Faculty Salary Equity

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Overview

● Does salary data for the SoM show a male/female imbalance?
● If so, what is the size and nature of the imbalance?
Data

The data consist of administrative salary information on 1,541 faculty with up to 4 months data per faculty member - one month per year for the years 2001-2004. The separate components of the salary were available:

- X – base salary
- Y – negotiated additional compensation
- Z – additional incentive compensation
Data

Salary information for instructors (n=104), for recalled faculty (n=93), and for faculty who worked less than 95% time (an additional n=13) were excluded, leaving n=1,331 faculty and 5,302 months of data. Salary values were inflated to full time status by dividing by the percent time worked.
## Descriptive Statistics:

Median Monthly Total Salaries ($) by Degree

<table>
<thead>
<tr>
<th>Degree type</th>
<th>Female</th>
<th>Male</th>
<th>Male/Female ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD</td>
<td>12,242</td>
<td>15,874</td>
<td>129%</td>
</tr>
<tr>
<td>MD/PhD</td>
<td>12,801</td>
<td>13,600</td>
<td>106%</td>
</tr>
<tr>
<td>PhD</td>
<td>9,225</td>
<td>9,584</td>
<td>104%</td>
</tr>
</tbody>
</table>
## Descriptive Statistics:

### Median Monthly Total Salaries ($) by Rank

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>Female</th>
<th>Male</th>
<th>Male/Female Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>14,411</td>
<td>16,825</td>
<td>117%</td>
</tr>
<tr>
<td>Associate</td>
<td>11,416</td>
<td>12,622</td>
<td>111%</td>
</tr>
<tr>
<td>Assistant</td>
<td>9,716</td>
<td>10,416</td>
<td>107%</td>
</tr>
</tbody>
</table>
Are these easily explained “away”?

Example:

**Department H**
- Females: $15,000 n=10 10% female
- Males: $15,000 n=90

**Department L**
- Females: $10,000 n=90 90% female
- Males: $10,000 n=10

**Overall**
- Females: $10,500 n=100
- Males: $13,500 n=100
Key question:

What variables should be accounted for before comparing male and female salaries?

• Must be sufficiently detailed to account for obvious differences.

• Should not be so detailed as to leave each individual in (essentially) a separate comparison group.

• Should be wary of adjusting for variables not under control of the individual.
Adjustment that serves to shift focus of the imbalance:

Example:

Awarded Chair’s Discretionary Funds

Females $15,000 n=10 10% female
Males $15,000 n=90

Not Awarded Chair’s Discretionary Funds

Females $10,000 n=90 90% female
Males $10,000 n=10

Overall

Females $10,500 n=100
Males $13,500 n=100
An adjusted statistical analysis:

• Can document imbalance.
• Can point the way to trouble areas.
• Can *not* prove inequity or discrimination.

There may be unaccounted-for differences that offer a reasonable explanation to why imbalances exist.
Variables adjusted for in the statistical analyses:

- Department
- Rank and step
- Degree type (MD, MD/PhD, PhD)
- Series (In Residence, Clinical X, …)
- Years of UC service
Statistical analyses

• Analyzed total salary, individual components (X and Y), whether an individual received a Z payment and, if the individual received a Z payment, the amount.

• Amounts were log transformed and subjected to a repeated measures regression analysis adjusting for the listed variables.

• Presence of payments were analyzed by repeated measures logistic regression adjusting for the listed variables.
Results:

Proportion of Male to Female Median Salary by Degree Type, after Adjustment

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>Ratio</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD</td>
<td>1.12</td>
<td>(1.08, 1.16)</td>
</tr>
<tr>
<td>MD/PhD</td>
<td>1.00</td>
<td>(0.92, 1.09)</td>
</tr>
<tr>
<td>PhD</td>
<td>0.96</td>
<td>(0.94, 1.01)</td>
</tr>
</tbody>
</table>
### Results:

Proportion of Male to Female Median Salary by Rank, after Adjustment

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>Ratio</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>1.04</td>
<td>(0.99, 1.08)</td>
</tr>
<tr>
<td>Associate</td>
<td>1.07</td>
<td>(1.01, 1.13)</td>
</tr>
<tr>
<td>Assistant</td>
<td>1.04</td>
<td>(1.00, 1.08)</td>
</tr>
</tbody>
</table>
Results (cont.)

I next focused on the MDs, to see if more information could be gleaned as to the source. I analyzed the X and Y components of the salary, the odds of a Z-payment and, if a Z-payment was present, the amount.
Results:

Proportion of Male to Female Median Salary Components and Odds of a Z Payment, Aggregated over Departments, MDs only

<table>
<thead>
<tr>
<th>Component</th>
<th>Ratio</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>1.01</td>
<td>(1.00, 1.02)</td>
</tr>
<tr>
<td>Y</td>
<td>1.61</td>
<td>(1.15, 2.27)</td>
</tr>
<tr>
<td>Odds of Z</td>
<td>2.70</td>
<td>(1.64, 2.44)</td>
</tr>
<tr>
<td>Z, if present</td>
<td>1.56</td>
<td>(1.27, 1.91)</td>
</tr>
</tbody>
</table>
Are the results misleading because of heterogeneity across departments?

Five Largest Departments, MDs only, Total Compensation.

<table>
<thead>
<tr>
<th>Department</th>
<th>Ratio</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.05</td>
<td>(0.98, 1.13)</td>
</tr>
<tr>
<td>B</td>
<td>1.01</td>
<td>(0.93, 1.10)</td>
</tr>
<tr>
<td>C</td>
<td>1.09</td>
<td>(1.01, 1.17)</td>
</tr>
<tr>
<td>D</td>
<td>1.43</td>
<td>(1.25, 1.64)</td>
</tr>
<tr>
<td>E</td>
<td>1.15</td>
<td>(1.08, 1.23)</td>
</tr>
</tbody>
</table>
Limitations

- Statistical analysis can only document imbalance, not prove inequity.
- Administrative data is not perfect – detailed analysis of one of the large departments revealed an error rate of about 10% in step (usually off by 1 step). Also, data from faculty at VAMC sometimes listed percent effort as >95% when it was not.
- More detailed adjustment variables were not available.
- I did not look at advancement, only salary.
Summary

- Aggregating across all departments, male faculty salaries were higher, especially for MDs and higher faculty ranks.

- After adjustment for a number of potentially confounding variables, only MDs showed an imbalance, about 12% higher for males.

- This imbalance arose because of a higher frequency of male MDs receiving Z-payments (odds about 2.7 times higher) and larger Y- and Z-components of the total salary.
Thanks to -

- Russell Fitzgerald in the Dean’s office for providing the data and analysis support.
- Peter Bacchetti, Mary Croughan, Donna Ferreiro, and Diane Wara for providing feedback.