finally, the National Education Association (NEA) affiliates. Another study conducted by Rees (1993) revealed slightly different findings; institutions which were represented jointly by two of the three major unions had salaries which were 14.5% higher than non-union salaries, followed by the AFT at 6.2% higher, the NEA 5.2% higher, and finally, the AAUP at 3.9% higher. Faculty members who were represented by another union, most often a local union, had salaries that were lower than faculty members at non-union institutions (Rees, 1993). Kesselring (1991) took a slightly different approach, he

conducted research regarding unionization at doctoral institutions; the findings revealed no significant differences in salary based on affiliation. It is important to be cautious when drawing conclusions from these findings (Guthrie-Morse et al., 1981; Kesselring, 1991; Rees, 1993) because it is dated and may not reflect current trends.

Because the NEA and the AFT represent both community college faculty members as well as public school teachers, studies about union affiliation in the K-12 system are related to the purpose of this study. Only two studies have been conducted at the K-12 levels, both occurring in the early 1970s shortly after collective bargaining came to the public sector. The findings of these two studies both revealed higher salaries correlated with membership in the NEA (Baird & Landon, 1972; Thornton, 1970). Again, caution is needed when considering these results (Baird & Landon, 1972; Thornton, 1970) because they are over 40 years old. However, it does indicate a gap in the literature and an opportunity for further research.

Unions' Impact on Female Faculty Salaries

One of the main reasons that faculty members vote for unionization is to improve salaries (Rhoades, 1998). Ladd and Lipset's (1973) findings revealed that faculty members most likely to be in favor of unions are those who are paid less and have less influence in decision-making and governance of the institution, specifically younger and non-tenured faculty members. While Ladd and Lipset (1973) did not separate males and females in their study, an argument could be made that their findings also might apply to women who historically are paid less (Barbezat, 2003) and are less likely to be represented in the ranks of administrators or policy makers. Pursuing this idea more directly, Dworkin and Lee's (1985) findings revealed that "female faculty members

indicated a greater intention to unionize than did their male counterparts" (p. 384). Given these findings, it would be understandable that women would have the most to gain from effective union representation in terms of increased wages and greater pay equity (Hartmann et al., 1994). The impact unions have made on salaries for women is of particular importance to community colleges because women outnumber men in the ranks of community college faculty (Finkelstein et al., 1998) and community colleges are perceived as having less chilly climates for women (Hagedorn & Laden, 2002). Therefore, it is important to examine the impact unions have made on salaries for women in higher education by institutional type to determine if there is a difference between four-year schools and community colleges. There are two issues to consider in this arena. First, does unionization mitigate the gender gap and second, does unionization increase women's salaries when compared to their non-union peers?

When focusing on four-year institutions, only a handful of studies examine the salary differences between men and women in union environments. From the literature previously discussed in this chapter, it is evident that a gender wage gap in higher education still exists. It could be very beneficial to know if unions level the playing field for women as Metcalf et al. (2001) theorize. Rhoades' (1998) findings revealed that while there is still a significant gender gap in salary at unionized institutions, the gap was smaller than in a non-unionized setting; in other words, there is greater gender inequality in non-unionized settings. Ashraf and Williams (2008) analyzed data for four-year institutions and the findings revealed that being male was a "strong and significant positive determinant" (p. 144) of wages in both union and non-union institutions, meaning that men earned more than women both in union and non-union institutions, but

the gap was narrower in union institutions. Two other studies were conducted which did not distinguish between two-year and four-year institutions but provided similar results, the gap was narrower in union institutions (Ashraf, 1997; Monks, 2000). Ashraf's (1997) findings revealed that gender played a much smaller role in the salaries of unionized faculty members than non-unionized members. Similarly, the findings of Monks' (2000) study revealed a statistically significant smaller gender gap in the union sector with men earning 3.0% more than women; the gap in the non-union sector was somewhat larger with men earning 4.7% more than women.

Smith (1992) approached this issue slightly differently when she conducted a study utilizing average salaries as reported to Integrated Postsecondary Education Data System (IPEDS) from only doctoral-level institutions; the findings revealed a significant difference in the salaries of men and women in both union and non-union settings with the difference being less in union environments, but still significant. In other words, the union environment seemed to mitigate the gender gap somewhat, but the differential was not eliminated as might be expected by pro-union advocates. Interestingly, Smith and Grosso (2009) replicated the original study by Smith (1992) with some differences in the findings; the findings revealed that the gender wage gap actually was greater in union institutions at all three ranks. These findings (Smith & Grosso, 2009) are different than any previous findings on this topic and cause for further investigation. Unfortunately, Smith and Grosso (2009) did not speculate about why this might be the case.

Based on the results of these studies (Ashraf, 1997; Ashraf & Williams, 1998; Monks, 2000, Rhoades, 1998: Smith, 1992), with the notable exception of Smith and Grosso (2009), it appears that unionization mitigates the gender wage gap to some

degree. While men make more than women in both union and non-union environments; being a member of a union seems to benefit women to some degree. It is important, however, to view these results with caution, given the small number of studies in this area.

Pfeffer and Ross (1981) point out that comparisons must be made between union women and non-union women to see the full effect of unionization. Given the inherent discrimination which exists for women (Pfeffer & Ross, 1981), it is most appropriate to compare women in these two different settings rather than comparing men and women because it is too difficult to sort out the effect of discrimination versus the effect of unionization. Hedrick et al.'s (2011) findings reveal no significant differences in pay for women working in unionized versus non-unionized four-year institutions in a study using *NSOPF* data from 1988-2004. These findings (Hedrick et al., 2011) contradict Ashraf's (1992) findings which revealed that unionized women faculty at four-year institutions earned 3.28% more than non-union women faculty.

There is a paucity of research focusing on community colleges; most of the research focuses on either four-year institutions or combines the data for two-year and four year; these have been reviewed above (Ashraf, 1992; Ashraf, 1997; Ashraf & Williams, 1998; Monks, 2000, Rhoades, 1998). It appears as if only Henson et al. (2012) and Ashraf (1998) studied community colleges exclusively.

When comparing community college unionized female faculty members to unionized male faculty members, Ashraf's (1998) study is the only one published to date. Using the *NSOPF:93* data, his findings revealed differences in salary between men and women working in union environments, with men making significantly more than women

(Ashraf, 1998). Similarly, Henson et al. (2012) used all four cycles of the *NSOPF* data in their study of community college faculty members to compare women in unionized institutions to their non-unionized peers. The findings revealed no significant differences in salary for women employed by unionized community colleges versus non-unionized colleges (Henson et al., 2012). Obviously, because this is the only study, more research needs to be conducted before conclusions can be drawn.

Union Impact on Location

The limited research based on institutional location (Bayless, 1992; Glover, Simpson, & Waller, 2009) has generated some conflicting findings**.** On one hand, the findings of a study conducted by Bayless (1992) revealed that university faculty salaries were significantly lower in metropolitan areas. He asserted that faculty members were more likely to trade salary dollars for cultural, social, and spousal employment opportunities in attractive locations (Bayless, 1992). It is easier to recruit faculty members in desirable locations so institutions don't have to pay higher salaries to compete. On the other hand, rural colleges, especially community colleges, tend to have lower salaries due to lower enrollments and less revenue generated from district taxes (Miller & Tuttle, 2006). Less money is available, so faculty salaries are lower. A study conducted by Glover et al. (2009) using metropolitan and non-metropolitan community colleges in Texas produced findings which support Miller and Tuttle's (2006) hypothesis. The findings revealed that non-metropolitan community college faculty members were paid significantly less than their metropolitan peers (Glover et al., 2009). The effect of location on salary is not often studied, particularly at the four-year level. Most universities are not located in rural areas, however, this is not the case for community

colleges; 62% of all publicly controlled community colleges are classified as rural using the 2005 Carnegie Basic Classification (Carnegie Foundation for the Advancement of Teaching, 2006) system (Maldonado, 2005).

While previous studies provide a glimpse into the role an institution's location may play in salary, they fail to consider the impact of unionization on location (Bayless, 1992; Glover et al., 2009; Miller & Tuttle, 2006). Other researchers have investigated the role of unionization and location upon community college faculty salaries (Maldonado, 2006; Mayhall et al., 2015). Maldonado (2005) conducted a national study utilizing IPEDS data to investigate faculty salaries at community colleges based on the 2005 Carnegie Basic Classification Types (Carnegie Foundation for the Advancement of Teaching, 2006); variables in the study included location, rank, and unionization. The findings revealed that faculty members working at suburban, unionized colleges earned the highest salaries, with those at multiple-campus institutions earning an average of $64,659 and single-campus faculty earning an average of $62,393 (Maldonado, 2006). The lowest-paid faculty members were those working at non-unionized, small, rural community colleges, earning $39,286; they were followed closely by non-unionized faculty working at urban, single-campus institutions with a salary of $40,708 (Maldonado, 2006). Additionally, Maldonado's (2006) findings revealed a significant salary advantage for unionized faculty members in all three classes of community colleges; specifically there was a 23% advantage for union over non-union at rural institutions, 39% union over non-union for suburban colleges, and 24% union over non-union at urban colleges. Based on these findings (Maldonado, 2006), it appears as if unionization may mitigate the impact of location on community college faculty salaries.

Mayhall et al. (2015) repeated Maldonado's research, using more current data from the 2010-2011 academic year, with similar results; the highest paid community college faculty members were those working at unionized suburban, multi-campus institutions with an average salary of $77,263, while the lowest paid were those working at a non-unionized, small, rural campus with an average salary of $47,182. Similar to Maldonado's (2006) findings, unionized faculty members out-earned their non-union peers in all Carnegie classes (Mayhall et al., 2015). While these two studies are informative, this is an area in which additional research is warranted.

Union Impact on Faculty Years of Service/Seniority

Teasing out the impact of seniority or years of service on faculty salaries is somewhat complicated. The findings regarding the impact of years of service vary widely. There are two different perspectives both supported by research. One perspective states that as faculty members remain at an institution and gain more experience, their pay increases over time as they become valued senior members of the department. Salary increases because of promotions and pay raises and therefore, experience pays off over time for these faculty members (Castle, 2005; Lamb & Moates, 1999; Monks, 2000; Toutkoushian, 1998; Webster, 1995). The other perspective states that longevity at an institution works against them by decreasing their market value (Ransom, 1993). New faculty members are being hired into the university with larger salaries than senior faculty in order to compete with the external labor market; if demand is high, new hires can command a larger salary (Ransom, 1993). If salaries of senior faculty members are not adjusted accordingly, older and more experienced faculty members may actually be paid less than their new colleagues (Barbezat, 1989; Castle,

2005; Gordon, Morton, & Braden, 1974; Hallock, 1995; Hoffman, 1976; McCulley & Downey, 1993; Ransom, 1993; Umbach, 2008). As an example, Umbach's (2008) findings revealed a 0.4% decrease in faculty salary for each year that a faculty member spent at an institution. Additionally, Castle (2005) states that perhaps there is the appearance of a negative effect concerning years of service when it might not actually be the case; this could occur if another variable in the regression model is highly correlated with years of service, such as rank, thereby violating one of the assumptions of linear regression. To complicate things even further, most of the research in this area does not distinguish between two-year and four-year institutions. How years of service is measured, and the methodology of the study can greatly influence the results (Castle, 2005).

Much of the research investigating the impact of years of service upon salary was conducted in non-union environments where salaries and raises are determined for individuals, rather than in union environments where salary is bargained for the collective good (Castle, 2005; Lamb & Moates, 1999; McCulley & Downey, 1993; Ransom, 1993; Toutkoushian, 1998; Umbach, 2008; Webster, 1995). When investigating union environments, years of service may be viewed from a different perspective due to the use of a salary schedule. According to Monks (2000), years of service seem to have a strong impact on salaries in all levels of unionized institutions; this may be attributed to the salary schedule frequently used which typically rewards faculty members for their longevity at an institution.

Specifically, Monks' (2000) research, like the majority of research in this area (Ashraf, 1992; Ashraf & Williams, 2008; Barbezat, 1989; Barbezat, 2002) , included

faculty in all segments of higher education without making distinctions between four-year faculty and community college faculty; the findings revealed a greater effect for seniority in union environments. The coefficient on seniority in the union environment was 0.016 for unionized faculty and 0.006 for non-unionized faculty (Monks, 2000). Similarly, Barbezat (2002) conducted research using a national database to investigate the impact of unionization on seniority at both four-year and two-year schools; the findings revealed a significant positive return on seniority at unionized schools. The estimated seniority coefficient was about three percent for unionized faculty and one percent for non-unionized faculty (Barbezat, 2002). Ashraf's (1992) findings, which also combined two-year and four-year data, revealed a greater return on years of service in the unionized institutions.

Conversely however, Ashraf and Williams' (2008) findings revealed non-significance for years of experience in both union and non-union institutions, the variable of experience was measured both directly and as experience squared due to the proposed concave nature of the relationship between earnings and years of experience. These results concur with Barbezat's (1989) findings which revealed statistically non-significant but positive return to seniority in both two-year and four-year unionized settings. Because the role of years of experience in determining faculty salaries is still somewhat unclear, Barbezat (2002) has called for more research in this area, especially the effects of unionization on seniority or years of service.

Union Impact on Faculty Rank

Faculty rank has consistently been demonstrated to be the single best predictor of faculty salary: the higher the rank, the greater the salary (Balzer et al., 1996; Lassiter,

1983; Myers, 2011; Raymond, Sensowitz, & Williams, 1988). This finding is not surprising given that within the academic hierarchy, full professors typically are paid more than assistant or associate professors. Additionally, it is common for advancements in rank to include a raise in salary. Even though rank is such a strong predictor of salary, there has been a debate surrounding the appropriateness of it as variable in regression; one of the predominant arguments for excluding rank is that it frequently was awarded in a biased manner (Barbezat, 2002). Because of the controversy surrounding the inclusion of rank as a predictor, Balzer et al. (1996) suggest that a reasonable way to address the topic of rank is to include it if there is no evidence of discriminatory practices in awarding rank. Hypothetically, because unions have an egalitarian effect on salaries and reduce the salary differential between men and women, (Metcalf et al., 2001), rank should not be awarded in a discriminatory manner. Therefore, it is important to investigate the role rank plays in salary determination in unionized environments; unfortunately, there are only a few studies which do so (Ashraf, 1992; Ashraf, 1997: Ashraf & Williams, 2008; Henson et al., 2011; Maldonado, 2006; Monks, 2000).

Ashraf (1997) and Ashraf and Williams (2008) conducted studies utilizing data only from four-year institutions. In examining data over a 20-year period, Ashraf's (1997) findings revealed that rewards to rank were lower in unionized environments. However, more recently, Ashraf and Williams' (2008) findings revealed that the returns for rank were statistically significant in both union and non-union four-year schools, and slightly higher at union institutions. It could be argued that the more recent study is more accurate because it utilized more current data.

Two studies (Ashraf, 1992; Monks, 2000) address rank in a union environment without separating four-year schools from two-year schools, which unfortunately reduces the clarity of the findings regarding community colleges. Ashraf (1992) conducted a study utilizing data from the *1977 Survey of the American Professoriate;* the findings revealed that the salary advantage to unionized faculty members with the rank of instructor was statistically insignificant, but the advantage rose to 2.10% for assistant professors, 4.15% for associate professors, and 8.94% for full professors (p. 222). Utilizing a different data set than Ashraf (1992), Monks' (2000) study generated different findings. He used the *NSOPF:93* data; the findings revealed the returns for rank of full, associate, or assistant professor are greater in the non-unionized institutions (Monks, 2000).

When reviewing the research on community colleges, two studies focus exclusively on two-year institutions (Henson et al., 2011; Maldonado, 2006). One of the challenges in examining rank at the community college level is that not all institutions have a rank system (Maldonado, 2006). In a typical four-year institution, the rank of instructor or lecturer would fall below the rank of assistant professor, but in some community colleges, instructor is the title ascribed to all faculty regardless of their experience or tenure status; other community colleges, however, employ the traditional rank system (Maldonado, 2006). Maldonado's (2006) findings revealed an advantage in the unionized institutions for every rank, with the greatest advantage being at the instructor and associate professor level. Henson et al.'s (2011) findings were slightly different, revealing a significant disadvantage in unionized institutions at the instructor level and a significant advantage at the full professor level. Because of the inconsistency

of findings (Ashraf, 1992; Monks, 2000; Henson et al., 2011; Maldonado, 2006), further research is warranted.

Theoretical Framework

The over-arching theoretical framework for this study came from neo-classical economics. Neo-classical economic theory, in part, focuses on income distribution in markets through supply and demand (Weintraub, 2002). Included in this over-arching theory is human capital theory, structural theory, and the law of supply and demand (Mincer, 1958; Weintraub, 2002). The three tenets of neo-classical economic theory are (a) people have rational choices between outcomes, (b) individuals will attempt to maximize utility and organizations will maximize profits, and (c) people act independently based on full and relevant information (Weintraub, 2002). The academic labor market displays these characteristics; institutions attempt to maximize profits, paying less for faculty salaries if possible, while individuals make choices about accepting and retaining faculty positions. Additionally, the law of supply and demand directly relates to faculty salary. The disciplines and institutions which have a readily available supply of potential faculty members can pay less for faculty services; whereas, in those institutions and disciplines where the demand is strong and the supply is short, faculty may be able to garner higher salaries. Moreover, human capital theory and structural theory can be used to explain income distribution (Mincer, 1958) and account for both the individual choices and the complexities of market forces and organizational factors (Myers, 2011).

Human Capital Theory

"The neoclassical economic theory of human capital focuses on variations in the supply of labor, particularly the characteristics of individual workers" (Perna, 2003, p. 207). In other words, human capital theory describes the investments that an individual has made to develop oneself including education, professional training, certifications, and willingness to relocate for a job (Becker, 1962; Perna, 2003; Schultz, 1961). Investing in oneself increases the options and choices available for individuals which is a significant means to improve one's economic situation (Schultz, 1961). According to this theory, the greater the human capital one possesses, the greater the earning power (Mincer, 1958). It makes sense that individuals should be rewarded with higher salaries for more education, training, and choices which enhance their value upon hiring. However, there are limitations to human capital theory, particularly in attempting to explain the lower returns to educational investments for women and the gender pay gap (Perna, 2003). The gender pay gap in higher education still exists and women holding similar degrees to men are getting paid less, therefore the human capital theory alone cannot account for the differences in pay between individuals. In fact, research using human capital characteristics can account for only half of the variance between the salaries of men and women (Myers, 2011). In critiquing human capital theory, Tolbert (1986) states, "it ignores the possibility that the failure of women to acquire human capital, particularly job-related training and experience, may result less from their unwillingness to invest in such capital than from organizations' unwillingness to invest in the training and promotion of women" (p. 228).

Structural Theory

Structural theory has been applied to research in an attempt to offer explanations when human capital theory falls short and fails to account for the total variance in salary (Myers, 2011). Perna (2003) stated, "structural approaches emphasize variations in the demand for labor, particularly the attributes of the organizations with which individuals are connected" (p. 207). In the context of higher education, structural theory emphasizes the characteristics of the institution and their impact on faculty pay such as financial resources, enrollment, institution type, existence of a tenure system, and collective bargaining agreements (Myers, 2011; Umbach, 2009). The structural theory also considers market segmentation (Youn, 1992) and the concentration of women in certain academic disciplines (Myers, 2011). Youn's (1992) findings revealed that academic labor markets are segmented by institution type, academic discipline, and the type of work performed (teaching, research, or administration). The findings of other studies (see Bellas, 1994; Bellas, 1997; Umbach 2007) have revealed that faculty members working in academic disciplines dominated by women (education and humanities) earn less than those working in disciplines dominated by men (science and engineering).

This study utilized both the human capital theory and the structural theory to provide a detailed model of salaries for female community college faculty members in Illinois.

CHAPTER 3

Community colleges play an important role in the higher education landscape, enrolling one-third of all college students in the United States (The Chronicle of Higher Education, 2017), and yet very little research has been performed on faculty at community colleges (Thirolf, 2015; Townsend & Twombly, 2007). Relevant research needs to be conducted about these faculty members in an attempt to educate the public about the academic lives of these important players in higher education (Townsend & Twombly, 2007).

An area in which research is especially lacking is the community college faculty labor market (Gahn & Twombly, 2001), particularly research focusing on salaries for women and minorities (Perna, 2003); this is critical especially given that over half of all community college faculty members are women (National Center for Education Statistics, 2017). Despite federal laws (e.g., Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, Equal Employment Opportunity Act of 1972, Lilly Ledbetter Fair Pay Act of 2009) which were designed to level the playing field, women continue to earn less than men in community colleges across the country (Floss, 2015; Myers, 2011; National Education Association, 2014a) reflecting the inequality occurring in every sector of higher education from doctoral level institutions to associate degree institutions (Myers, 2011) for decades (Benjamin, 2006).

In the past, unions developed as a means of curbing wage inequality by advocating for higher salaries and reducing discrimination among their members (Metcalf, Hansen, & Charlwood, 2001). Unionization is on the rise in higher education;

increasing numbers of faculty members are choosing to organize unions on their campuses (Herbert, 2016; Schmidt, 2014; Schmidt, 2016). As decisions are made about with which national unions to affiliate, it would be helpful for faculty members to know which union(s) might be predicted to bring them higher wages. While research findings (Ashraf, 1998; Clery & Christopher, 2010; Henson, Krieg, Wassell, & Hedrick, 2012; Maldonado, 2006; Mayhall et al., 2015) have revealed that effective union representation can provide financial advantages, only limited research has been done regarding which specific union (Baird & Landon, 1972; Guthrie-Morse, Leslie, & Hu, 1981; Rees, 1993) might provide a larger advantage, none of which focused on community colleges. This study addresses a gap in the literature and will explore which of the two major education unions, the National Education Association (NEA) or the American Federation of Teachers (AFT), is more effective in bargaining higher salaries for their community college members. This chapter describes the research design including the population, data collection, variables in the study, data analysis procedures, and the limitations of the study.

Research Design

The purpose of this exploratory study was to better understand the role of specific union affiliation in the salaries of full-time female community college faculty members in Illinois. Other variables were included in the regression model to explain their contribution to salaries.

Research population

The state of Illinois has 48 community colleges located in 39 districts making it the

fourth largest community college system in the nation (Illinois Community College Board, 2017). The population for the study was full-time female community college faculty members in Illinois who are represented by the American Federation of Teachers (AFT) or the National Education Association (NEA). All community colleges in the state have unionized faculty associations: 25 districts are represented by the American Federation of Teachers (AFT), 12 districts are represented by the National Education Association (NEA), and two districts are represented by local unions (e.g. Illinois Central College Faculty Forum and Parkland Academic Employees Organization) as detailed in the *Fiscal Year 2017 Salary Report for the Illinois Public Community Colleges* (Wilson, Brooks, Dufour, & Ferguson, 2017).

According to the *Fiscal Year 2017 Salary Report for the Illinois Public Community Colleges* (Wilson et al., 2017), there was a total of 2,475 full-time female community college faculty members in the state of Illinois during Fiscal Year (FY) 2017; 182 were represented by local unions, 497 were represented by the NEA, and 1,796 were represented by the AFT. The 182 female faculty members working at Illinois Central Community College and Parkland Community College (Wilson et al., 2017) have been excluded because the researcher is interested in faculty who are represented by the two large national unions. Faculty members who are on a 12-month contract were also excluded because often these individuals have significant administrative responsibilities; only 2-3% of faculty members fall into that category (Wilson et al., 2017). Similarly, only faculty members who had been employed for the entire fiscal year were included; those who were hired or left during the year were excluded because the salary data reported for them would not be an accurate reflection of their annual salary. Finally, any

instances of missing or incomplete data were also eliminated from possible inclusion. Table 1 lists the 39 community college districts, the total number of full-time faculty members employed in the district, the number of female faculty members, and the union affiliation for each district (see Appendix A).

Data Collection

Illinois Community College Board (ICCB)

The data used in this study were obtained from the Illinois Community College Board (ICCB). The ICCB is the coordinating board of community colleges in the state of Illinois; its members are citizens appointed by the governor and approved by the state senate (ICCB, 2017). The powers of the ICCB, set forth in the Public Community College Act of 1965, 110 ILCS 805/ (Illinois General Assembly, 2018), include approving new programs, approving capital construction/renovation projects, facilitating transfer agreements, maintaining quality standards of instruction, and monitoring overall student and college performance (Illinois General Assembly, 2018). To facilitate these responsibilities, the ICCB requires regular substantial and detailed reporting from the 39 community college districts in the state (ICCB, 2017). According to the ICCB website:

> Under the authority of the P-20 Longitudinal Education Data System Act (105 ILCS 13/1 et seq.) (the "LDS Act"), ICCB is the State Education Authority responsible for collecting and maintaining enrollment, completion, and student characteristic information on community college students. Illinois Community College System data collection, administrative data matching, and reporting is

> effectively and efficiently coordinated through ICCB. To assist in carrying out its mandate and to formulate policy, the Illinois Community College Board collects data from the community college system as well as other providers of services via grant programs. (ICCB, 2016a, para. 1)

ICCB's Centralized Data System was established 30 years ago and collects millions of student and staff records annually (ICCB, 2016a). At most Illinois Community Colleges, the Vice-President of Academic Affairs has institutional responsibility for overseeing the ICCB reporting, with specific tasks often being delegated to the Director of Institutional Research or the Director of Human Resources as appropriate; ICCB reporting is an administrative priority, particularly because state funding is contingent upon compliance (L. Chapman, personal communication, January 26, 2018). The state of Illinois mandates reporting to the Centralized Data System in a manner similar to the United States Department of Education's mandate for colleges to report to the Integrated Postsecondary Education Data System (IPEDS). The *System Rules Manual of the Illinois Community College Board* describes the type of data collected regarding faculty members:

> Annual salary data and basic characteristics, including but not limited to sex, date of birth, ethnic classification, highest degree earned, tenure status, and employment or teaching areas, of the faculty and staff employed by the college as of October 1 shall be submitted on or before October 15 of each year. Fiscal year data shall be submitted on or before June 15. (ICCB, 2018, p. 27)

This study used Fiscal Year (FY) 2017 data, which ended on June 30, 2017 and student enrollment numbers from fall semester 2016. The structure and regulations of the ICCB reporting system leads to consistency in reporting and reliability of the data.

The data were requested under the Illinois Freedom of Information Act, 5 ILCS 140/1, of 2010, which was designed to create greater transparency and accountability for public entities. The Illinois Community College Board serves as the clearinghouse for Freedom of Information Act (FOIA) requests (ICCB, 2016a). Follow-up FOIA requests were sent to individual districts in the case of missing data.

Variables for the Study

This section describes the variables included in the model. A brief description of each variable and how it was measured is provided. The model is displayed in Figure 1 and the variables are defined in detail below.

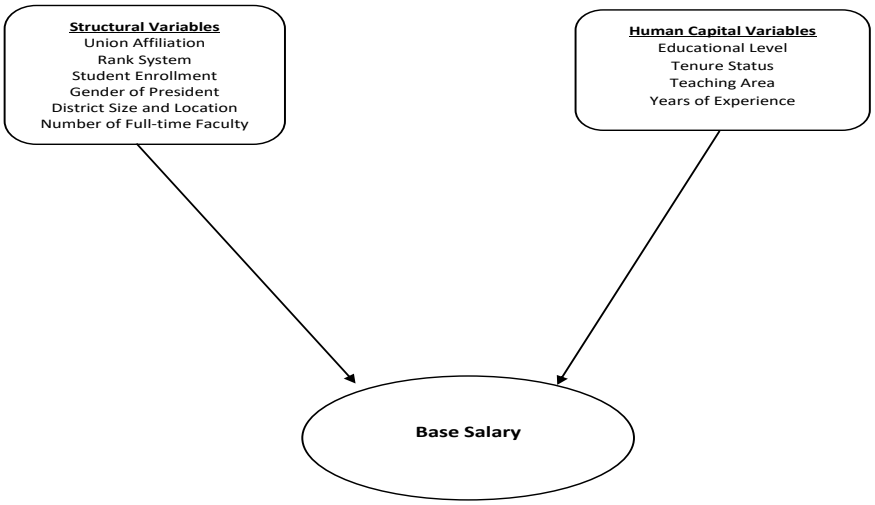

Figure 1. Variables in Regression Model

Dependent variable. The dependent variable was the faculty member's 9-month base salary for Fiscal Year 2017 as reported to ICCB Centralized Data System by the community college district. It excluded payment for overload, summer school, or duties outside the normal teaching load, and fringe benefits.

Independent variables. The independent variables included human capital and structural variables. According to human capital theory, wages should be determined by an individual's skill and ability (Toutkoushian & Conley, 2005); factors such as education, professional training, and certifications have been identified as human capital variables (Becker, 1962; Perna, 2003; Schultz, 1961). Structural variables include factors such as financial resources, enrollment, institution type, existence of a rank system, and collective bargaining agreements (Myers, 2011; Perna, 2003; Umbach, 2009). The specific independent variables are listed below and are identified as being human capital or structural.

***Union affiliation*.** This structural variable was coded for the organization that represents the faculty association in each district, either the AFT or the NEA.

***Education level*.** Education level, a human capital variable, was coded according to the faculty member's highest degree earned in the following categories: associate degree/certificate, bachelor's degree, master's degree, or doctorate/professional degree.

***Tenure status*.** Full-time faculty members have three years to earn tenure in the Illinois community college system; if they do not earn tenure, they are released from their position (Illinois General Assembly, 2018). Tenure status, a human capital variable, was coded as tenured or non-tenured.

Years of full-time faculty experience at current institution. This variable is defined as the number of academic years employed as a full-time faculty member at the current institution and was calculated, according to the date of hire. Previous experience in a staff or administrative role was excluded from this variable. This variable served as a proxy for rank. While the findings of several studies (Balzer et al., 1996; Lassiter, 1983; Myers, 2011; Raymond, Sensowitz, & Williams, 1988) revealed that rank is the single best predictor of salary at the university level, there have been concerns expressed in the literature (Balzer et al., 1996; Barbezat, 2002; Becker & Toutkoushian, 2003; Myers, 2011) that the awarding of rank is a discriminatory process by nature, leading to a disproportionate number of males at higher ranks. Additionally, not all community colleges use a ranking system (Maldonado, 2006); in fact, only 46% of districts in Illinois utilize a ranking system (Wilson et al., 2017). Most of the colleges not using a ranking system use the term "instructor" as a generic term to apply to all faculty, regardless of experience; however, for those that use a ranking system, "instructor" is one of the lowest levels in the system (Wilson et al., 2017), which can lead to confusion. Due to the concerns of potential discrimination in awarding rank and the lack of consistency in the use of rank in Illinois community colleges, this human capital variable, years of full-time faculty experience at current institution, served as a proxy for individual rank.

Teaching area. This human capital variable was coded according to the primary teaching assignment. Primary assignment was determined using the following categories: health sciences, technology, business, liberal arts, workforce development, math/science, hospitality, and computer sciences. This information is reported to the ICCB Centralized Data System (ICCB, 2018).

Ranking system. This structural variable was coded to reflect the presence of a ranking system in the community college district; it was coded as either yes or no.

Number of full-time faculty members. This variable measured the total number of full-time faculty members on the campus which is reported in the *Fiscal Year 2017 Salary Report for the Illinois Community College Board* (Wilson, et al., 2017).

Student enrollment. This structural variable was measured in full-time equivalent enrollment (FTE) for the 2016-2017 academic year reported to the ICCB Centralized Data System.

Carnegie 2010 classification. This structural variable was coded according to the Carnegie Classification of Institutions of Higher Education's (n.d.) 2010 classification system, the categories include: Associate's—Public Rural-serving Small, Associate's—Public Rural-serving Medium, Associate's—Public Rural-serving Large, Associate's—Public Suburban-serving Single Campus, Associate's—Public Suburban-serving Multi-campus, Associate's—Public Urban-serving Single Campus, and Associate's—Public Urban-serving Multi-campus. The classification system was updated in 2015 (Carnegie Classification of Institutions of Higher Education, n.d.), but those classifications do not include location which is a relevant consideration for salary (Miller & Tuttle, 2006).

Gender of president. Recently, there has been an increasing number of calls for solidarity among women in society as well as in the workplace; with special emphasis being placed on women in power supporting other women on the way up (Mavin, 2008). Lim (2006) argues that the presence of women and minorities in bureaucratic or leadership roles can increase benefits for their social group by expressing disapproval of

discriminatory behaviors by the majority, challenging biases, and promoting changes in the organizational culture. It might be expected then, that a female college president would advocate for salary equity on behalf of female faculty members. To date, there has only been one study that has included this variable as part of the regression analysis; Lee and Won (2014) utilized this structural variable in a study of gender equity at four-year universities and found that contrary to their hypothesis, a female president did not positively impact female faculty salaries. Gender of the president was included in this study and was coded for female or male as identified on each community college's website.

Data Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS), version 25. Regression analysis is a branch of statistics concerned with understanding relationships among variables, specifically which independent variables are related to the dependent variable (Mendenhall & Sincich, 2012). The regression model can be used to predict, explain, or describe relationships (Shmueli, 2010). Multiple regression analysis is the most common statistical method used to analyze variables in faculty salary studies (Balzer et al., 1996; Myers, 2011). Base salary is used as the dependent or criterion variable and the variables thought to influence it become the predictor variables or independent variables; a regression equation is determined utilizing the least squares criterion which will estimate the impact of each predictor variable on the salary and the estimates will be measured for statistical significance (Balzer et al., 1996). Some economists recommend using the natural logarithm of salary (Balzer et al., 1996) because it creates a more normal distribution (Myers, 2011; Perna, 2001); this was

explored, but determined to be unnecessary given the distribution of salaries. Specific union affiliation was the primary independent variable tested. The best model was determined, checking for multicollinearity among predictor variables and then tested to determine its effectiveness. Balzer et al. (1996) recommends the following steps in salary regression: (a) identify predictors of salary, (b) identify and establish criteria for interpreting statistical tests, (c) determine the criterion variable in the model, (d) develop the salary model, (e) test for discrimination, (f) conduct diagnostic procedures to confirm appropriateness of the final salary model, and (g) test for assumptions of the regression model. Once the model was developed and tested for assumptions, it was refined as necessary.

Limitations of the Study

Illinois was chosen as the context for this study for several reasons. First, by limiting the participants to just one state, differences in collective bargaining, right-to-work, and higher education funding laws are eliminated. Because some states allow collective bargaining by unions and others don't (Maldonado, 2006), it becomes difficult to compare union effectiveness between states when the laws governing their functioning may be so different. Secondly, by limiting the context to just one state, the data are reported in the same way. The ICCB has very strict reporting guidelines to ensure consistency of data collection, which allows for greater comparison among community college districts. Lastly, the Illinois Community College Board collects and publishes a tremendous amount of data including enrollment numbers, faculty and staff employment figures, and financial expenditures and revenues (ICCB, 2017), which allows for relative convenience in accessing data. Those factors beyond the researcher's control include

unintentional errors made in the reporting of the data and what data was made available from the Illinois Community College Board.

Summary

Regression analysis was utilized to determine variables affecting faculty salaries at the community college level. Once the best model was determined, it was tested for statistical significance and utilized to predict the effects of specific union affiliation, human capital, and structural variables on full-time female community college faculty salaries.

CHAPTER 4

Results

The purpose of this study was to describe and to predict the variables contributing to salaries for female public community college faculty members working in union environments in the state of Illinois. It aimed to identify structural and human capital variables that explain and predict 9-month base salaries of these women. Structural variables are those factors related to the institution's organization and structure, including number of full-time faculty, student enrollment, institution type, existence of a rank system, and collective bargaining agreements (Myers, 2011; Perna, 2003; Umbach, 2009). Human capital factors describe individual variables such as educational level, professional training, professional experience, and tenure (Becker, 1962; Perna, 2003; Schultz, 1961).

This study was undertaken to shed light on the community college labor market, an area which has been inadequately researched (Gahn & Twombly, 2001; Henson et al., 2012). This lack of research is concerning particularly because over half of all community college faculty members are women (National Center for Education Statistics, 2017) who continue to earn less than men in community colleges nationwide (Floss, 2015; Myers, 2011; National Education Association, 2014a). Unions, which are common at the community college level, (Cohen & Brawer, 2008) were developed in an attempt to reduce wage inequality among their members (Metcalf et al., 2001). However, the research into unions' effectiveness at the community college level is extremely limited. While some research findings have revealed a financial advantage for community college faculty members working in a union environment (Ashraf, 1998; Clery & Christopher, 2010; Henson, Krieg, Wassell, & Hedrick, 2012; Maldonado, 2006;

Mayhall et al., 2015), no research has been conducted to investigate if one of the two major education unions, the American Federation of Teachers (AFT) and the National Education Association (NEA), provides an advantage over the other.

Research Questions

There were two research questions for this study:

1. How do background attributes, union affiliation, and institutional characteristics influence female community college faculty base salaries in Illinois?
2. Is there a statistically significant difference in base salaries of female community college faculty members between AFT and NEA affiliated institutions?

This study utilized multiple linear regression to answer the research questions. Regression analysis is a branch of statistics concerned with understanding relationships among variables, specifically which independent variables are related to the dependent variable (Mendenhall & Sincich, 2012). The regression model can be used to predict, explain, or describe relationships (Shmueli, 2010). The regression equation was determined utilizing the least squares criterion which estimated the impact of each predictor variable on the salary and the estimates were measured for statistical significance (Balzer et al., 1996). Multiple regression analysis is the most common statistical method used to analyze variables in faculty salary studies (Balzer et al., 1996; Myers, 2011).

Variables

Two types of independent variables were used as predictors of salary, based on previous research and theory: structural variables, which pertain to the institution (Myers, 2011; Perna, 2003; Umbach, 2009); and human capital variables, which pertain to the individual (Becker, 1962; Perna, 2003; Schultz, 1961). Six factors were identified as structural variables and included in the analysis: (a) 2010 Carnegie classifications of size and location, (b) specific union affiliations, AFT or NEA, (c) the presence of a ranking system, which allows for upward mobility in titles and positions ranging from associate instructor to full professor, (d) student enrollment, (e) the gender of the college president, and (f) the number of full-time faculty members. Four factors, which are based on the individual's background and expertise, were identified as human capital variables: (a) tenured or non-tenured faculty status, (b) years of experience at the current institution, (c) highest level of education, and (d) teaching area. Initially, in the conceptualization and proposal of this study, teaching area was identified as a structural variable, but upon further analysis and consideration, it was included as a human capital variable due to the individual nature of the variable. The individual faculty member selected her area of professional expertise, so it made more sense to include it with the human capital variables.

Data Collection

Information about the structural variables in this study are publicly available. The data were obtained from the *Fiscal Year 2017 Salary Report for the Illinois Public Community Colleges*, (Wilson, et al., 2017) published by the Illinois Community College

Board (ICCB), the ICCB website (ICCB, 2017b), and the individual community college district websites. The proposed data collection plan involved obtaining the human capital variables, which are individual level data, from the ICCB Research and Policy Studies office. The ICCB Research and Policy Studies office ruled that the requested data belonged to the individual community colleges, not ICCB (N. Wilson, personal communication, December 5, 2018); the request was denied because ICCB did not have ownership of the data. However, the ICCB has recently begun making salary data publicly available on its website in spreadsheet form (ICCB, 2010). This publicly shared information provided by ICCB (2010) included the name of the college, the faculty member's full name, title, nine-month base salary, employment status (full-time or part-time), and employment classification (instructional or administrative). A follow-up Freedom of Information Act (FOIA) request was sent to ICCB requesting the following variables for all full-time faculty members teaching at community colleges in Illinois; 9-month base salary, title, age, gender, race, educational level (highest degree obtained), and date of full-time hire. The variables of age, race, and gender were deemed "private information" by the ICCB under state law 5 ILCS 140/7(1)(b) not subject to disclosure under FOIA and therefore not provided by ICCB (M. Berry, personal communication, December 18, 2018). Because the names were attached to each individual record, gender was determined by analyzing first names, if there was any question about the gender of the faculty member, it was verified by searching the individual college website for additional information about the faculty member. Unfortunately, the age and race of faculty members were not accessible for this study.

The data provided by ICCB through the FOIA request, was missing information from nine community college districts. Follow-up FOIA requests were sent to those nine individual colleges; four college districts returned information that did not include faculty member's names, so those colleges were excluded from the study. Two other college districts were also excluded from the study, Parkland Community College and Illinois Central College, because those two institutions have local unions that are not affiliated with the AFT or the NEA.

Sample

The sample study included 1,861 female community college faculty members employed at 33 public community college districts in the state of Illinois during Fiscal Year 2017. This number was arrived at after eliminating faculty members employed at community colleges that are not affiliated with the AFT or the NEA, those faculty not employed for the entire fiscal year of 2017, and those for whom there was missing data. The descriptive statistics described below use N=1,861 for the human capital variables and N = 33 for the structural variables pertaining to the college districts themselves. Mendenhall and Sincich (2012) state that an adequate sample size for a regression equation should be ten times the number of parameters included in the equation. The final regression equation in this study had nine parameters; the sample of 1,861 well exceeds the minimal expectation of 90 individuals in the sample.

Descriptive Statistics

This section provides the descriptive statistics for the 33 public community college districts in Illinois which were included in the sample as well as the descriptive

statistics for the 1,861 individual female faculty members working at those institutions. The discussion of structural variables applies to the institutions as a whole, while the discussion of the human capital variables is directly related to the individual faculty members.

Structural Variables

The structural variables included in the analysis were: (a) 2010 Carnegie classifications of size and location, (b) specific union affiliations, AFT or NEA, (c) the presence of a ranking system, (d) student enrollment, (e) the gender of the college president, and (f) the number of full-time faculty members. The Carnegie classifications describe the location, number of campuses, and size of the institution (Carnegie Foundation for the Advancement of Teaching, 2006). Six of the 33 Illinois colleges in the sample were classified as "Public rural-serving, medium size (R-M)," 13 were classified as "public rural-serving, large size (R-L)," 10 were classified as "suburban-serving, single campus (SU-SC)," three were classified as "public suburban-serving, multi-campus (SU-MC)," and one was classified as "public urban-serving, multi-campus (U-MC)". Previous research findings (Maldonado, 2006) revealed that location of the community college influences salary; faculty members working at public suburban community colleges in the United States earned the highest salaries while those working at public small, rural community colleges earned the least. All colleges in the sample were union affiliated; 21 of the 33 community college districts were AFT affiliated, and 12 districts were NEA affiliated. Regarding the existence of a ranking system, which uses various titles and allows for promotions, 19 of the 33 institutions in the sample did not use a ranking system, while 14 institutions did use a ranking system. Twenty-one of

the 33 community college districts in the sample had a male president, and 12 had a female president. For a description of the categorical structural variables, which cannot be measured on a numerical scale, (Mendenhall & Sinich, 2012) for the 33 community college districts in the sample, see Table 1.

Table 1

Descriptive Statistics for Categorical Structural Variables

Variable	*n*	%
Carnegie classification		
Public rural-serving- medium	6	18.2
Public rural-serving- large	13	39.4
Public suburban-serving – single campus	10	30.3
Public suburban-serving – multi campus	3	9.1
Public urban-serving – multi campus	1	3.0
Union affiliation		
AFT affiliated	21	63.6
NEA affiliated	12	36.4
Existence of ranking system		
Yes	14	42.4
No	19	57.6
President gender		
Male	21	63.6
Female	12	36.4

Note. N = 33

In addition to the four structural variables described above that are categorical, two of the structural variables are continuous variables, which means they can be measured on a numerical scale (Mendenhall & Sinich, 2012). Student enrollment and

number of full-time faculty for each community college district are continuous structural variables. The average student enrollment across all 33 districts was 8,956 (*SD* = 9,489), ranging from one college (at the lower end) with 878 students enrolled, to a college with 29,128 (at the upper end). The median student enrollment was 4,829 students. The average number of full-time faculty across all 33 districts was 207 (*SD* = 177), ranging from one college (at the lower end) with 33 full-time faculty, to one college with 582 full-time faculty (at the upper end). The median number of full-time faculty was 149.

Human Capital Variables

Four factors, which are based on the individual's background and expertise, were identified as human capital variables: (a) tenured or non-tenured faculty status, (b) years of experience at the current institution, (c) highest level of education, and (d) teaching area. In the state of Illinois, community college faculty members are given three years to earn tenure; if they fail to do so, they are released from their position (Illinois General Assembly, 2018). Of the sample of 1,861 female faculty members, 76.5% had tenure and 23.5% did not have tenure. The average number of years of experience at the current institution was 9.54 years (*SD* = 7.41), ranging from 0 years to 52 years of experience. The median years of experience was 9.00. When broken down categorically, 37.0% had between 0 and five years of experience, 24.0% had between six and 10 years of experience, 20.4% had between 11 and 15 years of experience, 10.0% had between 16 and 20 years of experience, and 8.6% had more than 20 years of experience (see Table 2).

Regarding the sample's highest level of education, most faculty members had a master's degree (69.0%), followed by those with a doctoral degree (22.7%), those with a

bachelor's degree (6.7%), those with an associate's degree or a certificate (1.9%), and one participant with a high school diploma (0.1%). Faculty members in the sample came from a wide range of teaching areas. The teaching area with the highest percentage was liberal arts (32.0%), followed by health science (26.2%), and math/science (21.2%). All other teaching areas had less than 6%. For a full description of human capital variables, see Table 2.

Table 2

Descriptive Statistics for Human Capital Variables

Variable	*n*	%
Tenure		
Yes	1,424	76.5
No	437	23.5
Years of experience		
0-5 years	688	37.0
6-10 years	447	24.0
11-15 years	380	20.4
16-20 years	186	10.0
More than 20 years	160	8.6
Highest level of education		
High school degree	1	0.1
Associate degree/Certificate	29	1.6
Bachelor's degree	124	6.7
Master's degree	1,284	69.0
Doctoral degree	423	22.7
Teaching area		
Business	108	5.8
Computer Science	51	2.7
Education	79	4.2

Table 2 (continued).

Variable	*n*	%
Health science	487	26.2
Liberal arts	596	32.0
Math/Science	395	21.2
Technology	50	2.7
Workforce development	74	4.0
Hospitality	21	1.1

Note. N = 1,861

Nine-month base salaries. Salaries for the 2017 fiscal year were collected from 1,861 female faculty members in 33 community college districts. The average 9-month base salary was $73,849 (*SD* = $20,714), ranging from $20,567 (at the low end) to $160,498 (at the upper end). The median 9-month base salary was $70,238.

Regression Analysis

Before analyses were conducted, the data were compiled in the Statistical Package for the Social Sciences (SPSS) Version 25 and screened for outliers based on the dependent variable of 9-month salary. After the descriptive statistics were calculated, the next step was to assess the statistical assumptions of linear regression to determine if the assumptions were met. A cut-off of +/- 3 standard deviations from the mean was used to identify outliers; six outliers were identified and eliminated from the sample. All outliers received a 9-month base salary of greater than $135,991; four received a base salary of $138,141, one received a base salary of $144,586, and one received a base salary of $160,498. All outliers came from the same institution, a public suburban multi-campus

institution. After these outliers were removed, data from 1,855 female community college faculty members were included in the regression analysis. The established criteria for determining statistically significant results was set at an alpha level of .05.

Testing the assumptions of multiple regression. Several statistical assumptions of multiple linear regression must be assessed before conducting the regression itself. First, the assumption of multivariate normality was tested. This assumption states that the residuals are normally distributed. Based on the standardized residual plot, it was determined that the assumption of multivariate normality was accounted for when all structural and human capital variables were in the model, treating 9-month base salaries as the dependent variable. Then, the data were assessed for multicollinearity. The independent variables should not be highly correlated with each other. This assumption was tested using Variance Inflation Factor (VIF) values. If the VIF is less than 10, the assumption of multicollinearity is met. VIF was less than 10 for all but two variables, student enrollment and number of full-time faculty members. In fact, student enrollment and number of full-time faculty members were highly correlated, $r = .990$, $p < .001$. As such, student enrollment was removed from the final multiple-regression model, because number of full-time faculty members essentially measures the same factor. Removing student enrollment from the model lowered the VIF of the number of full-time faculty members to 4.38. Next, the data were assessed for homoscedasticity. The variance of each error term should be similar across different values of the independent variable. A plot of standardized residuals versus predicted values showed whether the data points are equally distributed across all values of the independent variable(s). Based on the residual scatterplot, it was determined that the assumption of homoscedasticity was met for the

analysis with 9-month base salaries taken as the dependent variable. Because the statistical assumptions associated with multiple linear regression analyses were accounted for, a multiple linear regression was carried out.

Research Question 1

Multiple regression was used to answer Research Question 1, which examined the background factors, union affiliation, and institutional characteristics that influence base salary for female community college faculty members in Illinois. In the regression equation, Carnegie classifications, union affiliation, existence of ranking system, president gender, number of full-time faculty, tenure status, years of experience, highest level of education, and teaching area were the independent or predictor variables; and 9-month base salaries for the 2017 fiscal year was the dependent variable. A significant regression equation was found, $F(9, 1845) = 207.35$, $p < .001$, with an R^2 of .503 (see Table 3). This indicates that the structural and human capital variables included in the model account for approximately 50% of the total variance in 9-month base salaries for female community college faculty members in Illinois for the 2017 fiscal year. The regression formula for this study was:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \epsilon$$

Stating the formula using the specific variables, it would read this way:

$$\textit{Base Salary} = \beta_0 + \beta_1 \textit{(Carnegie classifications)} + \beta_2 \textit{(Union affiliation)} + \beta_3 \textit{(Ranking system)} + \beta_4 \textit{(President gender)} + \beta_5 \textit{(Full time faculty members)} + \beta_6 \textit{(Tenure)} + \beta_7 \textit{(Years of experience)} + \beta_8 \textit{(Level of education)} + \beta_9 \textit{(Teaching Area)} + \epsilon$$

Base salaries were equal to $23,058.45 + $3,509.87 (Carnegie classifications) + $4,502.01(Union affiliation) + $9,523.04 (Ranking system) + $5,891.56 (President gender) + $24.66 (Full time faculty members) + $3,393.35 (Tenure) + $1,340.85 (Years of experience) + $6,072.67 (Level of education) -$899.18 (Teaching area). All variables significantly contributed to the predicted 9-month base salaries (see Table 3).

Table 3

Multiple Regression of Variables

Predictors	Regression Coefficient	SE	*t*
Constant	23,058.45	2,080.62	11.08***
Structural Variables			
Carnegie Classifications	3,509.87	579.17	6.06***
Union Affiliation	4,502.01	798.91	5.64***
Existence of Ranking system	9,523.04	745.46	12.78***
President Gender	5,891.56	821.51	7.17***
Number of Full-time Faculty	24.66	3.95	6.25***
Human Capital Variables			
Tenure	3,393.35	1004.67	3.38***
Years of Experience	1,340.85	58.55	22.90***
Highest Level of Education	6,072.67	583.60	10.41***
Teaching Area	-899.18	215.886	-4.17***

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Regarding the structural independent variables, which are related to the institution's organization and structure, all were significant predictors of 9-month base salaries, $p < .001$. Holding all other variables constant, Carnegie classifications

significantly predicted 9-month base salaries. Those working at suburban-serving, single campus institutions had the highest salaries (*M* = $84,067), followed by those at urban- and suburban-serving multi-campus institutions (U-MC: *M* = $78,014; SU-MC: *M* = $78,313). Those at rural-serving (large) institutions earned significantly less (*M* = $64,234), and those at rural-serving (medium) earned even less ($57,642) (see Table 4).

Table 4

Salary Means Based on Independent Variables

Variable	*M*	*n*	*SD*
Carnegie Classification			
Rural Serving-Medium	57,642	137	11,929
Rural Serving-Large	64,234	522	14,782
Suburban-Single Campus	84,067	618	22,728
Suburban-Multi-Campus	78,313	274	21,842
Urban-Multi-Campus	78,014	304	13,648
Presence of Rank System			
No	71,728	1118	18,251
Yes	76,503	737	22,922
President's Gender			
Male	69,875	1094	17,639
Female	79,018	761	22,692
Tenure Status			
No	61,356	437	768
Yes	77,407	1418	524

Table 4 (continued).

Variable	*M*	*n*	*SD*
Education Level			
High School diploma	55,036	1	--
Associate degree	52,205	29	15,299
Bachelor's degree	61,432	124	17,421
Master's degree	72,476	1278	19,516
Doctoral degree	82,184	423	20,289
Teaching Area			
Business	76,773	108	2,111
Computer Science	74,641	50	2,739
Education	76,190	79	1,987
Health Science	70,650	486	925
Liberal Arts	76,318	594	837
Math/Science	73,763	393	1,007
Technology	71,812	50	3,354
Workforce Development	66,922	74	2,004
Hospitality	63,441	21	3,535
Total	73,626	1855	20,365

Furthermore, institutions that implemented a ranking system had higher average salaries (*M* = $76,503) than those who did not ($72,707) (see Table 4).

The gender of the president at each institution was also a significant predictor of 9-month base salaries. Institutions with a female president had a higher average salary (*M* = $79,018) than institutions with a male president (*M* = $69,875) (see Table 4).

Finally, the number of full-time faculty members (treated as a continuous variable) was a significant predictor of 9-month base salaries. A significant correlation between number of full-time faculty members and average salary per institution revealed that as faculty size increases, so does the average salary at that institution, r = .23, p <.01 (see Table 5).

Table 5

Pearson Correlations Among Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. 9-month Salary	__	.23**	.22**	.08**	.12**	.51**	.34**	-.05*	.33**	.29**
2. Number of FT Faculty	.23**	__	-.22**	-.25**	-.31**	-.10**	-.03	.05*	.81**	.16**
3. President's Gender	.22**	-.22**	__	.08**	.12**	.12**	.04	-.00	.12*	.08*
4. Union Affiliation	.08**	-.25**	.08**	__	.27**	.02	-.06**	-.05*	.12*	-.02
5. Ranking System	.12**	-.31**	.12**	.27**	__	-.04	-.14**	-.03	-.26**	-.01
6. Years of Experience	.51**	-.10**	.12**	.02	-.04	__	.60**	.00	-.02	.06**
7. Tenure	.34**	-.03	.04	-.06**	-.14**	.60**	__	.04	.02	.07**
8. Teaching Area	-.05*	.05*	-.00	-.05*	-.03	.00	.04	__	.05*	.05*
9. Carnegie Classification	.33**	.81**	.12*	.12*	-.26**	-.02	.02	.05*	__	.19**
10. Level of Education	.29**	.16**	.08	-.02	-.01	.06**	.07**	.05*	.19**	__

Note. *p < .05, **p < .01, ***p < .001

Regarding human capital variables, all were significant predictors of 9-month base salaries ($p < .001$). Faculty with tenure had higher salaries (M = $77,407) than those without tenure (M = $61,356) (see Table 4).

Additionally, years of experience at the present institution was a significant predictor of 9-month base salaries. A significant correlation between years of experience and 9-month base salaries revealed that as the number of years of experience increased, so does the 9-month base salaries, r = .51, $p < .001$ (see Table 5). Furthermore, holding all the other variables in the model constant, the level of education significantly predicted 9-month base salaries (see Table 3). Those with doctoral degrees had the highest salaries (M = $82,184), followed by those with master's degrees (M = $72,476), those with bachelor's degrees (M = $61,432), and those with associate degrees (M = $52,205) (see Table 4). Only one participant in the sample had a high school diploma. As a follow-up, a multiple linear regression was conducted taking highest level of education, years of experience, and their interaction as predictors of salaries. The interaction was not significant, (t = 1.724, p = .085).

Finally, teaching area significantly predicted 9-month base salaries. Business (M = $76,773), Education ($M$= $76,190), and Liberal Arts (M = $76,318) earned the highest, on average, followed by Computer Science (M = $74,641), Math/Science ($M$ = $73,763), Technology ($M$ = $71,812), Health Science (M = $70,650), and Workforce Development (M = $66,922). Hospitality earned, on average, the lowest 9-month base salary (M = $63,441) (see Table 4).

Research Question 2

Research Question 2 examined if there is a significant difference in base salaries for female community college faculty members in Illinois based on union affiliation, specifically if AFT or NEA is higher. As previously demonstrated in Table 3, union affiliation significantly predicted nine-month base salaries for female community college faculty members in Illinois ($t = 5.64$, $p < .001$). Institutions affiliated with NEA had higher average salaries (M = \$76,148) than institutions affiliated with AFT (M = \$72,707) (see Table 6).

Table 6

Salary Means Based on Union Affiliation

Union Affiliation	*M*	*n*	*SD*
AFT	72,707	1360	18,470
NEA	76,148	495	24,686
Total	73,626	1855	20,365

Additionally, a follow-up *t*-test for independent samples revealed a statistically significant difference between NEA salaries and AFT salaries, ($t = -2.83$, $p = .005$). So, not only were NEA salaries higher, but the difference was statistically significant. To further explore the relationship between union affiliation and other variables, a series of multiple regressions were carried out in order to test potential interactions between union affiliation and other variables.

There was a significant interaction between union affiliation and highest level of education ($t = 2.234$, $p = .026$) such that the average salary for faculty members with

master's and doctoral degrees was higher for NEA affiliated institutions (Masters: *M* = $75,147, Doctoral: *M* = $86,937) than AFT affiliated institutions (Masters: *M* = $71,485, Doctoral: *M* = $80,595) (see Figure 2).

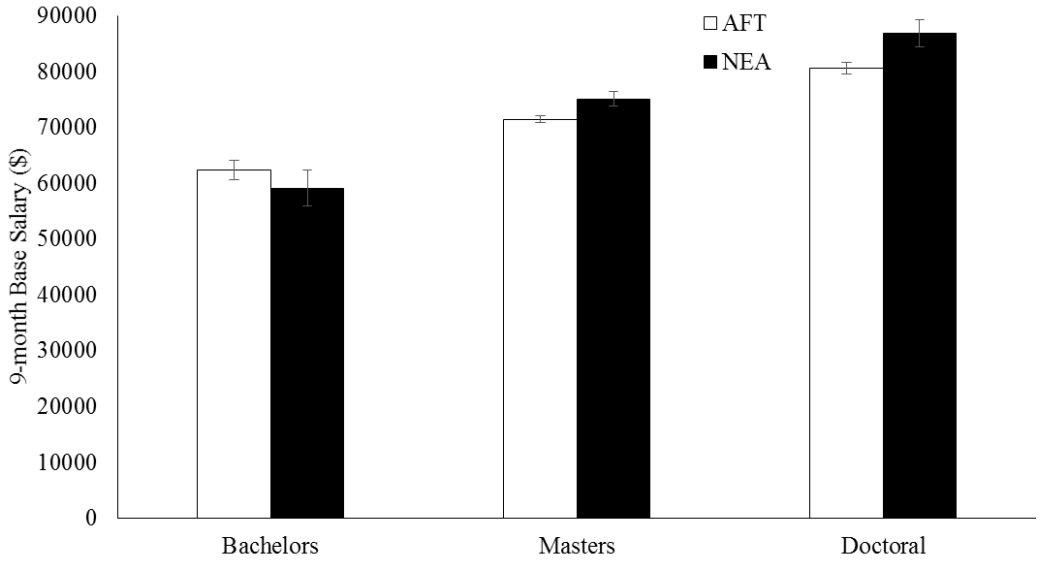

Figure 2. Comparison 9-month base salaries for AFT and NEA affiliated institutions by highest level of education. AFT = American Federation of Teachers, NEA = National Education Association.

An interaction between union affiliation and Carnegie classifications was observed, (t = 9.04, p =.000). At medium and large rural institutions, AFT union affiliations had higher salaries on average (medium: *M* = $61,245; large: *M* = $65,429) compared to NEA affiliations (medium: *M* = $52,586; large: *M* = $60,740). The reverse pattern was observed for suburban single campus institutions. NEA affiliations had higher average salaries (*M* = $87,954) compared to AFT institutions (*M* = $73,132) (see Figure 3).

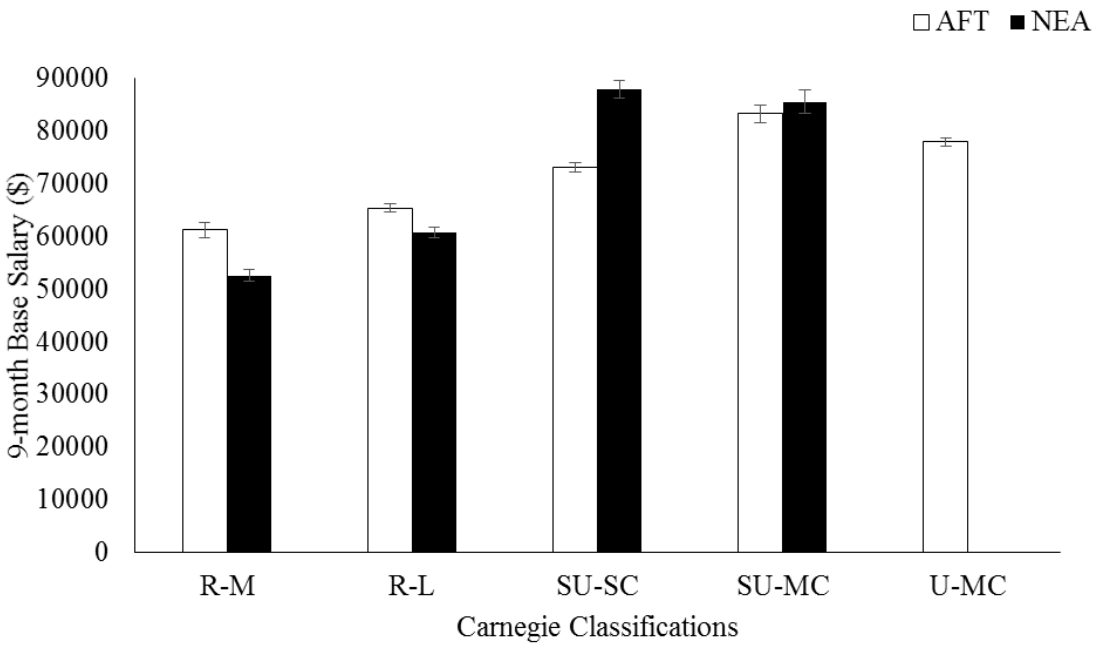

Figure 3. 9-month base salaries for AFT and NEA affiliations by Carnegie classifications. AFT = American Federation of Teachers, NEA = National Education Association, R-M = Rural Serving Medium Size, R-L = Rural Serving Large Size, SU-SC = Suburban Single Campus, SU-MC = Suburban Multi-campus, U = Urban Multi-campus.

There was also a significant interaction between union affiliation and ranking system ($t = 8.95$, $p = .000$). At institutions with a ranking system, NEA affiliations had higher average salaries, whereas at institutions without a ranking system, AFT had higher average salaries. Two other interactions were tested which did not reveal significant results. The interaction between union affiliation and years of experience was not significant ($t = 1.50$, $p = .14$), nor was the interaction between union affiliation and tenure status ($t = 1.43$, $p = .15$).

Summary

The purpose of the present study was to examine how structural and human capital factors influenced community college faculty base salaries at community colleges in Illinois and whether there was a significant difference in salaries between AFT and NEA affiliated institutions. Using data from over 1,855 individual working at 33 community colleges, the findings revealed that structural and human capital factors contributed to over 50% of the variability in 9-month base salaries at these institutions. Furthermore, each structural and human capital variable included in the multiple regression analysis uniquely predicted 9-month base salaries, while holding all other variables in the model constant. Additionally, the findings revealed a statistical difference between AFT and NEA affiliated institutions; NEA salaries were higher.

Some of these significant findings were to be expected based on how starting and subsequent salaries are determined by degrees, years of experience, and influenced by the size and location of the institution (Lester & Bers, 2010). However, this study furthers the research on how institutional characteristics influence community college faculty base salaries in Illinois. For example, the average base salary varied by the specific union affiliations, the gender of the president of the institution, as well as the existence of a ranking system. Additionally, there were significant interactions between union affiliation and Carnegie classifications, union affiliation and highest level of education, and union affiliation and the presence of a ranking system.

Chapter 5

Discussion

This study investigates issues of salary disparity among female faculty members who are employed at union-affiliated community colleges in Illinois. In doing so, this study focuses on two important and somewhat controversial issues in higher education. First, is the pay disparity which exists in higher education and is reflective of society as a whole. American women earn 82 cents for every dollar that men earn (Hegewisch & Tesfaselassie, 2019) and research has revealed a similar enduring pay gap in all segments of higher education (Barbezat, 2002; Benjamin, 2006; Lee, 2011). Women earn lower wages than men in all types of higher education institutions. Nowhere is this more consequential, however, than community colleges. Community college faculty members are paid less than faculty members employed at other types of higher education institutions such as doctoral level research institutions, four-year universities, and liberal arts colleges (NEA, 2014a). Additionally, community colleges employ more women (NCES, 2017) and pay them less than the men employed at those same institutions (Floss, 2015; Myers, 2011; NEA, 2014a). Women faculty members employed at community colleges are the lowest paid faculty in all segments of higher education (Myers, 2011).

In addition to pay disparity, the second issue this study centers on is faculty unions. Historically, unions have developed as a way to combat salary inequity (Lester & Bers, 2010). Metcalf et al. (2001) refer to unions as the "sword of justice" due to the egalitarian effect they are thought to have on salaries (p. 73). The current political and economic climate in the United States, specifically changes in state legislation regarding public sector unions, (Schmidt, 2011a) have motivated some faculty groups to consider

unionization. In fact, unionization is on the rise in higher education today (Herbert, 2016), and yet, very little research has been done regarding faculty unions and their impact on salaries (DeCew, 2003). The issue of faculty unionization also disproportionately affects community colleges. Unions are more prevalent at community colleges than other segments of higher education; 60% of all full-time community college faculty are employed at union-affiliated institutions (National Center for the Study of Collective Bargaining in Higher Education and the Professions, 2012, p. viii). This study addressed a gap in the research regarding faculty salary and faculty unions. No research to date has investigated the impact of specific union affiliation on salary as this study does. This study also sought to explain the unique factors contributing to female community college faculty salaries by developing a model to explain the variance in salaries.

Summary of the Study

This study used multiple regression to explain the independent variables which contribute to base salaries for female community college faculty members in Illinois and to determine whether there was a difference in salaries between institutions affiliated with the American Federation of Teachers (AFT) and the National Education Association (NEA). The sample consisted of 1,861 women employed as full-time faculty members in 33 community college districts in Illinois during Fiscal Year 2017. The data were gathered through Freedom of Information Act (FOIA) requests submitted to the Illinois Community College Board (ICCB) and the individual community colleges. The purpose of the research was to identify the unique contributions made by each human capital (those pertaining to the individual) and each structural (those pertaining to the institution)

variable to the base salary. The human capital variables included: (a) highest level of education, (b) tenure status, (c) teaching area, and (d) years of experience at the current institution. The structural variables included: (a) specific union affiliation, either AFT or NEA, (b) size and location of the college utilizing the Carnegie classification system, (c) gender of the college president, (d) the presence of a ranking system for faculty, and (e) number of full-time faculty members.

There were two research questions for this study:

3. How do background attributes, union affiliation, and institutional characteristics influence female community college faculty base salaries in Illinois?
4. Is there a statistically significant difference in base salaries of female community college faculty members between AFT and NEA affiliated institutions?

Major Findings

There were a number of major findings in this study. Each finding will be described and then discussed relative to previous research. The findings will be organized around the two research questions.

Research Question 1

This research question examined each variable's contribution to the base salary of female community college faculty members. Each of the nine independent variables, highest level of education, tenure status, teaching area, years of experience at the current

institution, specific union affiliation, size and location of the institution, gender of the college president, the presence of a ranking system for faculty, and number of full-time faculty members, made a unique statistically significant contribution to the dependent variable of base salary. The model, $Base\ Salary = \beta_0 + \beta_1 (Carnegie\ classifications) + \beta_2 (Union\ affiliation) + \beta_3 (Ranking\ system) + \beta_4 (President\ gender) + \beta_5 (Full\ time\ faculty\ members) + \beta_6 (Tenure) + \beta_7 (Years\ of\ experience) + \beta_8 (Level\ of\ education) + \beta_9 (Teaching\ Area) + \epsilon$ accounted for 50% of variance in the base salaries.

While this model is statistically significant and 50% of the variance is accounted for, it begs the question of what variables might account for the other 50% of the variance in salaries. There are several variables which were proposed in the original design of the study which were not available from the ICCB or the individual colleges. The demographic variables of age and race were not available due to privacy concerns. It is possible that these two variables might account for some portion of the unexplained variance. Previous findings on race and salary (Ashraf, 2011; Ashraf & Shabbir, 2006; Porter et al., 2008) have revealed a salary differential between Caucasian and minority faculty members. Ashraf's (2011) findings revealed a 7.6% salary advantage for Caucasian community college faculty members over their minority colleagues. It is possible that some racial discrimination is at play when determining an individual faculty member's starting salary which can impact salary for the course of a career.

It is also plausible that there might be some inherent bias or discrimination based on age. While this is a difficult matter to prove, it is not impossible for individuals to experience age-related discrimination in the workplace. Because the variable of age was not available for this study, there is no way to know if it might play a role in determining

salary. It is possible that younger faculty members may be given a lower starting salary based exclusively on age. This might occur for a couple of reasons; perhaps they are perceived as less savvy and likely to accept a lower starting salary or they might be started at a lower salary because they are expected to remain at the institution longer and starting them at a lower salary will reduce the time spent at higher salaries later in their careers. It is also possible that unconscious bias might be at work and older faculty are started at a lower salary because they are expected to be less productive, less engaged faculty members. Age discrimination might account for some of the unexplained variance in salary.

Another variable which might contribute to the other 50% of the variance is faculty members having some administrative responsibilities such as being a program coordinator or department chair. These additional administrative responsibilities might have created some disparity in the salaries. Previous research findings, at the university level, (Castle, 2005; Monks & Robinson, 2000) revealed a statistically significant difference for those faculty members with administrative responsibilities. Lassiter's (1983) findings revealed a similar pattern at the community college level; faculty members with administrative responsibilities were paid significantly more. Therefore, it is plausible that administrative responsibilities might contribute to the unexplained variance.

Previous adjunct faculty experience at the institution might also contribute to the unexplained variance. It is possible that faculty members who had some previous experience at the institution might have an advantage in their initial placement on the salary schedule. There may be some unconscious bias in favoring those individuals

because they may have a previous relationship with administrators and a proven record of success. While there is uncertainty regarding the factors which might account for the unexplained variance, the following variables have been found to be statistically significant in this study.

Carnegie classifications. The variable of Carnegie classification was significant at the $p < .001$ level. Holding all other variables constant, Carnegie classifications significantly predicted base salaries. Faculty members employed at suburban-single campus institutions earned the highest salaries (M = $84,067), followed by suburban-multi-campus institutions (M = $78,313) and urban-multi-campus institutions (M = $78,014). The rural institutions had the lowest average salaries with a mean of $64,234 at large rural institutions and a mean of $57,642 at the medium rural institutions. This finding is consistent with previous research and is the expected outcome. Maldonado (2006) and Mayhall et al. (2015) studied community colleges in the United States and their findings revealed that faculty members employed at suburban institutions earned the highest salaries while those employed at rural institutions earned the lowest salaries. This finding is not surprising given that rural community colleges typically have lower enrollments and less tax revenue than suburban community colleges (Miller & Tuttle, 2006). If there are less resources available, faculty salaries are likely to be lower.

Educational level. Educational level was a significant predictor of base salary, $p < .001$. As expected, as educational level increased, so did base salary. Those faculty members with a doctoral degree earned the highest salaries (M = $82,184), followed by those with master's degrees (M = $72,476), those with bachelor's degrees (M = $61,432), and those with associate degrees (M = $52,205). The one participant in the sample with a

high school diploma earned $55,036; this does not follow the expected pattern, but because it is only one individual, the sample size is not large enough to draw any credible conclusions.

The pattern of educational attainment and salary is consistent with previous findings (Perna, 2003) and expected due to the use of salary schedules in unionized institutions. In the present study, those faculty members with a doctorate degree earned an average of 12% more than colleagues with a master's degree and 25% more than colleagues with a bachelor's degree. Perna's (2003) findings revealed a 20% advantage for faculty with a doctoral degree over those with a bachelor's degree. Additionally, most community colleges in Illinois use a salary schedule (Wilson, et al., 2017) where faculty members are rewarded for educational attainment and years of service, so it is predictable that those faculty who have completed additional degrees would be paid more. The percentages of faculty members holding various degrees is also relatively consistent with previous research. In the present study, 69% of the faculty members had a master's degree, 22% had a doctorate degree, 7% had a bachelor's degree, and 2% had an associate degree or less. The Center for Community College Student Engagement (2014) reported the following statistics for community college faculty members in the United States: 66% had a master's degree, 18% had a doctorate, 8% had a bachelor's degree, 4% had an associate degree, 2% had a professional degree and 2% had some other degree.

Teaching area. A faculty member's teaching area was a significant predictor of base salary, $p < .001$. This is one of the most surprising findings of the present study. It is surprising for two reasons. First, theoretically, teaching area should not matter in a union environment. Many community colleges, especially those which are unionized, have

adopted a salary schedule which is common in public school districts (Cohen & Brawer, 2008). Salary is determined using a pre-determined spreadsheet comprised of cells containing various salary increments**.** Columns representing education (number of graduate credits and degrees) and rows representing years of experience intersect to determine an individual's salary (Winters, 2011). As faculty members advance in education and experience, they also move on the salary schedule, so their pay reflects those advancements. Equity is the fundamental principle of the salary schedule; faculty members with more experience and more education have larger salaries determined by consistent, objective and measurable means (Consortium for Policy Research in Education, 2012). It should not matter in which program or academic area a faculty member teaches; salary is determined by a combination of education and experience. Use of the salary schedule theoretically eliminates inequity based on arbitrary and capricious reasons, teaching area, or administrative bias, which is what previous research has revealed (Perna, 2003). Perna's (2003) findings, conducted on community college faculty, revealed no significant impact on faculty salaries attributed to academic discipline or teaching area.

Secondly, if teaching area mattered, the results did not correspond with previous research and the market value of disciplines. Although, limited to four-year universities, previous research (Porter et al., 2008; Strathman, 2000) has revealed salary differences by academic area with engineering and business at the top and social sciences and fine arts at the bottom (Gordon et al., 1974; Hamermesh, 1988). Additionally, the market value of certain professions would make it more likely that faculty would earn higher salaries in those professional areas such as computer science and technology (Bureau of

Labor Statistics, 2019). It is not surprising that in the present study that Business (*M* = $76,773), was the teaching area with the highest salary, but it is surprising that Liberal Arts (*M* = $76,318), and Education (*M*= $76,190), were the second and third highest paying areas, ranking higher than Computer Science (*M* = $74,641), Math/Science (*M* = $73,763), and Technology (*M* = $71,812). Health Science (*M* = $70,650), Workforce Development (*M* = $66,922) and Hospitality (*M* = $63,441) had the lowest average salaries.

Gender of the college president. The findings of this study revealed that gender of the college president was a statistically significant predictor of salary, $p < .001$. The mean salary was higher for women faculty members when the institution was headed by a woman (*M* = $79,018) as compared to those institutions headed by a man (*M* = $69,875). Twelve of the 33 community colleges in the sample had a female president. Previous research on the relationship between women in leadership positions and faculty salaries is extremely limited, so there was not an expected outcome for this variable in the present study. There has been no previous research to date to determine if a president's gender can predict or explain female faculty salaries. Based on the present study, however, it seems that if an institution has a female president, she might be more sensitive to issues of pay equity, particularly gender-based equity. While there has been no research to date which addresses the president's gender and female salaries, there has been some limited research regarding female administrators and the number of female faculty members on a campus. Bach and Perrucci's (1984) and Kulis's (1997) findings revealed that there was a statistically significant correlation between the number of female administrators at the dean level or above and the number of female faculty members. There are greater

numbers of female faculty members at institutions where there are female deans, vice-presidents, or presidents. Neither Bach and Perrucci (1984) nor Kulis (1997) correlated salaries with the presence of female administrators. However, it is a reasonable line of logic that if more female administrators mean more female faculty members, more female faculty members might mean higher salaries and less inequity when compared with their male counterparts. In fact, May, Moorhouse, and Bossard's (2010) findings revealed that very thing, "the results show that the ratio of women's to men's salary is significant and positively correlated with the overall proportion of women faculty" (p.710). More women faculty members might mean more power which often corresponds to more money.

Only one previous study addressed male vs. female presidents and the issue of gender-based salary equity. Lee and Won's (2014) findings revealed that four-year universities with a female president have greater gap in pay between male and female faculty members. This finding was contrary to their hypothesis and suggests that women who reach the top of the leadership hierarchy may adopt traditional male values and thinking patterns in order to be successful in a male-dominated organization; they cannot display the more stereotypical female gender role which might be more sensitive to issues of salary equity (Lee & Won, 2014). The findings of the present study regarding the gender of the college president call into question Lee and Won's (2014) findings; female faculty members fared better at an institution with a female president. This is an area where further study is clearly warranted.

Presence of a rank system. In this study, rank is treated as a structural variable rather than an individual variable. The presence of a ranking system at the institution was

examined, rather than the rank an individual held. Rank is a complicated issue at community colleges in Illinois. Fourteen of the 33 colleges in the study have a ranking system (Wilson, et al., 2017) utilizing titles such as professor, associate professor, assistant professor, instructor, and associate instructor. The remaining 19 colleges, without a ranking system, use a variety of other titles including "instructor" and "faculty". It is, therefore, difficult to know if an individual holds a rank of "instructor" or the generic title of instructor, which is why this study uses the presence of a rank system rather than an individual's rank.

The findings of this study revealed that the presence of a rank system was a significant predictor of female faculty salaries, $p < .001$. Those institutions that utilized a ranking system had higher average salaries (M = \$76,503) than those who did not (\$72,707). This finding was expected based on previous research conducted by Maldonado (2006), who investigated the role of rank at community colleges nationwide. The findings of Maldonado's (2006) research revealed that rank played a major role in salaries. Faculty members without rank averaged \$14,988 less than full professors (Maldonado, 2006). More recently, Knapp et al.'s (2012) findings revealed that community college faculty members with the rank of full professor earned on average \$71,728 and those without a rank, earned on average \$54,443.

In terms of understanding this phenomenon, it is possible that because institutions with a ranking system have a built-in rewards system, faculty members earn additional money above and beyond the typical cost of living raises. There is an opportunity for upward mobility and faculty members will do what is required to advance to the next rank, thereby increasing their salaries.

Tenure status and years of experience. Tenure and years of experience are variables which are related, although not multi-colinear. These two variables are related because in the Illinois community college system, tenure is granted after 3 years of service or the faculty member is released (Illinois General Assembly, 2018). Tenure status was a significant predictor of salary, $p < .001$. Faculty with tenure had higher salaries (M = \$77,407) than those without tenure (M = \$61,356). Or in other words, those with three or more years of experience (tenured) had higher salaries than those with less than three years (non-tenured). Years of experience at the present institution was also a significant predictor of 9-month base salary, $p < .001$. Moreover, a significant positive correlation between years of experience and 9-month base salaries revealed that as the number of years of experience increased, so does the salary, $r = .51$, $p < .001$.

Both findings are very much expected. Typically, faculty salaries in a union environment are based on education and years of experience, so it is predictable that faculty members with more years of experience would be paid more (Monks, 2000). The previous research studying salary and years of service in community colleges (Ashraf, 1992; Ashraf & Williams, 2008; Barbezat, 1989; Barbezat, 2002) has combined data from 2-year community colleges and 4-year universities, without making a distinction. While the findings revealed (Ashraf, 1992; Ashraf & Williams, 2008; Barbezat, 1989; Barbezat, 2002) a significant positive return on years of service, they failed to distinguish between community colleges and 4-year universities, causing a lack of clarity for community colleges. Because this study isolates the community college data, it makes a meaningful contribution to research in the field.

Number of full-time faculty. The number of full-time faculty members was a significant predictor of salary, $p < .001$. Additionally, a statistically significant correlation between number of full-time faculty members and average salary per institution revealed that as faculty size increases, so does the average salary at that institution, $r = .23$, $p < .01$. This finding is not surprising, even though there has been no previous research to date addressing this variable. It is possible that this finding might be attributed to a couple of things. First, larger institutions would typically have more full-time faculty members. Larger institutions may have a greater tax base and larger numbers of students paying tuition and therefore may be able to afford larger salaries. Secondly, it may be that more full-time faculty members would mean a stronger union which, in turn, would mean greater power and influence over the collective bargaining process and its outcomes. Salaries might be higher because the union can demand more pay, due to the strength in numbers. The adage of strength in numbers is generally considered to be true when considering the power and influence of unions (Murphy, 1990).

Research Question 2

Research Question 2 asked if there was a statistically significant difference between the salaries of the two major national education unions. The findings of this study revealed a statistically significant difference between NEA and AFT salaries with NEA salaries being larger, $p < .05$. The mean salary for NEA faculty was $76,148 while the mean for AFT faculty was $72,707. In addition, specific union affiliation was found to be a statistically significant predictor of base salary, $p < .001$. Because there is limited prior research on specific union affiliation, these results neither supported nor contradicted previous research or expectations.

Previous research findings (Ashraf, 1998; Clery & Christopher, 2010; Henson et al., 2012; Maldonado, 2006; Mayhall et al., 2015) have demonstrated a "union premium", defined as a salary advantage, for those community college faculty represented by a union (Hedrick et al., 2011). While the union premium has been given some attention in research, very little research has been conducted to determine if one specific union provides an advantage over the other. No research to date has examined which of the two national unions might provide an advantage for community college faculty. Limited research findings have demonstrated an advantage for one union or another in other educational sectors; the findings of Guthrie-Morse (1981) and Rees (1993) revealed an advantage for AFT faculty at universities while the findings of Baird and Landon (1972) and Thornton (1970) revealed an advantage for NEA faculty in the K-12 sector. Not only are these studies rather outdated, they are also only tangentially related to community college faculty and need to be viewed accordingly.

On one hand, the finding of this study which has revealed that NEA salaries are significantly higher might be viewed as a bit surprising because AFT historically has been considered the more militant (Schrag, 1998) and aggressive union (Gibson, 1998). It has embraced its origins and merged with the AFL-CIO, one of the most powerful blue-collar unions in the nation (Murphy, 1990). AFT has engaged in more strikes and job actions than NEA, both historically and more recently, which is typically seen as a measure of union strength and willingness to stand firm (Herbert & Apkarian, 2019). The expectation might be that the more aggressive union would be able to demand higher salaries for its members, which was not the case in the present study.

On the other hand, however, the findings could be explained as a function of size and power, the larger union might have more power to influence salary or greater infrastructure and support for collective bargaining. The NEA is the larger union with about 3.2 million members nationwide (NEA, 2019) while the AFT has about 1.7 million members (AFT, 2019), so it would make sense that NEA salaries are higher.

Conclusions and Implications

The present study makes a substantial contribution to the literature regarding faculty salaries and the community college labor force. As stated previously, there is a gap in the literature examining variables affecting salary for community college faculty members and the impact of specific union affiliation in community colleges. There has been almost no research conducted on the community college labor market (Gahn & Twombly, 2001) and the research regarding unions in higher education in general and community colleges specifically is extremely limited (DeCew, 2003). Research focusing on community colleges and unions are imperative in higher education. Community college faculty members are largely ignored in research (Cohen & Brawer, 2008), even though they represent roughly 30% of fulltime faculty members working in public higher education institutions (The Chronicle of Higher Education, 2019). It is common for community college faculty members to be seen as less legitimate and less valued when compared to their 4-year peers (Cohen & Brawer, 2008), but they are an important piece of the higher education workforce and should not be ignored. Similarly, research on unions in the academy should be taking place, either by the organizations themselves or scholars studying higher education.

This present study identifies a number of variables which can predict salaries for unionized female community college faculty members. These variables are both structural (based on the institution) and human capital (based on the individual) in nature. Based on the findings of this study, women will maximize their salary if they work in a suburban community college that uses a rank system, employs a large number of full-time faculty members and is led by a female president. These institutional factors can be used by prospective faculty candidates to determine the attractiveness of an employment offer. If a candidate has multiple offers, these factors might be important to consider when deciding which institution might pay the most. From a human capital perspective, women's salary will be positively impacted if they teach in the areas of business, liberal arts, or education, have a doctorate degree, and tenure. The findings also reveal that years of experience at the current institution will positively and significantly impact their base salary.

The findings of this study also reveal that women faculty members are "better off" being represented by the NEA. The average pay is $3,441 more in an NEA-affiliated institution. That is a significant difference which can have a substantial impact on salary when compounded over the course of a career. Currently, unionization is expanding in higher education (Herbert, 2016) and this evidence can be used during the union selection process. While there are some who have been very critical of unionization in the academy (DeCew, 2003), and believe that it will lead to de-professionalization and lower pay (Rhoades, 1998), it is difficult to argue with the success of unions at the community college level. Using nation-wide data from IPEDS, Clery (2019) reports nearly a $19,000 advantage for unionized community college faculty over their non-unionized peers, a

32% advantage. So, while scholars debate about what unionization might do to perceptions of status and professionalism (DeCew, 2003), unions are seemingly effective in garnering larger salaries for their members. Once a group decides to unionize, it must then decide which union it wants to represent it. While increased salaries might not be the only factor, it could be a major factor in the affiliation decision-making process. These findings of the present study, that NEA affiliated faculty earn an average of $3,441 more per year, could be important to faculty groups pursuing unionization or considering a change in affiliation. It could be argued also that the findings are particularly salient for women who express a greater desire to unionize (Dworkin & Lee, 1985) and have the most to gain from unionization (Hartmann et al., 1994) due to the pervasive, long-standing gender-based pay inequity in higher education (Benjamin, 2006).

In addition to women faculty, the findings of this study can also be important for college administrators and union leaders. Understanding the unique contributions each variable makes to the overall salary will allow leaders and policy makers to review their salary determination process to maintain their competitiveness in the marketplace and to reduce potential bias. In a union environment, salaries are theoretically determined in an unbiased, equitable manner for all employees regardless of gender, race, or teaching area. The findings of this study point to some unexplained variance in salaries which could possibly be related to bias. There may be inherent bias in the process used to determine starting salaries which may have long term effects on an individual's salary. This critical piece of information would be important for administrators to review at their institutions.

The systemic problem of salary inequity and bias is still a major issue in all segments of higher education that largely has been ignored by administrators and

policymakers. Previous research findings (Benjamin, 2006; Myers, 2011; Umbach, 2009) have revealed inequity based on gender, race, and academic discipline. Researchers have known these issues have persisted for a long time, yet very little progress has been made to correct these inequities. It is troublesome that these inequities still exist, particularly in a union environment. Unions are designed to represent all members equally, but it appears as if that is not happening based on the findings of this study. When unionized faculty members are earning higher salaries in some teaching areas, that can impact morale, collegiality among peers, and job satisfaction negatively (Akroyd et al., 2011). Placing a higher value on some teaching areas over others flies in the face of what unions stand for. This practice seems unfair and likely to cause contention among union members.

Future Research

This study has contributed to the current research in the field of faculty salary studies, but there are still a number of areas worth exploring. First, this research could be replicated with a national dataset to look at a broader perspective of faculty salaries across the country, rather than being limited to one state. It would be interesting to note if the findings remained consistent across a larger sample. It becomes complicated, however, when some states allow collective bargaining for public employees while others do not (Schmidt, 2011a). Secondly, the differences in teaching area/academic discipline are very interesting, especially because they are contrary to the expected outcome in a union environment. It would be important to understand any bias or unintended variance related to the teaching area. Further research might explore if this variance is related to the market value of certain fields. Are faculty members being hired at higher salaries in

teaching areas where they could demand earn more pay in the private sector? This might be a factor influencing starting salaries for faculty members in some areas. If this practice is happening, it would be worth understanding. Union leaders and members would have a right to be concerned about this practice as it would provide an unfair advantage for some union members over others.

Third, the finding that female faculty members have higher salaries at an institution with a female president is intriguing. It would be particularly noteworthy to determine if this finding is repeatable, especially in a non-union environment. Is this finding unique to the state of Illinois? Is it unique to union institutions or does it translate to non-union community colleges as well?

Fourth, this study examined only two unions representing community college faculty, the NEA and the AFT. These two unions are currently the largest two educational unions, but others are growing in popularity. According to Herbert, (2106) Service Employees International Union (SEIU) is a growing force on college campuses, representing faculty members. It would be meaningful to expand the research to include all those unions representing faculty members nationwide.

Lastly, it would be helpful to examine the other variables which might contribute to the variance in salary which is unaccounted for in the present model. Variables such as race, age and previous adjunct experience are potential explanations, but cannot be verified without additional research being conducted. Because these variables were not available from ICCB and not included as independent variables, it would be very interesting to replicate this study while including those variables in the model. It is possible that those variables could account for a portion of the unexplained variance.

This study has contributed new findings and evidence to the body of literature, but there are still a number of questions left to explore regarding community college faculty salaries and the impact of unions on those salaries. Salary equity and union affiliation will continue to be issues for the foreseeable future in higher education and will provide fertile ground for future research.

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Appendix A

Table 7

Full-time Faculty by College

College District	Total Faculty	Females	Affiliation
Black Hawk	112	62	AFT
Chicago	582	333	AFT
Danville	62	34	NEA
DuPage	285	137	NEA
Elgin	133	68	AFT
Harper	208	120	AFT
Heartland	85	46	AFT
Highland	47	22	AFT
Illinois Central	177	95	Local
Illinois Eastern	93	41	NEA
Illinois Valley	76	41	AFT
Joliet	216	109	AFT
Kankakee	69	47	AFT
Kaskaskia	63	32	AFT
Kishwaukee	70	35	AFT
Lake County	202	111	AFT
Lake Land	101	55	AFT
Lewis and Clark	105	56	NEA
Lincoln Land	122	63	AFT
Logan	61	32	NEA
McHenry	100	54	NEA
Moraine Valley	188	109	AFT
Morton	54	27	AFT

Oakton	149	89	NEA
Parkland	170	87	Local
Prairie State	76	43	AFT
Rend Lake	61	37	AFT
Richland	65	34	AFT
Rock Valley	159	87	AFT
Sandburg	45	28	NEA
Sauk Valley	46	24	NEA
Shawnee	34	21	NEA
South Suburban	81	42	AFT
Southeastern	36	17	NEA
Southwestern	150	79	AFT
Spoon River	33	18	NEA
Triton	100	55	AFT
Waubonsee	105	61	AFT
Wood	45	24	AFT
Total	4,566	2,475	

(Wilson, et al., 2017)