An Integrative Research Review:

Factors Contributing to the Gender Pay Gap Among Faculty in Higher Education

Abstract

Since the beginning of the 20th century with the women's movement, continuing on into the civil rights movement, there has been the issue of whether there is equal pay for equal work among employees. Pay discrimination may be by gender, race/ethnicity, and/or marital status. Emerging from the aforementioned movements were the Equal Pay legislations and Affirmative Action policies that have been enacted to measure the extent of the, inequalities within the labor market (Toukoushian, Bellas, & Moore, 2007). President Kennedy signed the Equal Pay Act in 1963, and at that time, women working full time earned 59 cents on the dollar compared to men working full time (U.S. Department of Labor & Castro, 1998). This situation had improved by 2007 to 77 cents on the dollar for full time women. (U.S. Census Current Population Survey, 2008). Additionally, there have been numerous studies documented that indicate that women are often paid less than men. The Carnegie Commission conducted the first national study in 1968, and as early as the 1970s, other research had been conducted regarding the salary differentials between male and female. Many of these studies that were conducted were because of changes in higher education from a legal perspective. Since then, many universities have conducted equity pay studies (Barbezat & Hughes, 2005). This paper focuses on the pay gap that exists between gender, which is the salary disparity between male and female, and it concentrates on the factors that contribute to it.

Introduction and Problem Formation

Within this analysis, research by Toutkoushian and Conley (2005) concluded that there is a difference in pay among female versus male faculty members despite equal experience, education, and research efforts. Other studies that have been conducted using national databases have shared the same conclusion as Toutkoushian and Conley, also reporting a pay gap among academic faculty (Barbezat, 1987, 1989; Bayer & Astin, 1975; Dey & Hill 2007; Euben, 2001; Government Accounting Office 2003; Toutkoushian & Conley, 2005). According to the Governmental Accounting Office (2003), the gap is still in existence after controlling for numerous variables such as education level, number of children, demographics, occupation, and work patterns. By 1988, 25 years after the Equal Pay Act, Civil Rights Act, and other legislation, women were still earning approximately 35% less than males. Roughly half of this gender gap is because of "differences in work preferences, productivity characteristics, and labor force attachment" (Fuller & Schoenberger, 1991). Those factors would be considered the "explained" portion of the wage gap with the remaining percentage being the "unexplained" portion of the wage gap. Between 1969-1993, the unexplained wage gap ranged from 1% to 16.3%, with most between 6%-8% (Barbezat, 202, p. 20). Toutkoushian and Conley (2005) reported that the unexplained wage gap between male and female faculty started to decline during the 1990s from 6-10% in 1993 to 4-6% in 1999.

By 2000, this total differential seemed to have narrowed to 20% with questions arising as to if this is accounted for by gender discrimination or because of other factors such as

differences in “discipline, seniority, rank, and productivity” (Carlin and Rooney, 2000). Within institutional types, the total salary gap is 8.3% at liberal arts colleges, 26% at most 4-year colleges, 29% at institutions granting doctoral degrees, and 22% at institutions where research is the main focus (Barbezat & Hughes, 2005). While much of the pay differential can be explained by factors such as “seniority, skills, experience, education, turnover, union membership and size of the firm,….the unexplained residual (is attributed) to discrimination in the labor force” (Carlson and McEnrue, 1985).

The following table shows the most recent pay differential:

Average Faculty Salaries for Men and Women by Rank, 2009-10 Average Salaries for Full-Time Faculty Members, 2009-10

Legend for Chart:

A - Men
B - Women
C - Women's salary as a percentage of men's

	A	B	C
Professor	$113,556	$99,780	87.9%
Associate ***professor***	$78,767	$73,455	93.3%
Assistant ***professor***	$66,718	$62,070	93.0%
Instructor	$47,661	$47,548	99.8%
Lecturer	$55,965	$50,813	90.8%

What professors earn. (2010). *Chronicle of Higher Education*, *(56)*31, 1-7.

Research Problem

A threat to validity when studies have been done on differences in academic salaries is that little attention has been paid to the interactive effects of personal characteristics or even social categories. Researchers will generally consent to agree on the fact that there is a wage gap between male and female workers, but there are fewer consensuses on the factors that are responsible for this wage gap (Toutkoushian, Bellas, & Moore, 2007). Therefore, the research problem in this integrative review is to attempt to examine the factors responsible for the total wage gap that is known to exist between male and female faculty.

Data Collection

This integrative review paper used articles by Jackson (1980) and Cooper (1982) to synthesize 20 separate findings into a whole that is both coherent and logical. This examination was conducted by using both the Clemson University and Lander University Library databases where a literature search was conducted using keywords such as "Salary/Gender/Higher Education/University". From the 20 scholarly publications that were selected, 20 were analyzed and 18 were used.

Data Evaluation

Numerous studies have been done and analyzed in this paper, which prove that women in academia earn less than men. These studies were conducted, and a control factor was implemented for education, experience, academic discipline, productivity, and institution type (Barbezat, 2002; Barbezat, 1991; Bellas, 1993, 1994, 1997; Perna, 2001; Toutkoushian, 1998a, b; Toutkoushian and Conley, 2005). There were some problems associated with methodology when analyzing the effect of labor market discipline on the studies. Some of these problems were that few studies exist that examine the impact of the supply of PhDs on a specific discipline. Next limited samples exist, and thirdly, the methods used in the analysis are limited. To overcome these problems, Umbach, (2007) used two national datasets and a hierarchical linear model to examine the effects of discipline and an individual's characteristics as it relates to academic salaries (Umbach, 2007).

The method used to evaluate the disparity in pay equity by gender for Toutkoushian, Bellas, & Moore (2007) was regression analysis. The variables in this case were X, which represented work-related factors relevant to human capital theory. These were experience, educational attainment, and field, all of which generally have an effect on faculty salaries. Y (sub i) would be the natural log of salary, and the study controlled for "each individual's highest degree, years of experience, academic discipline, and research publications" (Toutkoushian, Bellas, & Moore, 2007). Threats to validity or limitations in this study were that they needed a certain sample size, and as that size decreased, the errors became larger (Toutkoushian, Bella, & Moore, 2007).

Another study using regression analysis to determine pay disparity between genders was Becker and Toutkoushian, (2003). A serious threat to validity in this study was that while rank was included as the independent variable in the study, several characteristic differences between men and women were excluded that correlate to rank and gender. These were degree, seniority, publications, and experience. Because of these characteristics, men could have a higher probability of becoming a full professor than women (Becker & Toutkoushian, 2003).

Limitations or threats to validity in regression analysis in general are that the predictors used may have discrimination built into them. This would occur when analyzing the time frame that a faculty member maintains at a certain level because it may reflect merit, as well as gender bias. Another bias is the fact that regression analysis assumes normal distributions among groups, when in fact distributions of wages are positively skewed (Travis, Gross, & Johnson, 2009).

In addition to using regression analysis in measuring gender wage gap data, most data in gender studies typically comes from U.S. nation-wide data basis using "Ladd-Lipset surveys, Carnegie Foundation surveys, and National Science Foundation data" (Sosin, Rivers, & West, 1998). However, as in the aforementioned studies, many still use institutional data (Sosin, Rivers, & West, 1998). In another study, multivariate regression was used to "identify faculty who were significantly below their projected salaries after controlling for appropriate variables that would be reasonably expected to impact salaries" (Carlin & Rooney, 2000). This same study also identified a discrimination suit filed against another university showing across the board increases in salary had been discriminatory. Two factors that had not been controlled for in the regression model used at the time were productivity and appointments to administrative positions (Carlin & Rooney, 2000).

Analysis and Interpretation

The theory that defines this paper is Human Capital Theory. This theory is the most prevalent within western education and most used in setting government policies since the early 1960's. The theory originated with Adam Smith, who formed the basis of the theory. It progressed over the next two centuries to become the modern theory of late. Basically, the idea behind human capital theory is that "all human behavior is based on the economic self-interest of individuals operating within freely competitive markets" (Fitzsimons, 1999). Becker and Toutkoushian (2003), state that when using regression models, the specifications are partially based on human capital theory. According to them, this theory says that "a worker's level of compensation will be influenced by those attributes that contribute to his or her productivity" (Becker and Toutkoushian, 2003). Additionally, "Human capital factors are often referred to as supply-side variables that reflect personal investment in training, competence, and qualifications, such as education degree, licensing, experience, or other specialized competence" (Travis, Gross, & Johnson, 2009). Some of the measures of human capital theory in academia are the amount of education received, experience in academia, and published research. These measures will also be used in this paper to help explain the gender "wage gap" (Becker & Toutkoushian, 2003) and to help identify the factors that contribute to the pay gap.

A portion of the gender pay gap occurs because of job segregation. Minimum effort is made to "recruit and retain talented women in academic majors associated with high-paying job sectors such as science and engineering" (Travis, Gross, & Johnson, 2009). In some instances this segregation is absolute discrimination or reflects a culture that is not responsive to hiring women. This discrimination is a result of "psychological processes" that occur because of "shifting standards in judgments of qualifications and competence that effectively discounts qualifications of women and other minority members" (Travis, Gross, & Johnson 2009).

This idea of discrimination is a factor that contributes to the wage disparity because some universities may offer a "family wage" to married men. This practice is no longer legal, but may still be prevalent in practice. Offering higher salaries to married men because of the need to support their families explains some of the wage gap among married faculty; however, there still exists a gap between single men and single women (Toutkoushian, Bellas, & Moore, 2007). A reason for the salary differential may be because of past attitudes of those doing the hiring. Men who viewed women more favorably would hire more of them and pay higher salaries. In academia, women tend to be valued more for their teaching skills, rather than their research

skills. Consequently, there is a larger salary gap, and fewer females are hired in research institutions (Sosin, Rives, & West, 1998).

Other researchers say that the lower pay for female faculty is because of the fact that women make certain choices that result in lower pay (Antecol & Bedard, 2004). Women generally spend more time caring for the children and the home than men. This factor actually allows men to concentrate more on their career, while women are "juggling" a multitude of responsibilities (Bianchi, Milkie, Sayer, & Robinson, 2002). Another choice that women make that contributes to the wage gap in gender is associated with the "family wage" concept and is the fact that women are less geographically mobile if they are married and have children (Hagedorn, 1996). This factor could account for the fact that women often accept part-time positions to remain geographically close to their family and spend time with them. Therefore, according to Cropsey, et al (2008), women are more likely to be hired at a lower starting salary than males in academia. One reason for this is that they are less likely to negotiate in an effective way. Another reason is that they may have left a previous university for personal reasons and accept a lower starting salary at a new institution because of the benefits that they provide. These benefits may allow more family time. Therefore personal reasons were cited in the top three reasons for women leaving an academic position (Cropsey, K., Masho, S., Shiang, P.H., Sikka, V., Kornstein, S., & Hampton, C., 2008).

Another factor contributing to the gender wage gap is salary compression. This situation occurs when new faculty are hired at starting salaries that are higher than existing faculty, and this definitely causes dissatisfaction within the faculty involved at the institution. Disciplines such as business, engineering, and medicine typically have this occurrence because of the need to pay the market rate of pay in these areas. As a result, highly qualified faculty may leave academia and take external employment (Faculty Compensation: (2003). Results of salary compression are low morale among faculty reflected in poor commitment to the organization and low research output, ultimately contributing to the high turnover rates (Barbezat, 2004).

This salary compression factor can also be a basis for studies conducted that evaluate whether or not there is gender bias in academic rank which brings the promotion topic into consideration. It is noted here that a promotion to full professor from associate professor brings a significant pay increase (Becker & Toutkoushian, 2003). By including rank in the regression model used to measure the pay disparity, it "will consequently introduce a downward bias in the estimated gender effect and has therefore been omitted in a number of studies" (McNabb & Wass, 1997, p. 334). Another study by Barbezat (1991) allowed for rank to be a control variable because of the possibility of discrimination in promotion of women. Becker and Toutkoushian (2003) observe that women are less likely than male peers to reach higher academic ranks. This conclusion was confirmed by Ransom and Megdal (1993) who used national sampling to determine that female faculty was not as likely as male faculty to reach the higher academic ranks of full or associate professor. In their analysis, the control variables were level of education, amount of experience, level of seniority, and number of publications (Ransom & Megdal, 1993).

Free, Brown, and Clifford, (2007) indicate that college major does play a role in the gender wage gap. They based their conclusion on a study done by Gerhart (1990) where 2,895 employees with bachelors' degrees were studied, and it revealed that 43% of the disparity in beginning salaries between male and female was because of college major. Another study

conducted by Gill and Leigh (2000) revealed that women began moving from education to fields that paid higher salaries, such as engineering and business. It was between the years 1985 and 1990 that the gender wage gap declined (Free, Brown, & Clifford, 2007), and this movement between academic fields could be the explanation for that decline. Three reasons for differences in salary by major are that some majors prepare students to be more valuable in terms of human capital offered; some students may be attracted to a particular major that pays a higher wage; and thirdly there may be labor market discrimination reflected in differences in earnings. This fact may occur because of supply and demand factors. Some jobs, such as engineering, have a limited supply of labor, resulting in high wages, and many times females have a difficult time breaking into these areas (Brown & Corcoran, 1997). Consequently, according to Roksa (2005), females will tend to stay in professions which are "female dominated", such as education, health, and social services. Another study by Daymont and Andrisani (1984) show that men generally chose to major in areas that paid higher salaries, and women majored in areas that had lower salaries. Business was considered one of those high paying fields, and Fuller and Schoenberger (1991) conducted a study with results revealing that women who majored in business generally leaned more toward accounting, which is a high salary area. In their study 35 percent of the women surveyed majored in accounting with 21 percent of males. This conclusion is consistent with the American Institute of Certified Public Accountants in a 1990 study they conducted. As of that time frame 53 percent of accounting graduates were women (AICPA, 1990). In general though, Barbezat and Hughes (2005) confirm the fact that men are drawn to higher paying academic fields such as business, computer science, economics engineering, law and medicine. Their study involved single equation regression analysis with salary being the dependent variable and measures of productivity being the independent variable (Barbezat & Hughes, 2005).

In addition to the above factors, a final explanation for the disparity in wages is the application of the concept of comparable worth. This concept works on the premise that women are "socially devalued"; therefore, the labor they perform is also. Consequently, wages set for the tasks that women perform are lower than those for the work men perform (Bellas, 1994). Grider and Shurden (1985) explain comparable worth as "jobs traditionally held primarily by women receive lower pay than jobs traditionally held primarily by men, even though both types of jobs may contribute the same amount in the organization's worth or profits." Most jobs that are viewed as equal require the same amount of "skill, effort, responsibility and have similar working conditions" (Cascio & Awad, 1981). An example Grider and Shurden (1985) gave was that within a company, a secretary may be paid 30 percent less than a groundskeeper, despite the fact that a secretary may contribute as much if not more to the successfulness of the company as the groundskeeper. Again, the secretary is traditionally a female, while the groundskeeper would traditionally be a male (Grider & Shurden, 1985). However, some fields would be considered to be female dominated, and regardless of whether a man or woman is employed in them, the wages would be low. An example would be that women are more likely to be employed in the area of arts and humanities (Barbezat, 1991; Bellas, 1993, 1997). The theory of supply and demand relates in this situation because individuals who are qualified to teach in a particular area represent the supply, and those wishing to hire represent the demand; therefore, fields that pay lower salaries often have a greater supply of females willing to take those salaries (Barbezat, 1991).

Suggestions for Minimizing the Gender Wage Gap

A possible solution for minimizing the gender wage gap is to allow more unionization in academia. Sosin, Rivers, and West, (1998) conducted a study in 1994 which used data from over 1,100 four year academic institutions to determine if unions indeed made a difference in controlling the wage gap. Their conclusion was that "yes", unions do make a difference; however, the extent is minimal. Unions are effective in improving the salary differences more at the lower assistant professor level with the difference of improvement being a mere $734 per year. The most significant difference that unions make in this area is to improve the impact that women in senior faculty ranks make on salary differentials at the lower, assistant professor level through the collective bargaining process (Sosin, Rivers, & West, 1998).

Another suggestion is for women to realize that employers tend to base starting salaries on characteristics found in their resume. Characteristics such as college major, internships or academic achievements have a major impact on starting salaries. However, once a woman has obtained the job, other characteristics have more of an influence. These characteristics are job performance and experience (Fuller & Schoenberger, 1991). According to Toutkoushian, (2003), it is less costly to adjust salaries in an "across-the-board" method than it is to implement individual salary increases'

A final suggestion for improving faculty salaries is that the academic program seeks accreditation. Generally, the goal of an accrediting organization is to improve quality in the program; however, most contend that the goal is really to increase salaries of faculty. A study by Hedrick, Hensen, Krieg, and Wassell (2010) found that increasing salaries was indeed the motive of schools that became accredited. Additionally, faculty at accredited schools is more likely to publish more frequently and have a more reasonable teaching load (Hedrick, Hensen, Krieg, & Wassell, 2010).

Suggestions for future research

A future study that could be done is to examine the effect on race in gender differences. Some research has been conducted in this area with Barbezat (1989, 1991) finding evidence of a "positive pay difference for being Black relative to being White" (Toutkoushian, Bellas, & Moore, 2007). This may be explained by the fact that Black women have some advantage in the labor market by having childcare help from extended families. Additionally, Toutkoushian, Bellas, & Moore (2007) indicate that they are not aware of research and studies conducted to determine if marriage affects White and minority faculty in different ways.

Another research suggestion is to further explore the gender differences in nonfaculty salaries. A study conducted by Toutkoushian in 2003 indicated that differences in experience and market factors explained about 80 percent of the gender difference in nonfaculty salaries; however, there was still an unexplained wage gap of approximately 2 percent. Again, regression models are often used to provide estimates of this wage gap, and different variables are generally controlled (Barbezat, 1991).

Conclusion

In conclusion, since World War II, women have consistently entered the work force in large numbers; however many studies have found a pay differential that favors men. This

earnings gap has been reduced within the 1970's and 1980's, and many acts have been enacted to try to reduce it even further; however, the differential still remains. The theory used to explain this gap has been human capital theory. This theory is guided by the concept that there are investments made everyday within an individual which increase their productivity and earnings potential. Some of these "investments include formal education, on the job training, job searches, and geographic migration" (Dutt, 1997). Within research, many factors have been found to contribute to the wage gap. These factors include job segregation, discrimination, and salary compression, choices made by women, academic rank, college major, and comparable worth. Suggestions also were made within this paper to improve the labor wage gap. These suggestions were to allow more unionization with academia, have women become more conscientious of the characteristics in their resumes that contribute to the gap, and for the school to become accredited. Additionally, further research ideas were given such as to examine the effect of race or gender differences and to explore the pay differential and causes in nonfaculty salaries. As with any issue, awareness is the key to improvement of any situation, and only time will tell if what appears to be a grievous injustice will eventually be made "right".

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