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# Faculty at Early, Middle, and Late Career Stages: Gender Effects on Academic Work Experiences

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# Research Questions

- How do male and female faculty differ by career stage on measures of work effort, satisfaction, productivity, and compensation?
- What are the career trends for male and female faculty across career stages? Are these trends consistent over different definitions of career stages?

# Data

- Data source: The 2004 National Study of Postsecondary Faculty (NSOPF-04) (<http://nces.ed.gov/surveys/nsopf/>)
- Inclusion Criteria: Full-time faculty at four-year institutions of higher education
- Data Analysis:
  - Aggregate data available through use of the web-based Data Analysis System (DAS) developed by National Center for Educational Statistics (NCES).
  - The DAS has employed a multistage weighting procedure to correct for biases in the representation of institutions in the data set and individual patterns of nonresponse.
  - NCES provides a t-test tool (<http://nces.ed.gov/dasol/help/ttest.asp>)

# Measures

## Career Stages

- Age
- Years of teaching in higher education
- Years at current institution

## Items

- Work hours
- Productivity
- Satisfaction and equity perceptions
- Compensation

# Data: An Example

Faculty Age in 2004	Early Career (39 years or less)		
	Female	Male	
	Mean (SE)	Mean (SE)	t value
Work Hours			
Paid tasks at institution	46.08 (.32)	47.72 (.39)	-3.25*

# Data: Another Example

Years of teaching in higher education		Early Career (6 years or less)	Mid-Career (12-20 years)	Late Career (25 years or more)	Early career vs. Mid-career	Mid-career vs. Late career	Early career vs. Late career
Satisfaction and perception of equity		Mean (SE)	Mean (SE)	Mean (SE)	t value	t value	t value
Job overall	Female	1.72 (.02)	1.79 (.03)	1.72 (.03)	-1.94	1.65	0
	Male	1.75 (.02)	1.81 (.02)	1.65 (.02)	-2.12*	5.66*	3.54*

# Comparisons of Male and Female Faculty Career Stage across Definitions of Career (1)

Work Hours	Comparisons by Gender across Definitions of Career Stages	Consistent Findings across Definitions of Career Stages
% time spent on research activities	<b>F&lt;M at E;</b> <b>F&lt;M at MD;</b> <b>F&lt;M at L;</b>	Female faculty at each career stage reported a lower percentage of time spent on research than their male counterparts.
Productivity	Comparisons by Gender across Definitions of Career Stages	Consistent Findings across Definitions of Career Stages
Recent articles, refereed journals	<b>F&lt;M at E;</b> <b>F&lt;M at MD;</b> <b>F&lt;M at L;</b>	Female faculty at each career stage reported a lower number of recent articles published in refereed journals than male faculty at the corresponding career stage.
Recent presentations	<b>F&lt;M at E;</b> <b>F&lt;M at MD;</b> <b>F&lt;M at L (except the late career stage defined by years in higher education);</b>	Female faculty at each career stage reported delivering fewer presentations than male faculty at the corresponding career stage, except the late career stage defined by years in higher education.

# Comparisons of Male and Female Faculty Career Stage across Definitions of Career (2)

<b>Satisfaction and Perception of Equity</b>	<b>Comparisons by Gender across Definitions of Career Stages</b>	<b>Consistent Findings across Definitions of Career Stages</b>
Job overall	NS	Both female and male faculty at each career stage reported a similar level of satisfaction with their job overall.
Salary	<b>F&gt;M at varied career stage</b>	Within each definition of career, there is at least one stage in which female faculty are less satisfied with salary than are male faculty; however, the career stage at which this occurs varies.
Female faculty are being treated fairly	<b>F&gt;M at E;</b> <b>F&gt;M at MD;</b> <b>F&gt;M at L;</b>	Female faculty at each career stage agree less with this statement than male faculty at the corresponding career stage.

<b>Compensation</b>	<b>Comparisons by Gender across Definitions of Career Stages</b>	<b>Consistent Findings across Definitions of Career Stages</b>
Base salary from institution (\$)	<b>F&lt;M at E;</b> <b>F&lt;M at MD;</b> <b>F&lt;M at L;</b>	Female faculty at each career stage reported a lower base salary than that reported by male faculty.



# Trends across Definitions of Career Stages for Female and Male Faculty (1)

<b>Work Hours</b>	<b>Comparisons by Career Stage across Definitions of Career</b>	<b>Consistent Findings across Definitions of Career</b>
% time spent on research activities	<b>E&gt;L for both genders</b>	Both male and female faculty at the early career stage reported a higher percentage of time spent on research than faculty at the late career stage.
% time spent on instruction	<b>E&lt;L, MD&lt;L for both genders</b> (except females defined by years in higher education and females at the late middle career stage defined by age)	Both male and female faculty spend an increasing amount of time on instruction from early and middle to late career stage, except for female faculty defined by years in higher education and female faculty at the late middle career stage defined by age.
thesis and dissertation committees	<b>NS for both genders</b> (except female faculty defined by age)	Both male and female faculty at each career stage reported spending a similar number of hours per week on thesis and dissertation committees, except female faculty defined by age.

<b>Productivity</b>	<b>Comparisons by Career Stage across Definitions of Career</b>	<b>Consistent Findings across Definitions of Career</b>
Recent articles, refereed journals	<b>MD&gt;E for both genders</b>	Both male and female faculty reported publishing significantly more articles in refereed journals at the middle career stage than at the early career stage.

# Trends across Definitions of Career Stages for Female and Male Faculty (2)

Satisfaction and Perception of Equity	Comparisons by Career Stage across Definitions of Career	Consistent Findings across Definitions of Career
Job overall	<b>E&gt;L, MD&gt;L for both genders</b> (except female faculty defined by years of teaching in higher education)	Generally both male and female faculty in the late career stage are most satisfied with job overall compared with faculty in the other career stages, except female faculty defined by years of teaching in higher education,
Female faculty are being treated fairly <sup>b</sup>	<b>E&lt;L, E&lt;MD, Min=E for female faculty</b>	Female faculty agree more with the statement “female faculty are treated fairly” in the early career stage compared to the other career stages.
	<b>NS for male faculty</b> (except male faculty defined by age)	Male faculty reported similar levels of agreement with the statement at each career stage, excluding career defined by age

Compensation	Comparisons by Career Stage across Definitions of Career	Consistent Findings across Definitions of Career
Base salary from institution (\$)	<b>E&lt;MD&lt;L;</b> <b>Min = E, Max = L</b> <b>for both genders</b>	For both female faculty and male faculty, the amount of base salary increases from the early career stage to the late career stage.

# Main Findings (Gender Comparisons)

## **Work effort:**

- Male faculty spend more time on research
- Female faculty spend more time on instruction

## **Productivity:**

- Male faculty publish more and make more presentations than female faculty

## **Satisfaction:**

- Female faculty at each career stage agree less that “female faculty are treated fairly” than male faculty at the corresponding career stage

## **Compensation:**

- Female faculty earn less than male faculty at each career stage

# Gender Comparisons

- **Female faculty work fewer hours than male faculty on paid tasks at their institution in early career**
- **Female faculty spend a lower percentage of time on research at each career stage**
- **Female faculty spend a greater percentage of time on instruction in all career stages**
- **Female faculty spend more time with advisees, but the career stage at which this occurs is not stable across definitions of career**
- **Female faculty produce fewer publications at each career stage**
- **Female faculty make fewer presentations, particularly in early and mid-career stages**
- **Female faculty are less satisfied with workload from mid to late career**
- **Female faculty are less satisfied with salary, but the career stage at which this occurs is not consistent across career definitions**
- **Female faculty are more satisfied with benefits in early to mid-career**
- **Female faculty agree less with the statement “Female faculty are treated fairly” than do male faculty at all career stages**
- **Female faculty earn less than male faculty in all career stages**

# Main Findings (Career trends)

## **Work effort:**

- Both male and female faculty at the early career stage reported spending more time on research and with advisees than faculty at the late career stage.

## **Productivity:**

- Both male and female faculty reported publishing significantly more articles in refereed journals at the middle career stage than at the early career stage.

## **Satisfaction:**

- Generally, both male and female faculty in the late career stage are most satisfied with job overall compared with faculty in other career stages.

## **Compensation:**

- For both female and male faculty, the amount of base salary increases from the early career stage to the late career stage.

# Pattern Comparisons Across Career Definitions

- **Both male and female faculty spend an increasing amount of time on administrative committees from early to mid-career, but differences from mid to late-career are inconsistent across definitions of career**
- **Both male and female faculty spend a decreasing percentage of time on research from early to later career stages**
- **Both male and female faculty devote the greatest percentage of time to instruction during the late career stage**
- **Both male and female faculty experience a rise in productivity after the early career stage**
- **Both male and female faculty are generally least satisfied during mid-career, with the exception of satisfaction with authority to make decisions, which occurs in early career stage**
- **Salaries rise throughout the career for faculty of both genders**
- **In early career, female faculty agree more that “Female faculty are treated fairly,” compared to later in their careers**

# Conclusions

- Significant differences regarding the work effort, productivity, satisfaction, and compensation of male and female faculty at each career stage can be identified consistent across three definitions of career stages
- Important trends across career stages can be identified, using three definitions of career stages, applying to both males and females, or to either

# Contributions and Limitations

- The findings provide insights for institutions of higher education concerned with the recruitment, advancement and retention of male and female faculty
- The findings illustrate the use of a secondary dataset to study gender equity in academic institutions
- Limitations: Unable to access individual-level data