

DOCUMENT RESUME

ED 464 548

HE 034 863

AUTHOR Hagedorn, Linda Serra
TITLE Gender Differences in Faculty Productivity, Satisfaction,
and Salary: What Really Separates Us?
PUB DATE 2001-00-00
NOTE 8p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Faculty; *Equal Opportunities (Jobs); Gender
Issues; Higher Education; National Surveys; *Productivity;
*Satisfaction; *Sex Differences; *Teacher Salaries

ABSTRACT

Gender differences in faculty productivity, satisfaction, and salary were studied using 2 large datasets, the 1999 Higher Education Research Institute Faculty Survey (n=55,081) and the 1993 National Study of Postsecondary Faculty (n=25,780). Findings show very little evidence of gender differences in productivity, especially at the lower productivity levels. Although the gender gap remains at the higher productivity levels, among faculty at universities women are more likely than men to have published between one and 4 articles over the past 2 years. Overall job satisfaction for male and female faculty members was virtually identical, but differences in stress and rank are apparent. The area that shows the greatest difference between men and women is salary. Men and women are paid differently, although the reasons why are not so clear. The best way to change the culture and practices of higher education to enable female faculty members to be full-fledged members of the academy is to examine and adjust the reward structure to be fair and equitable for all. (SLD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

Gender Differences in Faculty Productivity, Satisfaction, and Salary: What Really Separates Us?

By Linda Serra Hagedorn

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

L. Hagedorn

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

This document has been reproduced as
received from the person or organization
originating it.

Minor changes have been made to
improve reproduction quality.

• Points of view or opinions stated in this
document do not necessarily represent
official OERI position or policy.

Gender Differences in Faculty Productivity, Satisfaction, and Salary: What Really Separates Us?

Linda Serra Hagedorn, Ph.D.
 Associate Professor & Senior Research Associate
 Lsh@usc.edu

Certainly we live in a gendered world (Wood, 1997). Despite the fact that the number of women on college campuses, both students and faculty members, continues to increase, the gender divide remains firm and intact (Blackburn & Lawrence, 1995; Finelstein, Seal, & Schuster, 1995). For example, while the number of female faculty has risen, they remain very under-represented among the higher faculty ranks, are over-represented among the non-tenure/non-tenure-track, and are more likely to be employed by institutions of lower prestige. These gender differences are frequently explained by differences in the perceived desire to teach over conducting research and publication (Collins, 1998).

But are the differences between male and female faculty members so easily contained in teaching/research variations? In these analyses I attempt to tease out gender differences in three specific areas; faculty productivity, faculty satisfaction, and faculty salary. To insure representation, I have used two very large national datasets; the 1999 Higher Education Research Institute (HERI) Faculty Survey, (n=55,081) and the 1993 National Study of Postsecondary Faculty (n=25,780).

First, let me set the stage by presenting Table 1 that provides some basic demographic comparisons of faculty across gender. The data is from the 1999 Survey by the Higher Education Research Institute.

Table 1. Comparison of Postsecondary Faculty by Gender

Variable	% within Males	% within females
African-American	1.8%	2.8%
Full Professor	39.5%	17.7%
% PT preferring to be FT	40.0%	49.1%
Research I	8.7%	5.7%
2-year college	30.3%	40.6%
Tenured	72.1%	27.9%
Dependent child	41.4%	34.5%
Married	86.2%	69.3%
Sexually harassed	2.7%	11.4%
Interrupted career for health/family	4.3%	24.8%

Note that women are less likely to be full professors and/or tenured, more likely to teach in a 2-year college, and if teaching part-time are more likely to prefer to be teaching full-time. The actual number and proportion of part-time faculty is difficult to ascertain, however it is generally accepted that women are more likely to be teaching part-time than full-time (Gappa, in press).



Productivity

With the differences in place, let us turn to productivity. Tables 2 and 3 provide comparisons (proportions) in research productivity for academic years 1972-73, 1989-90, and 1998-99 for all faculty regardless of institutional type and for university-faculty in universities only.

Table 2. Gender Differences (Percentage within gender) in Research Productivity Over Time

# Pubs/ 2 yrs	Women			Men			Gender Gap		
	72-73	89-90	98-99	72-73	89-90	98-99	72-73	89-90	98-99
0	73.8	57.3	48.6	53.2	42.1	38.1	20.6	15.2	10.5
1-2	17.6	23.9	27.0	23.6	25.6	26.4	-6.0	-1.7	-0.6
3-4	5.3	11.4	15.6	12.3	17.1	18.8	-7.0	-5.7	-3.2
5+	3.3	7.4	8.8	10.9	15.2	16.6	-7.6	-7.8	-7.8

(All Institutions)

Table 3. Gender Differences (Percentage within gender) in Research Productivity Over Time (Universities Only)

# Pubs/ 2 yrs	Women			Men			Gender Gap		
	72-73	89-90	98-99	72-73	89-90	98-99	72-73	89-90	98-99
0	60.9	29.5	22.5	32.6	19.9	16.7	28.3	9.6	5.8
1-2	24.8	30.0	28.7	27.8	25.7	24.7	-3.0	4.3	4.0
3-4	8.2	22.3	28.8	20.3	26.2	27.5	-12.1	-3.9	1.3
5+	6.0	18.3	20.0	19.4	28.2	31.1	-13.4	-9.	-11.1

As evidenced by the tables, productivity differences may not be as profound as generally considered. These findings agree with Olsen, Maple, and Stage (1995) who reported very little evidence of gender differences of interest and commitment to research.

Specifically, the tables reveal marked increases in productivity across the years for both men and women, especially at research universities. At the lower productivity levels, the gender gap has narrowed significantly. For example, among faculty publishing 1-2 articles per year, the gender gap has virtually disappeared. Although the gender gap remains at the high productivity level, among faculty at universities women are more likely than men to have published between one and four articles over the past two years.

To identify the predictors of productivity among female faculty, I regressed the two-year productivity total on a number of factors identified in the literature. The strongest predictors (standardized regression weights in parenthesis) were, years of age (-.10), employed in a university (.11), salary (.15), and expressed desire to perform research (.38). Interestingly, included among the non-significant predictors were having dependent children, marriage, career interruption for health or family, and home-related stress.

Satisfaction

The next area of investigation was satisfaction. First, I performed a one-way analysis of variance to understand differences by gender among satisfaction-related items. Table 4 provides the means, standard deviations, results of the F-test, and effect sizes for the comparisons. All of the comparisons were statistically significant.

Table 4. Gender Differences across Satisfaction-Related Variables

Variable	Male mean (S. D.)	Female Mean (S. D.)	F	Effect Size
Overall satisfaction	3.754 (.5586)	3.7157 (.5461)	33.85***	.02
Academic rank	1.93 (.97)	2.53 (.97)	2788.67***	.62
Job-related stress	1.755 (.3696)	1.914 (.3602)	1336.18***	.44
Home related stress	1.519 (.4829)	1.6102 (.5375)	233.54***	.18
Stress- care of elderly parent	1.31 (.58)	1.41 (.67)	200.72***	.16
Stress- personal finances	1.71 (.69)	1.78 (.73)	57.66***	.10

Although men report higher levels of overall satisfaction, the actual difference is only .023 of a standard deviation. Cohen (1988) suggests that effect sizes in the vicinity of .20 are small while those around .50 are moderate and those near .80 as large. Using this accepted guideline, an effect size of .023 can only be considered insignificant. On the other hand, the effect size for difference in rank can be interpreted as moderately large. Also of importance is the reported gender difference in job related stress.

Thus, although overall satisfaction between men and women is virtually identical, differences in stress and rank are evident. After regressing overall satisfaction on a group of predictors for female faculty, the results indicate that the most important variables are (standardized regression weights in parenthesis); salary (.18), being committed to students (.14), feeling women are treated fairly at the institution (.31), and job stress (-.31). Variables that were not significant include rank, tenure, discipline, and marital status.

Salary

Finding only minimal differences between men and women on productivity and overall satisfaction, the last investigation was that of salary. Rather than compare average salary in rank or by institutional type, the method described by Hagedorn (1996, 1998) was used. Using only the male sample, the natural log of salary is regressed on a series of salary producing behaviors (i.e., publications, institutional type, rank, tenure, etc.). Using the regression weights *derived from the male equation*, each female faculty member's predicted salary is calculated. The last step is to subtract the female faculty member's actual salary from that predicted using the male formula. The difference between the predicted and the actual salary is the gender-based wage

differential. The National Study of Postsecondary Faculty data was used for this analysis because it is a larger and more extensive database than that from HERI.

The equations revealed that 73% of the women had a positive wage differential, indicating that the majority of women were paid less than what the male equation would have predicted. The mean differential was \$8,681.

Taking the concept of a differential further, I compared the dollar value of various faculty behaviors. The dollar values were derived from separate regression equations for men and women where annual salary was the dependent variable. Table 5 provides the average (all other items held constant) value by gender.

Table 5. Dollar Values of Various Faculty Behaviors by Gender

	Male	Female	Difference
Journal articles	\$110	\$94	\$16
Weekly hrs. teaching	-\$95	-\$92	-\$3
Graduate students	\$1,435	\$3,099	-\$1,664
Years since degree	\$338	\$228	\$110
Marriage	\$440	-\$916	\$1,356
Rank	\$2,485	\$1,343	\$1,142
Books	\$23	\$75	-\$52
Tenure	\$1,272	\$1,105	\$167
Chair Department	\$2,012	\$2,376	-\$364
Yrs in current position	-\$88	\$29	-\$117

Note that while female faculty are rewarded more generously for teaching graduate level courses, males are rewarded more for higher rank. Interestingly, while marriage appears to provide a small return to males (\$440), it is disadvantageous to salaries for females.

Conclusion

We do live in a gendered world. Although employed in the same profession, there are differences in the academic lives of male and female faculty members. However, the differences cannot be totally blamed on differences in productivity level. Although men and women faculty publish at slightly different rates, an in-depth comparison reveals much more similarity than difference. Similarly, men and women faculty report similar levels of job satisfaction. However the area that cries the loudest for differences by gender remains salary. Why the gender differences are so stubborn is not easily answered, but the fact remains that women and men are paid differently. Another finding is the large gender differences in job-related stress. Interestingly, Hagedorn (1996) found a strong relationship between job stress and gender-based wage differentials that implied that paying women less than that of their equal male counterparts causes job stress.

The policy implications are quite clear. Although assistance to be productive in research as well as steps to increase job satisfaction are always welcome by faculty members, regardless

of gender, true gender differences are lurking mainly in salary issues. Therefore, it appears the best way to change the culture and practices of higher education to enable female faculty members to be full-fledged members of the academy is to closely examine and adjust the reward structure to be fair and equitable for all.

References

- Blackburn, R. T., & Lawrence, J. H. (1995). Faculty at work: Motivation, expectation, satisfaction. Baltimore: The Johns Hopkins University Press.
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences. (2nd. ed.). Hillsdale, NJ: Erlbaum.
- Collins, Lynn H. (1998). Competition and Contact: The Dynamics Behind Resistance to Affirmative Action in Academe. In L. H. Collins, J. C. Chrisler, & K. Quina (Eds.), Career Strategies for Women in Academe: Arming Athena. Thousand Oaks, CA: Sage Publications.
- Finkelstein, M. J., Seal, R. K., & Schuster, J. H. (1998). The new academic generation: A profession in transformation. Baltimore: Johns Hopkins University Press.
- Gappa, J. M. (in press). The new faculty majority: Satisfaction among the non-tenure eligible. In L. S. Hagedorn (Ed.), Positive Outcomes: Satisfaction of postsecondary faculty and staff.
- Hagedorn, L. S. (1996). Wage equity and female faculty job-satisfaction: The role of wage differentials in a job satisfaction causal model. Research in Higher Education, 37(5), 569-598.
- Hagedorn, L. S. (1998). Implications to postsecondary faculty of alternative calculation methods of gender-based wage differentials. Research in Higher Education, 39(2), 143-162.
- Olsen, D., Maple, S., & Stage, F. (1995). Women and minority job satisfaction: Professional role interests, professional satisfactions, and institutional fit. Journal of Higher Education, 66(3), 267-293.
- Wood, J. T. (1997). Gendered lives. Belmont, CA: Wadsworth Publishing Co.



U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)



#2034 803

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: <i>Gender Differences in Faculty Productivity, Satisfaction, + Salary: What Really Separates Us?</i>	
Author(s): <i>Hagedorn, Linda Serra</i>	
Corporate Source: <i>University of Southern California</i>	Publication Date:

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1



The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A



The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B



Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) and paper copy.

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only.

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only.

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, please

Signature: <i>Linda S. Hagedorn</i>	Printed Name/Position/TITLE: <i>Linda S. Hagedorn - Assoc. Prof.</i>	
Organization/Address: <i>USC - RSOE</i>	Telephone: <i>213-740-6772</i>	FAX: <i>213-740-3889</i>
<i>3470 Trousdale Pkwy</i>	E-mail Address: <i>Lsh@usc.edu</i>	Date: <i>4-15-02</i>
<i>Los Angeles, CA 90089-0031</i>		

(over)



III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:

Address:

Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:

Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility

1100 West Street, 2nd Floor
Laurel, Maryland 20707-3598

Telephone: 301-497-4080

Toll Free: 800-799-3742

FAX: 301-953-0263

e-mail: ericfac@inet.ed.gov

WWW: <http://ericfac.piccard.csc.com>