

## **A University-Wide Study of Faculty Salaries**

**Joseph E. Grush  
Northern Illinois University**

With input from three major committees largely dominated by faculty, Northern Illinois University (NIU) launched a university-wide study of faculty salaries in spring 2008. Multiple regression analyses showed that gender, ethnicity, and age were unrelated to current salaries whether starting salary was included or excluded as a predictor variable. In contrast, other variables such as market value for the discipline, rank of full professor, long-term merit ratings, and years at NIU accounted for 86 to 92 percent of the differences (variance) in faculty salaries. Chi-square follow-up analyses showed that female and minority faculty as well as those 40 years of age or older were not more likely to have salaries at least one standard deviation below as opposed to one standard deviation above their predicted values. Other analyses showed that gender, ethnicity, and age were unrelated to long-term merit whether indexed by raw averages or quintile scores. Recommendations for salary adjustments, limitations of the study, and directions for the future were also discussed.

### **Background**

In 1996, Dean Frederick Kitterle of the College of Liberal Arts and Sciences (LA&S) authorized the first major college-level study of faculty salaries. The following year, Dean Harold Kafer of the College of Visual and Performing Arts (VPA) did likewise. Both studies included nearly a dozen predictor variables and more than one analysis. Over the years, both colleges continued to share information but conducted their own studies for their own purposes. While VPA repeated its studies annually, LA&S only conducted its studies every three or four years due to its much larger faculty.

In 2004, Provost Ivan Legg established a Salary Equity Task Force of some 30 plus members representing the general faculty, various Presidential Commissions, the Council of Deans, and the Provost's Office. This task force was charged with undertaking a comprehensive examination of the processes by which faculty salaries were determined in

order to ascertain whether women and/or minorities were disadvantaged by those processes. The task force was divided into two subcommittees. One used quantitative analyses while the other pursued qualitative approaches to the study of faculty salaries. More specifically, the quantitative subcommittee provided guidance for and monitored the statistical analyses of faculty salaries that were conducted by each of the seven colleges plus the library along the lines of the analyses previously designed by LA&S and VPA. In contrast, the qualitative subcommittee hired outside consultants to conduct focus groups of female, of minority, of male, and of mixed groups of faculty members. Significantly, neither the quantitative nor the qualitative subcommittee was able to discover any evidence of bias directed against women or minorities in the area of salaries.

Following the recommendation of the task force, each college and the library conducted college-level analyses of faculty salaries in 2007. Once again, these local studies failed to produce evidence that discrimination against female or minority faculty members occurred at NIU. In the spring of 2008, Provost Raymond W. Alden III decided that it was an opportune time for NIU to conduct its first university-wide study of faculty salaries. After all, much of the needed data on long-term merit, matching offers, and college-initiated salary adjustments had just been compiled, updated, and verified. A university-wide study of faculty salaries was also warranted because only it could determine whether practices across the colleges were fair and equitable. If one college has a predominantly female faculty and routinely offers below market starting salaries, for example, a college-based study that investigates only the relative standing of its own faculty would not detect this inequity.

## **Present Study**

Consistent with NIU's system of shared governance, three major committees were created to help inform the present study. A Steering Committee was appointed by Provost Alden to coordinate the endeavor, to adjudicate conflicting opinions, and to make recommendations to him based on the results. The committee consisted of the two former deans with the most experience in conducting college-level studies, two senior faculty members from the Division of Statistics and from the Department of Mathematical Sciences, the director of NIU's Office of Diversity Resources and Affirmative Action, and a representative from the Office of the General Counsel. The latter two appointments were made with the concurrence of the respective vice president to whom these individuals report.

A Working Committee had eight faculty members who were appointed by their respective deans to supervise the 2004 and 2007 college-level analyses of faculty salaries. These individuals were responsible for providing the latest data for their colleges and to provide further guidance to the Steering Committee if needed. An Advisory Committee included eleven other faculty members. Eight were recommended by their respective deans, two were supplied by the Presidential Commission on the Status of Women, and one of its two allocated slots was filled by the Presidential Commission on the Status of Minorities. The Advisory Committee's main role was to suggest other variables, new approaches, or additional analyses that might help to determine whether systemic bias against female or minority faculty existed on campus. Finally, a Technical Subcommittee—consisting of the Steering Committee (minus legal counsel), a faculty member who conducted all of VPA's college-level studies, and a retired faculty member who routinely taught graduate statistics courses—was formed to resolve any issues that might arise when the data were being analyzed.<sup>1</sup>

The names and departmental affiliations of all 26 individuals who served on the various committees are listed in Appendix A. As can be seen there, the members of the various committees represent a good cross-section of the campus. Most of the members came from the faculty (18) with administrators (6) and supportive professional staff (2) making up the remainder. At the same time, the proportions of women (46%) and minorities (27%) were slightly higher than their representation in the campus population.

## **Method**

### **Data File**

In the spring of 2008 when the data file was being compiled and checked, there were 779 individuals who were tenured or held tenure-track appointments at NIU. A total of 99 of these cases were dropped from the study. Specifically, 61 individuals were excluded because they were in the first year of their appointments and did not have merit scores that could affect their salaries. Put differently, the results could be artificially inflated by their inclusion because their starting salaries were identical to their current salaries. Seventeen (17) other individuals were excluded because they were retiring or resigning from their positions. Seventeen (17) more individuals were excluded because they were in administrative positions that are evaluated by supervisors rather than by faculty, i.e., they did not have merit scores. Finally, four (4) faculty members were excluded because they were going on permanent disability or were undergoing disciplinary actions that could result in termination. The final sample of 680 faculty included 281 (41%) female and 126 (19%) minority faculty. The minority faculty included 76 Asians, 24 African Americans, 23 Hispanics, and 3 Native Americans. The final sample also contained 581 (85%) faculty who are 40 years of age or older.

## **Techniques**

Two basic statistical tools were used in the analyses: multiple regression and Chi-square. Multiple regression analysis was selected as the major tool because it is arguably the statistical method most frequently employed by scholars (Barrett & Sansonetti, 1988), the courts (e.g., Bazemore v. Friday, 1986; Cullen v. Indiana Board of Trustees, 2003; Rudebusch v. Hughes, 2002; Smith v. Virginia Commonwealth University, 1999), and universities (e.g., Carlin & Rooney, 2000; Clark & Ingram, 2005; Livingstone, 2006) to determine whether select groups of employees are being discriminated against by their employers in the area of salary. Essentially, this technique uses a set of variables to construct a predicted salary for each individual in the sample. These variables include factors that should affect salaries (e.g., rank, merit, and seniority) as well as factors that should not impact salaries (i.e., gender, ethnicity, and age). Once significant predictor variables have been identified and predicted scores constructed for each individual (see below), correlations are computed between the predicted and actual salaries. The degree of correspondence between these two variables is then expressed in terms of the percent of the differences (variance) between actual salaries that can be explained or accounted for by the predicted salaries.

Chi-square tests use established formulas to determine whether one known group differs from another known group in terms of its proportional representation on another dimension of interest or importance. In the present context, this statistical technique was used to test whether the proportion of female faculty, minority faculty, or those faculty who are 40 years of age and older have salaries that were markedly lower or markedly higher than their predicted levels.

## **Significance**

The statistical tools used here relied on probability estimates that elucidate whether patterns in the data were significant or were due to chance alone. In this regard, any finding that could occur 5 or fewer times out of 100 is the standard that is typically used to decide that an observed finding is statistically significant and should be treated as important. That convention was adopted here both to identify factors that were significant in the regression analyses and to determine whether individuals from protected classes were over- or under-represented among those with salaries higher or lower than predicted.

## **Variables**

Over the past twelve years, the colleges have evolved a set of predictor variables that can be used to explain or account for differences in salaries. The present set includes the

following 20 variables:

- Age
- College-level adjustment
- Critical Retention (CR) or Salary Equity (SE) adjustment
- Current rank of associate professor
- Current rank of full professor
- Ethnicity
- Gender
- Hired as associate professor
- Hired as full professor
- Long-term merit
- Market value of discipline
- Matching offer adjustment
- Merit x NIU years interaction
- Merit x years in rank interaction
- Presidential Research Professor (PRP) award
- Presidential Teaching Professor (PTP) award
- Starting salary
- Years at NIU
- Years at other universities
- Years in current rank

Before discussing how each variable was coded, scored, or otherwise assigned a numerical value, a brief word should perhaps be said about the two interaction terms: merit x NIU years and merit x years in rank. Depending on college records, long-term merit scores covered a minimum of the last 5 and a maximum of the last 15 years. Essentially, the interaction terms give extra credit (attribute more salary) to individuals who are still performing at a very high level many years into their careers.

### **Coding**

Variables were coded either as continuous or dichotomous variables. Ranks both at the time of hire and currently, PRP, PTP, CR/SE, gender, ethnicity, and age, for example, were coded as dichotomous variables. Specifically, individuals who have a particular rank, received a PRP, PTP, or CR/SE monetary award, or come from a protected class were coded as 1's with everyone else coded as 0's. Market value, current salary, and starting salary were coded as continuous variables reflecting market or actual monthly salaries. NIU years, other years, and years in rank were also coded as continuous variables. For purposes of consistency with college-level analyses, matching offers and college adjustments were coded on a 5-point scale where 1 equals monthly adjustments up to \$500, 2 equals adjustments from \$501 to \$1,000, and so forth (see Appendix B for details).

The coding of long-term merit posed something of a challenge because of variations in the extent to which departments employed the full range of the 5-point rating scale that is used for annual merit evaluations. Specifically, average long-term merit scores for departments ranged from a low of 3.32 to a high of 4.73. The Technical Subcommittee considered various solutions to this problem, including such strategies as standardizing merit scores within departments. In the end, the committee decided that the use of quintile

scores was the most fair (e.g., top 20% of faculty in all departments received the same merit score of 5) and the most transparent (readily interpretable) way to proceed.

The Steering Committee also decided that the Carnegie Foundation classifications among universities should be used as the basis for indexing the market value for salaries in each of NIU's 40 disciplines or departments. In this regard, the Carnegie Foundation uses (a) number of research doctoral degrees produced, (b) amount of external funding obtained for research, and (c) amount of internal funds committed to research to categorize universities as research very high, research high, doctoral, or master's (see Appendix C).

Average salaries from national surveys of doctoral and of master's departments were used, respectively, to benchmark the market value of salaries in NIU departments in which the highest degree offered is the doctoral research degree or the master's degree. Departments that offer non-research (non-dissertation) doctoral degrees were included with those that offer master's degrees (see Appendix C). All salary data were taken from the web-site of the College and University Professional Association (CUPA) for Human Resources.

## **Results**

### **Primary Analyses**

The data analyses were performed externally by an independent consultant. The first set of analyses included all predictor variables but age because of its possible confounding effects with other variables such as rank of full professor or years at NIU. Results of the regression analysis showed that 14 variables were significant. Market value of the discipline, rank of full professor, long-term merit, and years in rank accounted for 79% of the differences (variance) in faculty salaries. Starting salary, years at NIU, the interaction of

merit with years in rank, and college adjustments accounted for another 11% of the variance. Rank of associate, the interaction of merit with years at NIU, and the variables involving monetary awards (matching offers as well as PRP, PTP, CR/SE) were all statistically significant but collectively accounted for just 2% of the differences in salaries. Gender, ethnicity, starting ranks (full and associate), and years at other universities were not significant. The summary statistics for this analysis are presented in Appendix D together with the statistics for all of the other analyses reported below.

Follow-up tests were conducted to determine whether a larger number of female or minority faculty had lower as opposed to higher salaries than predicted. Using plus or minus one standard deviation as a cutoff, 160 faculty members were identified as having actual salaries that were higher or lower than predicted.<sup>2</sup> Demographic breakdowns of these “outliers” showed that there were 44 female and 116 male faculty as well as 26 minority and 134 non-minority faculty. While results showed that proportionately more female (59%) than male faculty (47%) had higher salaries than those predicted, this difference was not statistically significant. While proportionately more minority (58%) than non-minority (49%) faculty also had higher salaries than predicted, this difference was also insignificant.

The second set of analyses excluded starting salary as well as age. Starting salary was excluded because it can act as a "suppressor" variable by masking potential biasing effects that might occur at the point of entry to NIU. If John Smith is hired at a monthly salary \$400 higher than Jane Doe who has the same credentials and is hired in the same department and in the same year, for example, then the first analysis would falsely conclude that "All other things being equal, Jane's current monthly salary should be \$400 lower than John's salary."

The results of this second regression analysis, without starting salary included, showed that gender and ethnicity were not significant. Four other variables (PRP, CR/SE, hiring rank of associate, and NIU years) also failed to reach conventional levels of importance. In contrast, market value of the discipline, rank of full professor, long-term merit, and years in current rank were statistically significant and again accounted for 79% of the differences in faculty salaries. Not surprisingly, starting rank of full professor and years at other universities emerged as significant when starting salary (which previously subsumed them) was excluded. These variables, together with six other variables that were significant, collectively accounted for just 7% of the differences in faculty salaries.

Once again, follow-up tests were conducted to determine whether a larger number of female and minority faculty were more likely to have lower as opposed to higher salaries than predicted. Again using plus or minus one standard deviation as the cutoff, 168 faculty members were identified as having actual salaries that were higher or lower than predicted. Demographic breakdowns indicated that these outliers included 62 female and 106 male faculty as well as 34 minority and 134 non-minority faculty. The proportions of female (50%) and male (49%) faculty with higher salaries than predicted were virtually identical and not significantly different from one another. While proportionately fewer minority (47%) than non-minority faculty (50%) had higher salaries than predicted, this small difference was also statistically insignificant.

### **Secondary Analyses**

Minority Subgroups. Even though the number of individuals was likely to be too small to make any test meaningful, some members of the Advisory Committee were interested in learning whether there were differences in the number of African American, Asian, Hispanic,

and Native American faculty who had lower as opposed to higher salaries than predicted. Follow-up tests of both primary analyses produced no statistically significant differences. In the analysis with starting salaries included, Asian faculty were just as likely to have higher (10) as to have lower (11) salaries than predicted. In contrast, Hispanic (3), African American (1), and Native American (1) faculty had only higher salaries than predicted. In the analysis with starting salaries excluded, more Asians had lower (12) as opposed to higher (7) salaries than predicted. In contrast, other minorities emerged more frequently with higher as opposed to lower salaries than predicted. The figures were 5 versus 4 for Hispanics, 3 versus 2 for African Americans, and 1 versus 0 for Native Americans. It must be emphasized again, however, that none of these differences was statistically significant.

Age. Chronological age was initially excluded as a predictor variable because it could confound the expected effects of other variables such as rank of full professor and years at NIU. Because age is a protected class, however, the primary analyses were repeated with it included as a possible predictor variable. In these analyses, age was treated as a nominal or dichotomous variable with those 40 years of age and older coded as 1's and those younger coded as 0's. Age was scored in this manner (a) to conform to its legal definition, (b) to parallel the treatment for gender and ethnicity, and (c) to reduce its likely correlation with other factors.

The results of the regression analyses both with and without starting salaries showed that age was not statistically significant. Thus, these results were exactly identical to those reported previously. Follow-up tests were conducted to assess whether faculty who are 40 years of age or older were more likely to have lower as opposed to higher salaries than predicted. With starting salary included as a possible predictor variable, the same 160 "outliers" were identified as before. Of these, 150 were 40 years of age or older with just 10

being less than 40. While results showed that a higher proportion of the younger faculty (8 or 80%) were more likely to receive higher salaries than was the case for the older faculty (73 or 49%), this difference was not significant. With starting salary excluded as a predictor variable, the same 168 outliers were identified as before. Of these, 142 were 40 years of age or older with 26 being less than 40. While results showed that a higher proportion of the younger (14 or 54%) than the older (69 or 49%) faculty had higher salaries than predicted, this difference was not significant.<sup>3</sup>

Merit. Even though NIU's merit system is largely based on recommendations by faculty personnel committees as opposed to administrative review, some individuals believe that merit could be a "tainted" variable that serves as the vehicle to discriminate against women. While gender differences in merit could be attributed to a number of reasons (e.g., taking time out to birth and to raise children), the possibility of discriminatory biases in merit were nevertheless explored. Specifically, analyses were conducted in which merit rather than salary was treated as the variable to-be-predicted ("criterion") in order to determine whether gender, ethnicity, or age might be negatively correlated with it when the influences of other factors were controlled.

When quintile merit scores were used as the criterion variable, results of the regression analysis showed that gender, ethnicity, and age were not related to merit. In contrast, critical retention and salary equity (CR/SE) awards, current rank of full professor, and college awarded adjustments were significant. These latter variables collectively accounted for 23% of the differences in quintile merit scores. Matching offers as well as hiring and present rank of associate professor were also significant, but they collectively accounted for just 2% of the differences in salary.

As a further test of the hypothesis that merit might be a "tainted" variable, a regression analysis was conducted with the raw or unconverted merit scores. Once again, the results of this analysis showed that gender, ethnicity, and age were not significantly related to merit. CR/SE, college adjustments, and rank of full professor were again significant variables that collectively accounted for 19% of the differences in salaries. Seven other variables were also significant but combined to add just 4% to explaining the differences among the raw or unconverted merit scores.

Crucial Test. A few individuals have argued that the effects of discrimination are subtle and difficult to detect. Proponents of this view might argue, for example, that the analyses reported here failed to detect bias because they employed a large number of predictor variables that collectively swamped the potential effects of gender, ethnicity, or age. While a variety of arguments can be mounted to counter this point, a final statistical analysis was nevertheless conducted to address this issue empirically. Specifically, a regression analysis was conducted with just six predictor variables. Three of these were the demographic variables of gender, ethnicity, and age. The other three variables--market value of the discipline, NIU years, and years at other institutions--were selected because they fall outside of the NIU merit and monetary award systems. The results of this analysis showed that gender, ethnicity, and age did not play a significant role in accounting for salaries. In contrast, the three non-judgmental factors were individually significant and collectively accounted for 66% of the differences in salaries.

### **Salary Adjustments**

A secondary purpose of this study was to identify individual faculty members who might be deserving of salary adjustments. After considerable discussion, the Technical

Subcommittee recommended to the provost that individuals who met four criteria should receive special salary adjustments. Specifically, faculty members were recommended for adjustments if they had the following:

- (1) long-term raw merit scores of 4.00 or higher and quintile merit scores of 4 or 5;
- (2) average standardized residual scores of -1.00 or worse in the primary analyses that included and excluded starting salary;
- (3) tenure or have been recommended for tenure by all four entities below that of the provost at the time of the study; and
- (4) less than 12 years in rank as of August 16, 2008, if they were associate professors

It should be noted that the first and last criteria were imposed so that recommendations made as a result of this study would not contravene or contradict the university's merit or promotional systems. Twenty-six (26) individuals met all four criteria. A fifth eligibility criterion was added even though it was beyond the subcommittee's ability to assess. This criterion was that "nothing in the personnel record should preclude this individual from receiving a salary adjustment." The subcommittee appropriately left the implementation of this criterion to the provost in consultation with the deans.

A final set of tests indicated that there would be no "disparate impact" if all 26 individuals who met the above criteria were to receive salary adjustments. In other words, female (38%) and minority (23%) faculty were generally included in direct proportion to their representation among the faculty. In fact, if one more female and one fewer minority faculty were included in this group, its proportional representation would come very close to exactly matching that of the faculty. Similarly, while those 40 years of age and older were slightly over-represented in the group recommended for salary adjustments (92%) compared to the faculty (85%), this proportional difference was not statistically significant. In fact, if two fewer faculty 40 years of age and older were included in the group of faculty recommended

for special salary adjustments, its proportional representation would exactly match that of the faculty.

### **Discussion**

Twenty (20) predictor variables were used in a variety of regression analyses in order to conduct as thorough a study of faculty salaries as possible. Whether starting salary or chronological age were included or excluded as predictor variables, the results across four analyses showed that 12 to 14 variables were individually significant and collectively accounted for 86 to 92 percent of the differences (variance) in faculty salaries. In these analyses, five (5) significant variables combined to account for over 80 percent of the differences in salaries. While market value of the discipline explained the largest portion of the differences, higher salaries were meaningfully related to receiving consistently high merit ratings, achieving the rank of full professor, having seniority in academic rank, and the “added value” of performing well for a sustained period of time after promotion (merit by rank interaction). All other statistically significant variables typically accounted for 2 percent or less of the variance in faculty salaries.

In contrast, gender, ethnicity, and age were not significantly related to current salaries in any of these regression analyses. Moreover, Chi-square follow-up tests for these four analyses showed that female and minority faculty as well as those faculty 40 years of age or older were no more likely to have actual salaries that were one or more standard deviations below than one or more standard deviations above their predicted salaries.

Three additional regression analyses were conducted. Two analyses used either raw or quintile merit scores as the criterion variables with all other variables except current

salary treated as predictor variables. Although the results of these analyses showed that several variables were significantly related to merit, with rank of full professor and critical retention/salary equity awards being among the most powerful, gender, ethnicity, and age were not significantly related to either merit index. A final analysis included the three demographic variables of gender, ethnicity, and age and three judgment-free variables of market value, NIU years, and years at other universities. Results of this analysis showed that the three judgment-free variables were significantly related to current salaries while the three demographic ones were not.

### **Independent Evidence**

Despite the sustained effort to determine if there was any statistical evidence of institutional or systemic discrimination, none was found. Nevertheless, an effort was made to determine if other sources would confirm or contradict the results reported here. In this regard, the only relevant source to be located was a report by the American Association of University Professors (AAUP) that focuses on issues of gender and equity in higher education. More specifically, AAUP's 2006 report (West & Curtis, 2006) indicates that NIU exceeds other doctoral universities in terms of female faculty having a higher percent of full-time (43% vs. 34%), of tenure-track (53% vs. 41%), of tenured (33% vs. 26%), and of full professor (25% vs. 19%) positions. Compared to other doctoral universities, NIU female faculty also earn a higher percent of the salaries paid to male counterparts at the full (92% vs. 91%), associate (96% vs. 93%), and assistant (101% vs. 92%) professor ranks.

### **Limitations**

This study has several limitations that should be explicitly noted. Foremost among them is the fact that it investigated only institution-wide or systemic bias directed against

groups of faculty. In other words, it did not address the issue of possible discrimination directed against individuals or even isolated pockets of individuals. In this regard, it should be noted that the university provides multiple venues for individuals or groups of individuals to seek redress of perceived discrimination directed against them. It is also worth noting that studies that were conducted independently by the various colleges in 2004 and again in 2007 failed to find any statistical evidence of discrimination at those more decentralized levels. Equally important, the qualitative sub-committee of the 2004 salary equity task force that relied heavily on demographically diverse focus groups failed to find any consistent testimonial evidence of discrimination in the area of faculty salaries.

Two other salary related concerns were beyond the scope of this study to address. One concerns the fact that faculty salaries here lag those of cohorts at comparable universities elsewhere. The university is well aware of this fact and has set achieving salary competitiveness as a very high institutional priority. The second concern focuses on promotions. While faculty of all demographic backgrounds spend about the same six (6) years earning tenure and being promoted to associate professor, little is known whether female and minority faculty take more, less, or the same amount of time to be promoted to full professor as their male or non-minority cohorts. While the time and effort needed to conduct such a study precluded its inclusion here, the spirit that drove the present study would clearly endorse the idea that a time-to-promotion study should be conducted in the near future.

## **Acknowledgments**

I would be severely remiss if I did not publicly thank Provost Alden for commissioning this study or express my gratitude to all of the faculty, staff, and administrators (Appendix A) who gave so generously of their time and ideas to make this study far better than it otherwise would have been without their participation. I also want to acknowledge the untold hours of toil that two very capable colleagues in Human Resource Services (Celeste Latham and Liz Guess) and two in the Provost's Office (Margie Foshe and Chris Peddle) gave to this project. Without their dedication and patience, the data file with over 25,000 entries would not be virtually free of error. Finally, I want to thank all of the present and past deans, department chairs, and faculty members on personnel and promotion committees who have acted as consummate professionals in always striving to do the right thing. They are the unsung but true heroes who are ultimately responsible for the results reported here. Their commitment and vigilance ensure that work well begun will continue until fully done.

## **Endnotes**

<sup>1</sup> The Technical Subcommittee planned a variety of follow-up tests that would be conducted if gender, ethnicity, or age had a significant impact on salaries. If one of the demographic variables were significant, for example, interaction terms with it and variables for colleges and departments would be used to determine whether the bias was university-wide or localized in a few colleges and/or departments.

<sup>2</sup> One standard deviation ( $\pm 1.00$ ) was used rather than the more statistically correct index of  $\pm 1.96$  standard deviations for defining low and high outliers. This was done in an effort to be more inclusive in determining whether female and minority faculty or those 40 years of age and older were disproportionately more likely to have lower as opposed to higher salaries than predicted.

<sup>3</sup> Of the younger faculty who had higher salaries than predicted, most (69%) were in high paying disciplines (business and law) in which market-driven starting salaries are increasing at a rapid pace.

### Select References

- Barrett, G.V. & Sansonetti, D.M. (1988). Issues concerning the use of regression analysis in salary discrimination cases. Personnel Psychology, 41, 503-516.
- Bazemore v. Friday, 478 U.S. 385 (1986).
- Carlin, P. & Rooney, P. (2000). Am I paid fairly? A university assesses pay equity for its faculties. Change, March/April 2000, 41-49.
- Clark, L.A. & Ingram, B. (2005). Final Report on a study of gender and ethnic-minority equity in faculty salaries at the University of Iowa, 2004-2005.  
<http://www.provost.uiowa.edu/docs/reports/salaryequitystudy.pdf>
- Cullen v. Indiana University Board of Trustees, 338 F. 3d 693 (U.S. Court of Appeals, Seventh Circuit, July 29, 2003).
- Livingstone, C. (2006). Faculty equity regression study—2005-06: Preliminary results.  
<http://www.dmi.uiuc.edu/reg/faceq06prelim.doc>
- Rudebusch v. Hughes, 313 F. 3d 506 (U.S. Court of Appeals, Ninth Circuit, December 12, 2002).
- Smith v. Virginia Commonwealth University, 84 F. 3d 672 (U.S. Court of Appeals, Fourth Circuit, August 24, 1994).
- West, M.S. & Curtis, J.W. (2006). AAUP faculty gender equity indicators 2006. Washington, DC: American Association of University Professors.

## APPENDIX A

### Committees for the University-Wide Study of Faculty Salaries

#### Steering Committee

Karen Baker, Human Resource Services Administration  
Vickie Gillio, Legal Counsel, University Legal Services  
Joe Grush, Acting Vice Provost for Resource Planning  
Harold Kafer, Dean, College of Visual and Performing Arts  
Mohsen Pourahmadi, Division of Statistics  
Linda Sons, Department of Mathematical Sciences

#### Working Committee

Diane Docking, College of Business  
David Gaebler, College of Law  
Peter Middleton, College of Visual and Performing Arts  
Carla Montgomery, College of Liberal Arts and Sciences  
Mary Pritchard, College of Health and Human Sciences  
Mansour Tahernezehadi, College of Engineering and Engineering Technology  
Brent Wholeben, College of Education  
H. Stephen Wright, University Libraries

#### Advisory Committee

Omar Ghrayeb, College of Engineering and Engineering Technology  
Benny Gomes, College of Visual and Performing Arts  
Adrienne Holloway, Presidential Commission on the Status of Women  
Brigid Lusk, College of Health and Human Sciences  
Nestor Osorio, University Libraries  
Rhonda Robinson, Presidential Commission on the Status of Women  
Amy Rose, College of Education  
Lorraine Schmall, College of Law  
Virginia Wilcox-Gök, College of Liberal Arts and Sciences  
Ronnie Wooten, Presidential Commission on the Status of Minorities  
Daniel Wunsch, College of Business  
TBA, Presidential Commission on the Status of Minorities

#### Technical Sub-Committee

Karen Baker, Human Resource Services Administration  
Joe Grush, Vice Provost for Resource Planning  
Harold Kafer, Dean, College of Visual and Performing Arts  
Peter Middleton, College of Visual and Performing Arts  
Frederick Schwantes, Deputy Provost  
Mohsen Pourahmadi, Division of Statistics  
Linda Sons, Department of Mathematical Sciences

## APPENDIX B

### Coding System for University-Wide Study of Faculty Salaries

Variable Code	Variable	Calculation												
CONTROL #	Individual ID#	Confidential												
AGE	Chronological Age	Age 40 or older coded as 1, else 0												
COL ADJUST	College Adjustments	Coded same as MATCH												
CR/SE	Critical Retention/Salary Equity	Recipient coded as 1, else 0												
RNKPAS	Current Rank: Associate	Associate Professor coded as 1, else 0												
RNKPF	Current Rank: Full	Full Professor coded as 1, else 0												
ETHNICITY	Ethnicity Status	Minority ethnicity coded as 1, else 0												
GENDER	Gender	Females coded as 1, males as 0												
RNKHAS	Rank Hired: Associate	Associate Professor coded as 1, else 0												
RNKHP	Rank Hired: Full	Full Professor coded as 1, else 0												
MERIT	Average Long-Term Merit Rating	Average rating for up to 15 years converted to quintile scores within departments, with 5 = highest and 1 = lowest												
MARKET	Market Rate for Discipline	CUPA salary = ((Avg. Sal + (Avg. Full + Avg. Assoc. + Avg. Asst.)/3))/2/9												
MATCH	Matching Offer	\$ Monthly Adjustment Coded as follows: <table style="margin-left: 40px; border: none;"> <tr> <td>\$0 =</td> <td>0</td> <td>\$1001-1500 =</td> <td>3</td> </tr> <tr> <td>Up to \$500 =</td> <td>1</td> <td>\$1501-2000 =</td> <td>4</td> </tr> <tr> <td>\$501-1000 =</td> <td>2</td> <td>\$2001 or more =</td> <td>5</td> </tr> </table>	\$0 =	0	\$1001-1500 =	3	Up to \$500 =	1	\$1501-2000 =	4	\$501-1000 =	2	\$2001 or more =	5
\$0 =	0	\$1001-1500 =	3											
Up to \$500 =	1	\$1501-2000 =	4											
\$501-1000 =	2	\$2001 or more =	5											
YRS NIU x MERIT	Merit x NIU Yrs. Interaction Term	Raw scores multiplied by each other to give additional credit to long-term faculty who continue to perform well												
YRS RANK x MERIT	Merit x Yrs. In Rank Interaction Term	Raw scores multiplied to give additional credit to long-term faculty who continue to perform well after promotion												
PRP	Presidential Research Professor	PRP coded as 1, else 0												
PTP	Presidential Teaching Professor	PTP coded as 1, else 0												
STRT SAL	Starting Monthly Salary	As is												
YRS NIU	Years at NIU	2008 minus year hired at NIU												
OTR YRS	Years at other schools	As is												
YRS RANK	Years in Current Rank	2008 minus year promoted to current rank												
FY08 MO	Current Monthly Salary	As is												

## APPENDIX C

### Carnegie Foundation for the Advancement of Teaching Basic Classification Description

The Basic Classification is an update of the traditional classification framework developed by the Carnegie Commission on Higher Education in 1970 to support its research program, and later published in 1973 for use by other researchers. Although this classification has undergone many changes over the years, the current release involves some significant changes from previous editions. Basic Classifications are time-specific snapshots of institutional attributes and behavior based on data from 2002-03 and 2003-04. Institutions might be classified differently using a different timeframe.

#### Doctorate-Granting Universities

With this edition, doctorate-granting institutions are once again differentiated based on an explicit measure of research activity. We now use a multi-measure index rather than the single measure of federal funding used in previous editions. This approach incorporates several improvements: it is not limited to funding; the funding measures used are not limited to federal funding; and the analysis considers both aggregate and per-capita measures of research activity. Using the new methodology, we have identified three categories of doctorate-granting institutions. Because of these changes, the new categories are not comparable to those previously used (Research I & II and Doctoral I & II; and Doctoral/Research—Extensive and Intensive).

Doctorate-granting institutions include institutions that award at least 20 doctoral degrees per year (excluding doctoral-level degrees that qualify recipients for entry into professional practice, such as the J.D., M.D., Pharm.D., D.P.T., etc.).

RU/VH: Research Universities (very high research activity)

RU/H: Research Universities (high research activity)

DRU: Doctoral/Research Universities

Institutions were included in these categories if they awarded at least 20 doctorates in 2003-04. First-professional degrees (J.D., M.D., Pharm.D., etc.) were not counted for the purpose of this criterion, nor were doctoral degrees in audiology or rehabilitation and therapeutic professions, except when we were informed that the degrees were research doctorates (the IPEDS Completions data do not identify degree titles, so professional-practice doctorates such as Aud.D. or D.P.T. cannot be explicitly identified).

Level of research activity. Doctorate-granting institutions were assigned to one of three categories based on a measure of research activity. It is important to note that the groups differentiate solely with respect to level of research activity, not quality or importance.

The analysis examined the following correlates of research activity:

- research & development (R&D) expenditures in science and engineering (S&E; “science and engineering” is defined by NSF to include the social sciences);
- R&D expenditures in non-S&E fields; S&E research staff (postdoctoral appointees and other non-faculty research staff with doctorates);

- Doctoral conferrals in humanities fields, in social science fields, in STEM (science, technology, engineering, and mathematics) fields, and in other fields (e.g., business, education, public policy, social work).

These data were statistically combined using principal components analysis to create two indices of research activity reflecting the total variation across these measures (based on the first principal component in each analysis).

One index represents the aggregate level of research activity, and the other captures per-capita research activity using the expenditure and staffing measures divided by the number of full-time faculty whose primary responsibilities were identified as research, instruction, or a combination of instruction, research, and public service. The values on each index were then used to locate each institution on a two-dimensional graph. We calculated each institution's distance from a common reference point, and then used the results to assign institutions to three groups based on their distance from the reference point. Thus the aggregate and per-capita indices were considered equally, such that institutions that were very high on the *either* index were assigned to the "very high" group, while institutions that were high on at least one (but very high on neither) were assigned to the "high" group. Remaining institutions and those not represented in the NSF data collections were assigned to the "Doctoral/Research Universities" category.

Before conducting the analysis, raw data were converted to rank scores to reduce the influence of outliers and to improve discrimination at the lower end of the distributions where many institutions were clustered. Index scores based on the raw data and on the rank-order data had correlations of .881 (aggregate) and .813 (per-capita).

Data sources. Doctoral conferrals by field were based on IPEDS Completions data reporting 2003-04 degree conferrals. Faculty counts were from the IPEDS Employees by Assigned Position (EAP) data for fall 2003. R&D expenditures came from the NSF Survey of Research and Development Expenditures at Universities and Colleges for fiscal year 2003. Research staff data came from the NSF Survey of Graduate Students and Postdoctorates in Science and Engineering for fall 2003. These were the most current and complete data available at the time of our analysis, and we judged currency to be more important than temporal alignment of all data sources.

Reporting of non-S&E expenditures was mandatory for the first time for the YF2003 survey, but not all institutions reported these data. Of 277 institutions analyzed, 53 did not report non-S&E expenditures. For these institutions, we implemented a regression-based imputation scheme to fill in the missing data.

In some cases, the NSF data were reported at a higher level of aggregation than is needed for classification purposes (*i.e.*, a university system comprising multiple campuses that are distinct entities for classification purposes, but that are reported together as a single entity in the NSF data). Because the Graduate Students and Postdoctorates data were reported by department, we made manual changes to create campus-level records. For the R&D Expenditures data, it was not possible to disaggregate the data at the campus level. We adopted the allocation scheme developed by "The Center at the University of Florida (now housed at Arizona State University; see <http://mup.asu.edu/DataNotesIntroText.html> [accessed **March 15, 2007**]).

**Appendix D**  
**Summary Statistics for All Analyses**

---

<b>Table</b>	<b>Title</b>
1	Primary Analysis with Starting Salary as a Predictor Variable
2	Tests of Low versus High Outliers by Gender and Ethnicity (see analysis of Table 1)
3	Primary Analysis without Starting Salary as a Predictor Variable
4	Tests of Low versus High Outliers by Gender and Ethnicity (see analysis of Table 3)
5	Tests of Low versus High Outliers by Minority Subgroup from Analyses that Included (Table 1) and Excluded (Table 3) Starting Salary as a Predictor Variable
6	Secondary Analysis with Age and Starting Salary as Predictor Variables
7	Tests of Low versus High Outliers by Gender, Ethnicity, and Age (see analysis of Table 6)
8	Secondary Analysis with Age but not Starting Salary Included as a Predictor Variable
9	Tests of Low versus High Outliers by Gender, Ethnicity, and Age (see analysis of Table 8)
10	Analysis with Quintile Merit Scores as the Criterion Variable
11	Analysis with Non-transformed Merit Scores as the Criterion Variable
12	Analysis of Salaries with Three Demographic and Three Fact-Based Predictor Variables

---

**Table 1. Primary Analysis with Starting Salary as a Predictor Variable**

Criterion = Current Salary  
 Age category variable not entered  
 N = 680

Significant	Step	R	R Square	Adjusted R Square	Change R Square	B	Std. Error	Beta	t	Sig.
(Constant)						-3347.36	184.45		-18.15	0.000
Market Rate for Discipline	1	0.709	0.503	0.502	0.503	0.60	0.03	0.311	19.00	0.000
Present Rank: Full	2	0.850	0.722	0.721	0.219	1612.89	109.39	0.329	14.74	0.000
Quintile Merit Rating	3	0.878	0.772	0.771	0.050	283.58	20.46	0.173	13.86	0.000
Years in Current Rank	4	0.892	0.796	0.794	0.024	47.37	6.85	0.137	6.91	0.000
Starting Monthly Salary	5	0.915	0.837	0.836	0.041	0.67	0.03	0.612	25.46	0.000
Years at NIU	6	0.931	0.867	0.865	0.030	114.88	8.32	0.454	13.80	0.000
College Adjustments	7	0.941	0.886	0.885	0.019	424.16	36.74	0.140	11.54	0.000
Years in Rank by Quintile Merit Interaction	8	0.953	0.908	0.907	0.022	185.67	37.48	0.089	4.95	0.000
Matching Offer	9	0.957	0.916	0.915	0.008	432.23	56.36	0.086	7.67	0.000
Present Rank: Associate	10	0.959	0.919	0.918	0.003	463.22	75.64	0.103	6.12	0.000
Years at NIU by Quintile Merit Interaction	11	0.961	0.923	0.921	0.003	186.03	38.01	0.087	4.89	0.000
Critical Retention (CR) or Salary Equity (SE)	12	0.961	0.924	0.922	0.001	220.26	84.05	0.033	2.62	0.009
Presidential Research Professor	13	0.961	0.924	0.923	0.001	355.78	144.18	0.031	2.47	0.014
Presidential Teaching Professor	14	0.962	0.925	0.923	0.001	355.74	163.82	0.025	2.17	0.030

**Not Significant**

Gender  
 Minority Status  
 Rank Hired: Full  
 Rank Hired: Associate  
 Years at Other Schools

**Table 2. Tests of Low versus High Outliers by Gender and Ethnicity (see analysis of Table 1)**

Cross-tabulation of Gender Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Gender	Male	61 (52.6%)	55 (47.4%)	116
	Female	18 (40.9%)	26 (59.1%)	44
	Total	79 (49.4%)	81 (50.6%)	160

Chi-Square = 1.740, p = .187

Cross-tabulation of Ethnicity Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Ethnicity	White	68 (50.7%)	66 (49.3%)	134
	Non-White	11 (42.3%)	15 (57.7%)	26
	Total	79 (49.4%)	81 (50.6%)	160

Chi-Square = 0.620, p = .431

**Note.** Outliers were defined as faculty whose actual salaries were at least one standard deviation higher or lower than their predicted salaries (see Endnote 2).

**Table 3. Primary Analysis without Starting Salary as a Predictor Variable**

Criterion = Current Salary  
 Age Category and Starting Salary not Entered  
 N = 680

Significant	Step	R	R Square	Adjusted R Square	Change R Square	B	Std. Error	Beta	t	Sig.
(Constant)						-3248.06	245.06		-13.25	0.000
Market Rate for Discipline	1	0.709	0.503	0.502	0.503	1.17	0.03	0.611	39.74	0.000
Present Rank: Full	2	0.850	0.722	0.721	0.219	1693.03	105.70	0.346	16.02	0.000
Quintile Merit Rating	3	0.878	0.772	0.771	0.050	309.20	25.98	0.189	11.90	0.000
Years in Current Rank	4	0.892	0.796	0.794	0.024	53.67	5.62	0.155	9.55	0.000
College Adjustments	5	0.903	0.815	0.814	0.019	458.27	49.27	0.151	9.30	0.000
Years in Rank by Quintile Merit Interaction	6	0.914	0.836	0.834	0.021	197.46	49.48	0.095	3.99	0.000
Years at Other Schools	7	0.922	0.851	0.849	0.015	56.81	9.58	0.107	5.93	0.000
Matching Offer	8	0.925	0.855	0.853	0.005	356.03	74.34	0.071	4.79	0.000
Present Rank: Associate	9	0.926	0.857	0.855	0.002	355.28	90.10	0.079	3.94	0.000
Years at NIU by Quintile Merit Interaction	10	0.927	0.859	0.857	0.001	140.65	51.61	0.066	2.73	0.007
Rank Hired: Full	11	0.927	0.860	0.858	0.001	676.37	257.20	0.048	2.63	0.009
Presidential Teaching Professor	12	0.928	0.861	0.859	0.001	542.65	220.28	0.038	2.46	0.014

Gender  
 Minority  
 Presidential Research Professor  
 Critical Retention (CR) or Salary Equity (SE)  
 Rank Hired: Associate  
 Years at NIU

**Table 4. Tests of Low versus High Outliers by Gender and Ethnicity (see analysis in Table 3)**

Cross-tabulation of Gender Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Gender	Male	54 (50.9%)	52 (49.1%)	106
	Female	31 (50.0%)	31 (50.0%)	62
	Total	85 (50.6%)	83 (49.4%)	168

Chi-Square = 0.014, p = .906

Cross-tabulation of Ethnicity Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Ethnicity	White	67 (50.0%)	67 (50.0%)	134
	Non-White	18 (52.9%)	16 (47.1%)	34
	Total	85 (50.6%)	83 (49.4%)	168

Chi-Square = 0.094, p = .759

**Note.** Outliers were defined as faculty whose actual salaries were at least one standard deviation higher or lower than their predicted salaries (see Endnote 2).

**Table 5. Tests of Low versus High Outliers by Minority Subgroup from Analyses that Included (Table 1) and Excluded (Table 3) Starting Salary as a Predictor Variable**

Subgroup	Starting Salary Included		Starting Salary Excluded	
	High	Low	High	Low
Asian	10	11	7	12
Hispanic	3	0	5	4
African American	1	0	3	2
Native American	1	0	1	0
<b>Total</b>	<b>15</b>	<b>11</b>	<b>16</b>	<b>18</b>

**Chi-square (3)**

4.54,  $p = .220$

4.63,  $p = .214$

**Note.** Outliers were defined as faculty whose actual salaries were at least one standard deviation higher or lower than their predicted salaries (see Endnote 2).

**Table 6. Secondary Analysis with Age and Starting Salary as Predictor Variables**

Criterion = Current Salary  
 All Variables Entered  
 N = 680

Significant	Step	R	R Square	Adjusted R Square	Change R Square	B	Std. Error	Beta	t	Sig.
(Constant)						-3347.36	184.45		-18.15	0.000
Market Rate for Discipline	1	0.709	0.503	0.502	0.503	0.60	0.03	0.311	19.00	0.000
Present Rank: Full	2	0.850	0.722	0.721	0.219	1612.89	109.39	0.329	14.74	0.000
Quintile Merit Rating	3	0.878	0.772	0.771	0.050	283.58	20.46	0.173	13.86	0.000
Years in Current Rank	4	0.892	0.796	0.794	0.024	47.37	6.85	0.137	6.91	0.000
Starting Monthly Salary	5	0.915	0.837	0.836	0.041	0.67	0.03	0.612	25.46	0.000
Years at NIU	6	0.931	0.867	0.865	0.030	114.88	8.32	0.454	13.80	0.000
College Adjustments	7	0.941	0.886	0.885	0.019	424.16	36.74	0.140	11.54	0.000
Years in Rank by Quintile Merit Interaction	8	0.953	0.908	0.907	0.022	185.67	37.48	0.089	4.95	0.000
Matching Offer	9	0.957	0.916	0.915	0.008	432.23	56.36	0.086	7.67	0.000
Present Rank: Associate	10	0.959	0.919	0.918	0.003	463.22	75.64	0.103	6.12	0.000
Years at NIU by Quintile Merit Interaction	11	0.961	0.923	0.921	0.003	186.03	38.01	0.087	4.89	0.000
Critical Retention (CR) or Salary Equity (SE)	12	0.961	0.924	0.922	0.001	220.26	84.05	0.033	2.62	0.009
Presidential Research Professor	13	0.961	0.924	0.923	0.001	355.78	144.18	0.031	2.47	0.014
Presidential Teaching Professor	14	0.962	0.925	0.923	0.001	355.74	163.82	0.025	2.17	0.030

**Not Significant**

Gender  
 Minority Status  
 Age (40 year split)  
 Rank Hired: Full  
 Rank Hired: Associate  
 Years at Other Schools

**Table 7. Tests of Low versus High Outliers by Gender, Ethnicity, and Age (see analysis in Table 6)**

Cross-tabulation of Gender Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Gender	Male	61 (52.6%)	55 (47.4%)	116
	Female	18 (40.9%)	26 (59.1%)	44
	Total	79 (49.4%)	81 (50.6%)	160

Chi-Square = 1.740, p = .187

Cross-tabulation of Ethnicity Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Ethnicity	White	68 (50.7%)	66 (49.3%)	134
	Non-White	11 (42.3%)	15 (57.7%)	26
	Total	79 (49.4%)	81 (50.6%)	160

Chi-Square = 0.620, p = .431

Cross-tabulation of Age Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Age	Under 40	2 (20.0%)	8 (80.0%)	10
	40 and over	77 (51.3%)	73 (48.7%)	150
	Total	79 (49.4%)	81 (50.6%)	160

Chi-Square = 3.682, p = .055

**Note.** Outliers were defined as faculty whose actual salaries were at least one standard deviation higher or lower than their predicted salaries see endnote 20.

**Table 8. Secondary Analysis with Age but not Starting Salary Included as a Predictor Variable**

Criterion = Current Salary  
 Starting Salary Not Entered  
 N = 680

Significant	Step	R	R Square	Adjusted R Square	Change R Square	B	Std. Error	Beta	t	Sig.
(Constant)						3248.06	245.06		13.25	0.000
Market Rate for Discipline	1	0.709	0.503	0.502	0.503	1.17	0.03	0.611	39.74	0.000
Present Rank: Full	2	0.850	0.722	0.721	0.219	1693.03	105.70	0.346	16.02	0.000
Quintile Merit Rating	3	0.878	0.772	0.771	0.050	309.20	25.98	0.189	11.90	0.000
Years in Current Rank	4	0.892	0.796	0.794	0.024	53.67	5.62	0.155	9.55	0.000
College Adjustments	5	0.903	0.815	0.814	0.019	458.27	49.27	0.151	9.30	0.000
Years in Rank by Quintile Merit Interaction	6	0.914	0.836	0.834	0.021	197.46	49.48	0.095	3.99	0.000
Years at Other Schools	7	0.922	0.851	0.849	0.015	56.81	9.58	0.107	5.93	0.000
Matching Offer	8	0.925	0.855	0.853	0.005	356.03	74.34	0.071	4.79	0.000
Present Rank: Associate	9	0.926	0.857	0.855	0.002	355.28	90.10	0.079	3.94	0.000
Years at NIU by Quintile Merit Interaction	10	0.927	0.859	0.857	0.001	140.65	51.61	0.066	2.73	0.007
Rank Hired: Full	11	0.927	0.860	0.858	0.001	676.37	257.20	0.048	2.63	0.009
Presidential Teaching Professor	12	0.928	0.861	0.859	0.001	542.65	220.28	0.038	2.46	0.014

**Not Significant**

Gender  
 Minority  
 Age (40 year split)  
 Presidential Research Professor  
 Critical Retention (CR) or Salary Equity (SE)  
 Rank Hired: Associate  
 Years at NIU

**Table 9. Tests of Low versus High Outliers by Gender, Ethnicity, and Age (see analysis in Table 8)**

Cross-tabulation of Gender Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Gender	Male	54 (50.9%)	52 (49.1%)	106
	Female	31 (50.0%)	31 (50.0%)	62
	Total	85 (50.6%)	83 (49.4%)	168

Chi-Square = 0.014, p = .906

Cross-tabulation of Ethnicity Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Ethnicity	White	67 (50.0%)	67 (50.0%)	134
	Non-White	18 (52.9%)	16 (47.1%)	34
	Total	85 (50.6%)	83 (49.4%)	168

Chi-Square = 0.094, p = .759

Cross-tabulation of Age Outliers: Frequency (Percentage)

		Outliers		
		Low	High	Total
Age	Under 40	12 (46.2%)	14 (53.8%)	26
	40 and over	73 (51.4%)	69 (48.6%)	142
	Total	85 (50.6%)	83 (49.4%)	168

Chi-Square = 0.243, p = .622

**Note.** Outliers were defined as faculty whose actual salaries were at least one standard deviation higher or lower than their predicted salaries (see Endnote 2).

**Table 10. Analysis with Quintile Merit Scores as the Criterion Variable**

Criterion = Quintile Merit  
 Merit Interaction Variables Not Entered  
 N = 680

<b>Significant</b>	<b>Step</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Change R Square</b>	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
(Constant)						2.36	0.09		24.83	0.000
Critical Retention (CR) or Salary Equity (SE)	1	0.412	0.169	0.168	0.169	1.36	0.14	0.331	9.51	0.000
Present Rank: Full	2	0.473	0.223	0.221	0.054	0.92	0.13	0.308	6.84	0.000
College Adjustments	3	0.487	0.237	0.234	0.014	0.18	0.07	0.097	2.74	0.006
Matching Offer	4	0.497	0.247	0.242	0.010	0.30	0.10	0.097	2.90	0.004
Present Rank: Associate	5	0.505	0.255	0.249	0.008	0.35	0.12	0.128	2.96	0.003
Rank Hired: Associate	6	0.509	0.259	0.252	0.004	-0.31	0.16	-0.067	-1.98	0.048

**Not Significant**

Gender  
 Minority  
 Age (40 year split)  
 Presidential Research Professor  
 Presidential Teaching Professor  
 Market Rate for Discipline  
 Rank Hired: Full  
 Years at NIU  
 Years at Other Schools  
 Years in Current Rank  
 Starting Salary

**Table 11. Analysis with Non-transformed Merit Scores as the Criterion Variable**

Criterion = Raw Merit  
 Merit Interaction Variables Not Entered  
 N = 680

<b>Significant</b>	<b>Step</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Change R Square</b>	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
(Constant)						4.10	0.14		29.09	0.000
Critical Retention (CR) or Salary Equity (SE)	1	0.346	0.119	0.118	0.119	0.41	0.06	0.233	6.51	0.000
College Adjustments	2	0.417	0.174	0.171	0.054	0.17	0.03	0.215	5.67	0.000
Present Rank: Full	3	0.440	0.194	0.190	0.020	0.43	0.08	0.337	5.67	0.000
Market Rate for Discipline	4	0.447	0.200	0.195	0.006	0.00	0.00	-0.207	-4.64	0.000
Starting Salary	5	0.458	0.210	0.204	0.010	0.00	0.00	0.254	4.85	0.000
Present Rank: Associate	6	0.465	0.216	0.209	0.006	0.18	0.06	0.157	3.15	0.002
Rank Hired: Associate	7	0.471	0.222	0.214	0.006	-0.20	0.07	-0.104	-2.83	0.005
Rank Hired: Full	8	0.477	0.227	0.218	0.006	-0.31	0.14	-0.084	-2.16	0.031
Presidential Teaching Professor	9	0.482	0.232	0.222	0.005	0.28	0.13	0.076	2.18	0.030
Matching Offer	10	0.487	0.237	0.226	0.005	0.10	0.04	0.074	2.14	0.033

**Not Significant**

Gender  
 Minority  
 Age (40 year split)  
 Presidential Research Professor  
 Years at NIU  
 Years at Other Schools  
 Years in Current Rank

**Table 12. Analysis of Salaries with Three Demographic and Three Fact-Based Predictor Variables**

Criterion = Current Salary  
 Reduced set of variables entered  
 N = 680

<b>Significant</b>	<b>Step</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Change R Square</b>	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
(Constant)						-3434.30	336.59		-10.20	0.000
Market Rate for Discipline	1	0.709	0.503	0.502	0.503	1.32	0.04	0.690	30.97	0.000
Years at NIU	2	0.773	0.597	0.596	0.094	80.03	5.62	0.317	14.25	0.000
Years at Other Schools	3	0.817	0.667	0.665	0.070	140.56	11.81	0.265	11.91	0.000

**Not Significant**

Gender  
 Minority Status  
 Age (40 year split)