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Gender and Faculty Rank: An Analysis Of Doctoral-Granting Universities By United States Regions

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Abstract

Over the last 50 years there has been a great deal of research focused on gender inequity in higher education in the U.S. These studies have been limited to individual or regional universities, or discussions on the possible causes of gender inequity in the area of higher education. However, this study had a much broader scope since it analyzed data from universities across the United States. Gender inequity, at doctoral-granting universities in the United States that participate in the Integrated Postsecondary Educational Database System (IPEDS; USDE, n.d.) annual survey, were examined in this study. While gender was the main variable under consideration, ethnicity in relation to gender and academic status was also evaluated. Data were extracted from the IPEDS database and were analyzed using a MANOVA. While no statistical difference was found between or among the public universities in the eight U. S. regions, a statistical difference was found between or among the private not-for-profit universities in the eight U.S. regions.

Fifty years after the passage of the Equal Pay Act, the disparity in wages between men and women had decreased at a very slow rate and continued to do so. Three federal laws were passed to address this issue. These were the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, as amended, and the Pregnancy Discrimination Act which is an amendment to Title VII. According to Bruner,

> The wage gap is a statistical indicator often used as an index of the status of women's earnings relative to men's. The wage gap is expressed as a percentage (e.g., in 2009, women earned 77% as much as men) and is calculated by dividing the median annual earnings for women by median annual earnings for men. Since 1963, when the Equal Pay Act was signed, the closing of the wage gap between men and women has been at a rate

of about half a penny a year. (2007, column 2)

The Equal Pay Act of 1963 provides for equal pay, for men and women, for equal work and protection from retaliation. The Equal Pay Act of 1963 is defined as follows:

> This law makes it illegal to pay different wages to men and women if they perform equal work in the same workplace. The law also makes it illegal to retaliate against a person because the person complained about discrimination, filed a charge of discrimination, or participated in an employment discrimination investigation or lawsuit. (EEOC, n.d., "Laws Enforced" section)

Title VII of the Civil Rights Act of 1964, as amended, makes it illegal to discriminate against anyone based on race, color, religion, national origin, or sex and provides protection from retaliation. The Title VII of the Civil Rights Act of 1964, as amended, is defined as follows:

> This law makes it illegal to discriminate against someone on the basis of race, color, religion, national origin, or sex. The law also makes it illegal to retaliate against a person because the person complained about discrimination, filed a charge of discrimination, or participated in an employment discrimination investigation or lawsuit. (EEOC, n.d., "Laws Enforced" section)

The Pregnancy Discrimination Act prohibits discriminating against a female due to pregnancy or pregnancy related conditions. The Pregnancy Discrimination Act is defined as follows:

> This law amended Title VII to make it illegal to discriminate against a woman because of pregnancy, childbirth, or a medical condition related to pregnancy or childbirth. The law also makes it illegal to retaliate against a person because the person complained about discrimination, filed a charge of discrimination, or participated in an employment discrimination investigation or lawsuit. (EEOC, n.d., "Laws Enforced" section)

The research verified the number of female faculty receiving the rank of tenure and moving through the academic status of assistant professor, associate professor, and full professor continued to lag behind the number of men faculty members.

Statement of the Problem

Over the last 50 years there has been a great deal of research focused on gender inequity in higher education in the U.S. These studies have been limited to individual or regional universities, or discussions on the possible causes of gender inequity in the area of higher education. This study examined gender inequity at doctoral-granting universities in the United States that participated in the Integrated Postsecondary Educational Database annual survey (USDE, n.d.). While gender was the main variable under consideration in this study, the ethnicities of African- American, Hispanic, and White, in relation to gender, were also examined. Academic tenured status of assistant professor, associate professor, and professor were also

examined. Each of these variables was applied to doctoral-granting universities in each of the eight regions designated in the Integrated Postsecondary Educational Data System (IPEDS) database (USDE, n.d.). Data were gathered on public, private not-for-profit, and private for-profit, institutions of higher education during the fall 2011 term. This study had a much broader scope than earlier studies since it examined data from universities across the United States.

Purpose of the Study

The purpose of this study was to examine data from the Integrated Postsecondary Education Database System, IPEDS (USDE, n.d.), for the fall 2011 term dealing with gender inequity in doctoral-granting universities in the U.S. Gender inequity was determined based on the percentage of individuals with the academic status of assistant professor, associate professor, or full professor in doctoral-granting universities in the U.S. The ethnicities of African American, Hispanic, and White were included in the study to determine if gender inequity was further influenced by ethnicity.

Significance of the Study

This study examined data extracted from a national database, thus providing the opportunity to study a population rather than merely a sample of the population. Previous research had been focused on one university or to one state or region of a state. This study provided an examination of the topic of gender inequity on a national level. Regional differences in academic rank, based on ethnicity, were also examined. This study benefits university administrators as they examine their current gender equity goals. Academic deans and department heads will also benefit from this study as they examine their hiring, promotion, and retention policies regarding gender equity. Faculty members will find this study of value because it provides information for discussion with university administrators on gender equity. This study will benefit legislators as they study legislation to improve and assure gender equity in U.S. universities. Finally, the public may be interested to learn which areas of the U.S. support gender equity in higher education faculty.

Research Questions

The following research questions provided focus and direction for this study:

1. What were the percentages of female professors by rank in public, private for-profit and private not-for-profit doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011?
2. Do differences exist in the percentage of female professors by rank in public doctoral-granting universities between or among the eight IPEDS regions of the U.S. in 2011?
3. Do differences exist in the percentage of female professors by rank in private for-profit doctoral- granting universities between or among the eight IPEDS regions of the U.S. in 2011?

4. Do differences exist in the percentage of female professors by rank in private not-for-profit doctoral-granting universities between or among the eight IPEDS regions of the U.S. in 2011?

Hypotheses

This study examined the following null and alternate research hypotheses. A confidence level of $p < 0.05$ was used for all statistical analyses. The following three hypotheses guided the course of this study:

1. Ho_1: No differences exist in the percentage of female professors by rank between or among public doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011.
2. Ha_1: Differences exist in the percentage of female professors by rank between or among public doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011.
3. Ho_2: No differences exist in the percentage of female professors by rank between or among private for-profit doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011.
4. Ha_2: Differences exist in the percentage of female professors by rank between or among private for-profit doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011.
5. Ho_3: No differences exist in the percentage of female professors by rank between or among private not-for-profit doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011.
6. Ha_3: Differences exist in the percentage of female professors by rank between or among private not-for-profit doctoral-granting universities in the eight IPEDS regions of the U.S. in 2011.

Method of Procedure

The data were extracted from the national educational database, Integrated Postsecondary Educational Data System (IPEDS) and downloaded to an Excel spreadsheet. Because the study included more than two groups and included several variables a MANOVA (Statistics Solutions, 2012) was selected as the most appropriate method to analyze the data. In order to utilize a MANOVA the dependent variables should either be related or there should be a rational reason for grouping the variables. "MANOVA compares the groups and tells you whether the mean differences between the groups on the combination of variables are likely to have occurred by chance" (Pallant, 2010, p. 293). The groups were academic status of assistant professor, associate professor, and professor. The variables were the eight U.S. regions identified by the IPEDS database, university sector public, private not-for-profit, and private for-profit, doctoral-granting universities, tenured rank, tenured, and gender. For research question one, the variable was the percentage of female assistant professors, female associate professors, and female professors in public and private not for profit universities in the eight regions in the U.S. For research question two, the variable was the eight regions in the U.S. Female assistant professors, female

associate professors, and female professors' percentages were extracted for public doctoral-granting universities in each of the eight regions. For research question three, the variable was the eight regions in the U.S. Female assistant professors, female associate professors, and female professors' percentages were extracted for private not-for-profit doctoral-granting universities in each of the eight regions. At this point research question four was eliminated from the study. For research question four, the variable was the eight regions in the U.S. Female assistant professors, female associate professors, and female professors' percentages were extracted for private for-profit doctoral-granting universities in each of the eight regions. When these variables were entered into the IPEDS database, no data was returned.

Limitations

The following limitations were used for the study:

1. This study was limited to the universities that were required, by law to provide information to the federal government.
2. The study was limited by the fact that the universities were self-reporting.
3. This study was limited by the most recent data available, which was from 2011.
4. The definition of academic status varied between the reporting institutions and the agency collecting the data.

Delimitations

The following delimitation was used for the study:

1. This study was delimited to examining doctoral-granting universities in the United States.
2. This study was delimited to the data collected by the IPEDS survey that appeared in the online database.
3. This study was delimited to the eight regions as defined in the IPEDS database.

Hypothesis 1

The findings from this study indicated that across the eight regions at public doctoral granting universities that six of the eight regions are near parity in female to male faculty members at the assistant professor rank. However, at the associate professor rank the gap widens between female and male faculty to almost 20%, with female faculty being in the smaller group. In their study, Roach and El-Khawas' recommendation was, "to focus research support to the rank of associate professors at the departmental level" (2010, p. 17). Some progress has been seen however in the percentage of female full professors. West and Curtis stated, "in 1974-75, women comprised 10% of full professors in all colleges and universities in the U.S. In 2005-06, that percentage had increased to 24%" (2006, p. 16). At doctoral-granting universities however women "comprise 19% of the full professors" (2006, p. 16). The results of this study indicated that at doctoral-granting universities in the U.S. regions some progress had been made for female

faculty. Also in this study, the New England region consistently exhibited the highest percentages with the Rocky Mountain region had the lowest percentages. The reasons for this disparity are not clear. Possible explanations may be in the lack of uniformity in defining the terms of assistant, associate, and full professor and the lack of consensus on how tenure is earned or awarded. For example, in some universities tenure is earned through research, service, and teaching. Other universities may use a quota system where a specific number is set for each level of the tenure track. In this system, the only way to advance in the tenure track is through a tenured faculty member leaving the university, being promoted to a higher level on the tenure track, or someone dies. Until there is uniformity in definition of terms and uniformity in assigning tenure, all research on this topic will at best be flawed. For example, Hagedorn found, "salary interactions by institutional type were found to be statistically nonsignificant." (1998, p. 153). However, the mean salary for male faculty was approximately $9,000.00 more than female faculty. Taking into consideration the Human Capital factor the difference dropped to $2,500.00 more for the male faculty. The Compensation method showed a difference of almost $8,000.00. "The research indicated that gender-based wage differentials existed at all institutional types regardless of the method of estimation. If however the male-female wage gap was calculated via the compensation method there were significant differences by institutional type" (Hagedorn, 1998, p. 155).

This study was also unique in examining gender equity in private not-for profit doctoral granting universities in the eight IPEDS regions in the U.S. The studies reviewed in the literature mentioned *all types of universities* but did not specify if this included private universities or not.

Hypothesis 2

The findings for the second hypothesis indicated that no statistically significant difference existed among the eight regions in the U.S. based on academic rank of assistant professor, associate professor, or professor in public doctoral-granting universities. A difference that appeared was the difference between the New England region and the Rocky Mountain region. For each academic rank the New England region had the highest percentage of female faculty, while the Rocky Mountain region consistently had the lowest percentage of female faculty. There was no statistically significant difference in the percentage of female Assistant Professor, Associate Professor, and Professor in the public doctoral-granting universities in the eight regions indicated by the IPEDS database. This study failed to reject the null hypothesis of no statistically significant difference between or among the assistant professors, associate professor, and professor in the eight regions in the U.S.

Hypothesis 3

The results of the third hypothesis found a statistically significant difference among the regions in the percentage of female faculty by regions in private not-for-profit universities. The other tests however did not return a statistically significant difference. A Tukey post hoc was run and it did not find a statistically significant difference among the private not-for-profit universities in the eight regions in the U.S. Five of the eight regions were above parity for female

assistant professors in private not-for profit doctoral-granting universities in the U.S. This result is similar to the findings of the female assistant professor‘s in public doctoral granting universities. At the associate professor level the percentage of female faculty was again higher than the percentage of female associate professors at the public institutions. The percentage of female professors was also higher in the private not for-profit universities than in the public universities. At the assistant professor rank the prominent difference was between Far West region (highest percentage) and the Rocky Mountain region. At the associate professor rank the difference was between the Far West region (highest) and the Southwest region (lowest). At the professor the difference between female professors was in the Plains region (highest) and the Rocky Mountain region (lowest). The prominent difference in the public doctoral-granting universities was between the New England region (highest) and the Rocky Mountain region (lowest). This uniformity was not present in the private not-for profit universities.

Summary of Findings

The issue of gender equity in higher education has received much attention in the last 50 years. Through articles and research studies a discrepancy between the percentage of female tenured faculty and male tenured faculty has been well documented. On all levels of the tenure track male faculty members were more evident than their female counterparts. Many reasons for this discrepancy have been examined and various solutions have been offered.

In early studies and articles the causes of low percentage of female tenured faculty suggested that women were inherently *less* than men and so the situation was to be expected and accepted. In the later years, female faculty members were encouraged to be more like men so they could compete equally with men. More recent studies have pointed to discrimination (Fox-Cardamone, 2010) and institutional bias (West & Curtis, 2006) as the cause for women’s poor representation in the tenured faculty ranks. The solutions offered have suggested that as more women enter higher education that the problem will eventually just *go away*. Some statistics intimate that this go away approach would take another 50 years or more. Institutional bias appears to be one of the main causes for women’s lack of progress in equalizing representation with their male colleagues (West & Curtis, 2006). This is a sensitive topic and requires a concerted effort at the highest level of academic administration to address adequately the issue of gender and equity in higher education. Policies that provide for family concerns, such as child care, aid female faculty as well as male faculty. Extending the tenure track to take into consideration time off for pregnancy, birth, childcare; allow men and women to have a home life and pursue a career.

Implications for Practice

This study indicated there has been some improvement in the percentage of women is all of the tenured faculty ranks. While this study did not seek to find reasons for the gender equity many plausible reasons were presented in the literature review. One implication is that women will leave academia for more equitable environments. The more serious implication is to academia itself. Women perceive and think differently and bring a unique outlook to issues (Viefers, Christie, & Ferdes, 2006). Women’s ways of thinking and being need to be recognized

and valued by universities, if they hope to reach all of their students. Women relate with others differently than men. This should not be a detriment to female faculty. Universities need to value the unique perspective female faculty bring to research and to the new topics they wish to research. As Fox-Cardamone (2010) stated, a paradigm shift is needed, is imperative, if academia is going to meet the needs of their students of the 21st century and beyond.

Recommendations for Further Research

This study was narrow in the sense that it examined the data to determine if differences existed in the tenured ranks for female faculty in the eight U.S. regions. Additional research is recommended as follows:

1. Examine individual regions for sources of gender inequity unique to their area.
2. Examine individual disciplines for differences in gender inequity. Address the question: Are women more represented in the English Department than in the Engineering Department?
3. Investigate more thoroughly what universities can do to bring about gender equity at their institutions such as being proactive in developing policies and procedures linked to rank, promotion, salaries, and family issues.
4. How does university campus culture impact the gender equity issue?
5. Examine state's policy and legislation dealing with gender equity in tenured staff.
6. What role does national politics and funding for research play in the current gender inequity issue?

While some improvement in the percentage of female tenured staff was seen, gender inequity was shown to be a national issue not a regional, state, or local one. The United States as a country is at a crossroads and has to decide; will women's unique contributions to academia be valued? Or will the situation regress and limit women's influence in higher education? Ideally, 10 years from now, there will be no need to write articles or do studies about gender equity because it will no longer be an issue. Hopefully it will no longer be an issue because gender equity has been realized in academia and not because women's presence has been diminished in the academic setting.

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