STUDY ON
"EFFECTS OF DEPARTMENTAL DEMOGRAPHY ON FACULTY MEMBERS' PERCEPTIONS OF CLIMATE AND INDIVIDUAL INTEGRATION"

Effects of Departmental Demography on Faculty Members' Perceptions of Climate and Individual Integration*

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Effects of Departmental Demography on Faculty Members' Sense of Integration and Perceived Climate

Abstract

In this study, we use data from Cornell's 2005 Faculty Work-Life Survey to examine the effects of a number of aspects of departments' demographic composition on faculty members' perceptions of departmental climate and personal integration. Our findings indicate significant differences between men and women on these outcome variables, and suggest that men's perceptions are much more influenced by department demography than those of women. We discuss the implications of these findings for further research on this topic.

Background

In 1987, the proportion of women among full-time faculty members across all types of higher education institutions in the U.S. was 27 percent; by 1992, it had risen to a little over 33 percent; and by 2003, it had again risen to just under 40 percent. The rate of change was noticeably slower in some parts of the occupation, however. For example, among research universities—both higher status and higher paying than other types of higher education organizations—women represented only about 20 percent of the full-time faculty members in 1987, rising to approximately 30 percent by 2003. Likewise, the rate of change in the proportion of women varied considerably across fields. In 1987, women made up 45 percent of the full-time faculty in education, 33 percent in humanities, 17 percent in the natural sciences and only 2 percent in engineering. By fall of 2003, the proportion in education had risen to 61 percent, in humanities to 55 percent, in natural sciences to 26 percent, and in engineering to 9 percent (National Center for Education Statistics, 1992, 1999, 2005).

As these numbers indicate, gender desegregation has progressed steadily in academia over the last two decades, but the change has been slow and women remain relatively underrepresented in certain areas and in certain types of institutions. Research by Ehrenberg (1991) examining the period from 1977 to 1985 indicates that women's share of new doctorates rose at three times the rate that their share of new hires did, and thus suggests that the pace of desegregation reflects more than a simple "pipeline" problem (see also Kulis, Sicotte and Collins, 2002).

An alternative explanation for the slow rate of change is that it is due, at least in part, to an endogenous relationship with low rates of women's representation; that is, a

small proportion of women in a work setting may contribute to a social climate that works against the hiring and retention of additional women. Retention of women faculty is a troublesome issue for many academic organizations. Research has shown that the rate of turnover among women is often higher than among their male faculty counterparts (Menges and Exum,1983; Tolbert, Simon, Andrew and Rhee, 1995), and that this can offset higher rates of female hires, thus becoming a primary source of women's ongoing low levels of representation (Bikhchandani, Lawrence, Longstaff and Scott, 2006).

Classic models of faculty attrition have shown job satisfaction to be strongly, negatively related to individuals' self-reports of intentions to leave their current employing institution (Matier, 1990; Smart, 1990). And in contrast to the common finding that employed women are generally characterized by much higher levels of job satisfaction than men – despite lower wages and other rewards (Crosby, 1982; Ridgeway, 1997; Hull, 1999) – some work suggests that the reverse holds among faculty: women academics are significantly less satisfied than their male colleagues (Clarkberg and Einarson, 2007). Extant studies of the determinants of job satisfaction among women faculty have linked this to a variety of psychological factors, including perceptions of chilly departmental climate and sense of low personal integration and influence within their department (August and Waltman, 2004; Settles, Cortina, Malley and Stewart, 2006). However, this work has often focused only on female faculty (leaving open the question of whether male faculty have similar perceptions of climate and personal integration as their female counterparts), and has left the antecedents of such perceptual and attitudinal variations among individuals largely unexplored.

Drawing on the literature on organizational demography, in this analysis we explore the impact of one potential antecedent of these attitudes, the representation of women among regular full-time faculty members in a department. Organizational studies of the demographic composition of work groups have examined a variety of outcomes, including job satisfaction and turnover intentions. The findings from such studies are mixed: some work indicates women's job satisfaction increases as the proportion of women in their work group increases (Konrad, Winter and Gutek, 1992); other studies have found that increases in the proportion of women in a group have little impact on women's satisfaction, but *decrease* men's satisfaction (Wharton and Baron, 1987; Tsui, Egan and O'Reilly, 1992). In this research, we focus on the impact of departmental demography on two attitudinal outcomes that research on faculty suggested as important antecedents of job satisfaction and turnover intentions (Matier, 1990; Smart, 1990): individuals' perceptions of the department climate and their sense of being integrated into the department.

Methods

Our analyses are based on data from the 2005 Cornell Work-Life Survey of Faculty, a survey sent to all Cornell faculty members in Fall 2005. The survey had an overall response rate of 65 percent, and respondents were generally representative of the survey population, although males and full professors were slightly underrepresented among respondents. (For a fuller description of respondents' characteristics, see Cornell Faculty Work-Life Survey, 2006.)

For our dependent variables, we constructed two scales. The first, measuring perceptions of department climate, was based on five, five-point anchored items tapping

different dimensions of member relations; it had a reliability coefficient of .83. The second scale measured individuals' perceptions of their own integration or acceptance within the department. This scale contained four 5-point items (two reversed-coded), and had a reliability score of .78. (See Table 1 for items and loadings.)

We examined a number of measures of demographic composition as predictor variables. One was the overall proportion of women among tenure-track faculty in the department. With only two categories (male/female), this measure is virtually identical to the Herfindahl index which is often used in demographic studies (e.g., Tsui, Egan and O'Reilly, 1992). We also included a squared measure of this variable, since some studies have found a curvilinear relation between a proportionate measure and outcomes (e.g., Tolbert, Simons, Andrews and Rhee, 1995). In addition, to examine whether *changes* in women's representation in a department had an impact on members' perceptions of departmental relations, we included a dummy variable coded "1" if the absolute number of women in the department had declined over the preceding five years and one indicating that a department had gained two or more women during that time span. Finally, in order to assess potential "faultline" effects (Lau and Murnighan, 1998, 2005; Li and Hambrick, 2005), we constructed a dummy variable to indicate the clustering of women at lower ranks; this variable was coded "1" if all full professors in a department were male.

In addition, our analyses included a number of other individual, departmental and discipline-indexing measures. At the individual level, we included a dummy variable for sex, coded "1" for females, dummy variables for individuals' rank (with full professors serving as the reference category to assistants and associates), and base salary, logged to

correct for skewness. Controls for department level effects included a measure of size (total number of tenure-track faculty members) and a measure of change in size over the last five years. Finally, we included a dummy variable to indicate disciplines identified with science, technology, engineering and mathematics (STEM). Research suggests that these fields are defined as "male," which may create distinctive dynamics involving gender composition (Fox, 1991).

To analyze the effects of the predictor variables on our attitudinal outcome measures, we conducted a series of seemingly unrelated regressions (SUR). These models are appropriate when estimating two or more outcome variables whose error terms are likely to be correlated (Zellner, 1963).

Findings

Table 2 provides the coding, means, standard deviations and intercorrelations of the variables used in our analyses. Note that the high correlation between our two dependent variables (.63) supports our use of SUR models.

Table 3 shows the mean scores and standard deviations for our dependent variables, department climate and integration, broken down by gender, and by gender and rank. Overall, the average female's score (3.19 on the climate measure, and 3.21 on integration) on these scales is significantly lower than the average male's (3.51, and 3.65 respectively). These differences are relatively small among assistant professors (i.e. only about 0.22 to 0.23 on the two measures), and on the climate measure, statistically insignificant. The gender differences are largest for associate professors, with women at that rank averaging 0.41 and 0.53 points lower than their male counterparts on the climate and integration scales respectively.

We examined these differences more systematically with a series of regression models. We began by estimating models using a data set with male and female faculty respondents combined. Table 4 presents a series of models of the determinants of climate perception. The first model contains our main control variables (sex, rank, salary, department size and change in department size), along with measures of changes in the number of women in the department in recent years. The second model includes a linear measure of proportion of women, and the third model adds a quadratic term in order to assess potential non-linear effects. The fourth model includes our faultline measure, and finally, the last model includes the dummy variable for STEM disciplines. For brevity's sake, here we focus on the final model containing all predictor variables.

Notably, net of all other variables, the negative effects of gender persist in Model V: Overall, women have much more unfavorable views of the climate in their departments than do men. In this model, controlling for all the other variables, women still average about a quarter of point lower in their perceptions of departmental climate than do men. (This compares to about a third of point difference without controls, as illustrated in Table 3.)

The significant coefficient of 0.048 for the measure of changes in department size in Model V of Table 4 suggests that collegial relations improve during periods of departmental expansion—or, perhaps, that more collegial departments are ones that tend to expand over time. Interestingly, the strong positive coefficient for the STEM indicator (b = 0.253) indicates that individuals in science and engineering related fields tend to perceive their department climate to be more favorable than those in other disciplines.

Apart from these influences, the measures of demographic composition have significant effects on perceptions of climate. The significant negative coefficient for the measure of proportion of women (b = -1.984), in conjunction with the significant positive coefficient for the counterpart quadratic term (b = 3.344), indicates that when a department is less than about 30% female,[1] increases in the proportion of women lead to *less* favorable views of departmental climate; after that point, increasing proportions improve perceptions of departmental relations (see Tolbert, Simons, Andrews and Rhee, 1995 for a similar finding). In addition, the faultline measure is significant and negative: Members of departments in which the top ranks are held exclusively by men tend to have more negative views of their departmental climate.

Table 5 presents the counterpart models predicting individuals' perceptions of their personal integration into their departments. Again, we focus attention on the last model which contains all the predictor variables. Controlling for the other variables in the model including rank, individuals' sense of integration in their department is strongly, positively related to their salary level (b = 0.595, t=4.51). It may be that salary increases the sense of integration, or that faculty who have positive feelings about their work are also those who are more highly rewarded. We also find that the sense of integration is linked to the size of the department (b = -0.008, t = -2.84): faculty in larger departments are significantly *less* likely to have a high score on this measure.

Controlling for these and other factors, women exhibit significantly lower levels of integration than their male counterparts. Interestingly, the demographic composition measures have relatively less effect on perceptions of personal integration than they do

[1] To find the minima, we differentiated $-1.984x + 3.344x^2$ with respect to x. Setting $-1.984 + 6.688x$ equal to zero, we find the minima occurs when x—the proportion female—is equal to 0.29665.

on perceived climate. Although the proportional measures indicate the same inverse U-shaped curvilinear pattern as found in the analysis of perceived climate (with the curve reaching a minima at 36.9% female), neither the faultline measure nor the indicators of changes in the representation of women in the department over time attain significance as predictors of integration.

The results thus far indicate that, even controlling for a variety of individual and departmental factors, women faculty perceive the climate in their departments to be less collegial and feel less personally integrated or influential within their departments than men. To see to what extent such gender differences reflect differential responses to demographic and other conditions, we conducted separate analyses for men and women. Table 6 presents the full SUR models for both dependent variables run separately for men and women..

Focusing first on the left half of Table 6, we can compare the effects of the predictor variables on perceived personal integration for men and women. For both, the strongest predictor of integration is salary (with $b = 0.625$, $t = 4.30$ and $b = 0.653$, $t = 2.22$, for men and women respectively): the more individuals earn, the more they also tend feel integrated into their department. Department size has a negative effect on this for both men and women in our sample, but the coefficient attains statistical significance only in the analyses for women. Men who are members of STEM departments appear to feel significantly more integrated than men in other departments; this does not hold for women faculty, however. In these analyses, the demographic composition measures have no effects once other variables are taken into account, although analyses not shown here

suggest that without a control for STEM discipline, the effects of the proportion of women on men's sense of integration is significantly negative.

Looking at the right half of Table 6, we see that changes in department size have a significant, positive effect on both men's and women's perceptions of the climate in their departments (b_{men} = 0.040, t = 2.43; b_{women} = 0.073, t = 2.29). This is, however, the *only* significant predictor of women's perceptions of the climate. In contrast, men's perceptions of climate are very much affected by demographic conditions. In departments where the absolute number of women has increased, men are likely to hold more negative perceptions of the climate compared to those in departments where the number of women has remained stable. The inverse U-shaped relation between the proportion of women in a department and favorability of the perceived climate found in the previous analyses appears to have primarily reflected men's reactions (with the minimal in the men's model again appearing at close to 30% female). Somewhat surprisingly, men are also more likely to react negatively, in terms of perceived climate, to the presence of a faultline; although the coefficient on this variable in the analyses of women is also negative, it does not attain significance as it does in the analyses of men. All else being equal, men in STEM departments perceive their departmental climate more favorably than do men in non-STEM departments; this disciplinary effect is not found in the analysis of women.

In summary, in our analyses of both integration and climate, variations in demography appear more influential on men's attitudes than women's.

Discussion

Despite the voluminous literature on organizational demography that has been produced in the years since the publication of Kanter's (1977) seminal study, very little attention has been given to theorizing about or empirically exploring the potentially differing effects of variations in group composition on men's and women's perceptions of work and work attitudes (Tolbert, Graham and Andrews, 1999). This is particularly surprising since several empirical studies have provided evidence of such differences (Wharton and Baron, 1987; Tsui, Egan and O'Reilly, 1992); these studies suggest that men are apt to react more to demographic variations than women do. Kanter's initial study (1977), which posited a series of processes set in motion by the entry of women into a previously all-male group – consciousness of differences, formation of in-group solidarity, out-group role-casting – which then affected the social climate that women experienced, implicitly suggested such differences. Little theoretical effort has been devoted to following up on these arguments, however.

The analyses presented here are consistent with prior work that has documented gender differences in reactions to demographic variation: Male faculty's perceptions of department climate, as well as their sense of personal integration (to a lesser extent) are much more directly affected by the increasing representation of women in the department, much more so than women's. The questions of why this is so, and whether it is related to women's persistently more negative perceptions of departmental climate and sense of integration than men's, are not easily answered by current literature in this area.

One potential explanatory framework is provided by social identity theory (SIT) and its complement, self-categorization theory (SCT), from social psychology (Brewer,

1979, 1991; Hogg and Abrams, 1988; Tajfel and Turner, 1986). This work suggests that individuals are inclined to identify with and support others who are demographically similar (to define them as part of their in-group), as long as negative status is not attached to the common demographic characteristic. When a demographic characteristic is assigned a negative status, however, identification as a member of a group defined by that characteristic is assumed to be threatening to individuals' self-esteem; therefore, the characteristic is ignored as a salient basis for identity.

Sociological work in the tradition of expectations states has provided ample evidence that "female" is often a de-valued status in our society (e.g., Berger, Rosenhotlz and Zeldtich, 1980; Pugh and Wahrman, 1983; Ridgeway, 1997). In this context, women may be less likely to identify with other women and thus be less affected by variations in the proportion of women in their work group. Indeed, the addition of women to their group could even be seen as a threat to their "optimal distinctiveness" insofar as their primary identity is with an existing group in which they are a "distinctive" minority (Brewer, 1991). Insofar as male is a valued status, it is more likely to serve as a salient basis for in-group formation, and the addition of women to a group is apt to set in motion in-group/out-group behaviors so well documented by SIT researchers (Tajfel and Turner, 1986). These behaviors, in turn, have a negative effect on women's perceptions of the social climate and their sense of integration within the group, which is only indirectly related to the proportion of women in the department.

Empirical examination of these proposed relations, however, poses thorny statistical problems created by endogeneity. Additional research, based on data collected over a

longer period of time, may be able to use constructed instrumental variables to begin to untangle and assess these complex relationships.

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Table 1: Climate and Integration Scales – Items and Loadings

Dependent Variables (Scales)	**Loading**
Climate Scale, Cronbach's alpha = 0.83	
Please rate the climate of your department/unit on the following continua…	
Collegial - Contentious	0.72
Cooperative - Competitive	0.72
Conciliatory - Aggressive	0.70
Seeks collective good - Seeks individual advantage	0.69
Cohesive - Fragmented	0.59
Integration Scale, Chronbach's alpha = 0.78	
Please indicate your agreement or disagreement with the following statements concerning your relationships with your colleagues within the department/unit of your primary tenure home:	
I feel comfortable sharing my views in faculty meetings.	0.43
I am ignored in my department/unit.	-0.62
I have to work harder than my colleagues to be perceived as a legitimate scholar	-0.63
I feel my area of research or scholarship is well-accepted by colleagues	0.61

Table 2: Variable Means, Standard Deviations, and Correlations

	Descriptives			Correlations												
	Coding	Mean	SD	Y1	Y2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
Scales																
Y1 Climate	1-4.9	3.53	0.82	1.00												
Y2 Integration	1-5	3.43	1.01	0.63	1.00											
Predictor variables																
X3 Female	0,1	0.27	0.45	-0.14	-0.24	1.00										
X4 Assistant	0,1	0.19	0.39	0.07	-0.11	0.15	1.00									
X5 Associate	0,1	0.25	0.44	-0.16	-0.19	0.12	-0.25	1.00								
X6 Salary (logged)	10.8-12.9	11.51	0.31	0.09	0.29	-0.23	-0.43	-0.35	1.00							
X7 Dept. size	5 - 49	24.35	12.02	0.03	-0.03	-0.04	0.02	-0.08	0.30	1.00						
X8 Chg. In size	-4 - 7	1.16	2.71	0.17	0.09	-0.09	0.09	-0.11	0.24	0.20	1.00					
X9 Lost women	0,1	0.08	0.28	-0.08	0.02	0.01	-0.04	0.01	0.09	-0.02	-0.16	1.00				
X10 Gained women	0,1	0.29	0.45	-0.06	-0.05	0.05	0.06	-0.01	0.06	0.32	0.13	-0.20	1.00			
X11 Prop. female	0 - 0.73	0.24	0.14	-0.15	-0.17	0.34	0.04	0.10	-0.21	-0.08	-0.25	0.06	0.22	1.00		
X12 Prop. female sq.	0 - 0.53	0.08	0.09	-0.10	-0.11	0.34	0.06	0.08	-0.21	-0.13	-0.21	0.00	0.16	0.94	1.00	
X13 Faultline	0,1	0.20	0.40	-0.04	0.02	-0.13	-0.01	0.00	0.05	-0.30	0.00	-0.04	-0.02	-0.37	-0.30	1.00
X14 STEM	0,1	0.55	0.50	0.14	0.13	-0.19	-0.08	-0.04	-0.02	-0.03	0.05	-0.25	0.06	-0.51	-0.45	0.20

Table 3: Means of Climate and Integration Scales by Sex, and Sex and Rank

	Men			Women			Difference: Women-Men		
	Mean	SD	n	Mean	SD	n	Diff	t	df
Total									
Climate Scale	3.51	0.99	632	3.19	1.07	235	-0.32	4.125 ***	866
Integration Scale	3.65	0.77	619	3.21	0.87	230	-0.44	7.085 ***	848
Assistant Professors									
Climate Scale	3.66	0.89	101	3.43	0.93	65	-0.23	1.540	165
Integration Scale	3.43	0.79	96	3.21	0.75	66	-0.22	1.810 *	161
Associate Professors									
Climate Scale	3.28	0.97	138	2.87	1.14	77	-0.41	2.800 ***	214
Integration Scale	3.45	0.78	137	2.92	0.87	74	-0.53	4.510 ***	210
Full Professors									
Climate Scale	3.55	1.00	395	3.29	1.04	93	-0.26	2.260 **	487
Integration Scale	3.78	0.73	386	3.46	0.89	90	-0.32	3.530 ***	475

*** $p < 0.001$; ** $0.001 < p < 0.01$; * $0.01 < p$ 0.05

Table 4: SUR Models Predicting Perceived Climate: Men and Women Combined

	I			II			III			IV			V		
Variables	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t
Individual attributes															
Female	-0.256	0.08	-3.12 **	-0.237	0.09	-2.77 **	-0.246	0.09	-2.87 **	-0.250	0.09	-2.93 **	-0.249	0.09	-2.94 **
Assistant	0.109	0.13	0.88	0.102	0.13	0.82	0.091	0.12	0.74	0.139	0.13	1.11	0.204	0.13	1.62
Associate	-0.230	0.10	-2.29 *	-0.233	0.10	-2.31 *	-0.230	0.10	-2.29 *	-0.196	0.10	-1.95	-0.159	0.10	-1.58
Salary (logged)	0.023	0.17	0.14	0.010	0.17	0.06	-0.012	0.17	-0.07	0.043	0.17	0.26	0.122	0.17	0.71
Departmental attributes															
Dept. size	0.002	0.00	0.62	0.002	0.00	0.58	0.003	0.00	0.92	-0.001	0.00	-0.16	0.000	0.00	0.07
Chg. Size	0.051	0.01	3.62 ***	0.049	0.02	3.33 ***	0.046	0.02	3.14 **	0.042	0.02	2.86 **	0.048	0.02	3.26 ***
Lost women	-0.284	0.13	-2.20	-0.273	0.13	-2.11 *	-0.242	0.13	-1.86	-0.244	0.13	-1.89	-0.168	0.13	-1.28
Gained women	-0.228	0.08	-2.73	-0.207	0.09	-2.37 *	-0.202	0.09	-2.31 *	-0.152	0.09	-1.72	-0.211	0.09	-2.33 *
Prop. female				-0.219	0.29	-0.75	-2.107	0.80	-2.62 **	-2.785	0.83	-3.35 **	-1.984	0.87	-2.27 *
Prop. female sq.							3.187	1.26	2.52 *	3.754	1.27	2.95 *	3.344	1.27	2.62 **
Faultline										-0.288	0.10	-2.90 *	-0.272	0.10	-2.75 **
STEM													0.253	0.09	2.86 **
Constant	3.248	1.94	1.67	3.444	1.96	1.76	3.892	1.96	1.99	3.492	1.96	1.79	2.250	1.99	1.13
R square	0.07			0.07			0.08			0.09			0.10		
Chi square	58.26 ***			58.87 ***			65.71 ***			74.81 ***			83.78 ***		

*** p < 0.001 ; ** 0.001 < p < 0.01 ; * 0.01 < p 0.05

Table 5: SUR Models Predicting Perceived Integration: Men and Women Combined

	I			II			III			IV			V		
Variables	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t
Individual attributes															
Female	-.283	0.06	-4.49 ***	-.248	0.07	-3.76 ***	-.253	0.07	-3.85 ***	-0.254	0.07	-3.88 ***	-.254	0.07	-3.88 ***
Assistant	-.058	0.10	-0.61	-.071	0.10	-0.74	-.078	0.10	-0.82	-0.061	0.10	-0.63	-.032	0.10	-0.33
Associate	-.157	0.08	-2.03 *	-.162	0.08	-2.10	-.160	0.08	-2.08 *	-0.148	0.08	-1.91	-.132	0.08	-1.69
Salary (logged)	.578	0.13	4.46 ***	.554	.130	4.26 ***	.540	0.13	4.16 ***	0.561	0.13	4.30 ***	.595	0.13	4.51 ***
Departmental attributes															
Dept. size	-.007	0.00	-2.86 **	-.007	0.00	-2.96 **	-.007	0.00	-2.66 **	-0.008	0.00	-2.97 **	-.008	0.00	-2.84 **
Chg. Size	.012	0.01	1.10	.007	0.01	0.61	.005	0.01	0.46	0.004	0.01	0.32	.006	0.01	0.56
Lost women	.042	0.10	0.42	.062	0.10	0.62	.082	.100	0.81	0.080	0.10	0.81	.114	0.10	1.12
Gained women	-.019	0.06	-0.29	.020	.067	0.30	.023	0.07	0.35	0.042	0.07	0.61	.016	0.07	0.23
Prop. female				-.412	0.22	-1.86	-1.59	0.62	-2.58 **	-1.840	0.64	-2.87 **	-1.489	0.68	-2.20 *
Prop. female sq.							1.989	0.97	2.05	2.196	0.98	2.24 *	2.016	0.99	2.04 *
Faultline										-0.105	0.08	-1.37	-.098	0.08	-1.28
STEM													.111	0.07	1.62
Constant	-2.84	1.49	-1.90	-2.467	1.503	-1.64	-2.188	1.51	-1.45	-2.334	1.508	-1.55	-2.879	1.54	-1.87
R square	0.13			0.13			0.13			0.14			0.14		
Chi square	110.68 ***			114.63 ***			119.44 ***			121.62 ***			124.66 ***		

*** p < 0.001 ; ** 0.001 < p < 0.01 ; * 0.01 < p 0.05

Table 6: SUR Models Predicting Integration Scale and Climate Scale Scores, by Sex

	Model Predicting Integration Scale						Model Predicting Climate Scale					
	Men			Women			Men			Women		
	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t
Individual attributes												
Assistant	-0.063	0.11	-0.55	0.040	0.19	0.20	0.225	0.15	1.53	0.183	0.25	0.73
Associate	-0.048	0.09	-0.54	-0.286	0.16	-1.77	-0.061	0.12	-0.53	-0.345	0.21	-1.66
Salary (log)	0.625	0.15	4.30 ***	0.653	0.29	2.22 *	0.237	0.19	1.26	-0.066	0.38	-0.18
Departmental attributes												
Dept. size	-0.004	0.00	-1.37	-0.015	0.01	-2.75 **	0.002	0.00	0.39	-0.004	0.01	-0.53
Chg. Size	-0.003	0.01	-0.21	0.022	0.02	0.89	0.040	0.02	2.43 *	0.073	0.03	2.29 *
Lost women	0.135	0.12	1.15	0.067	0.20	0.34	-0.163	0.15	-1.07	-0.134	0.25	-0.54
Gained women	0.038	0.08	0.49	-0.075	0.15	-0.49	-0.206	0.10	-2.06 *	-0.227	0.20	-1.15
Prop. female	-1.058	0.80	-1.32	-0.478	1.44	-0.33	-2.459	1.04	-2.37 *	1.000	1.86	0.54
Prop. female sq.	0.815	1.31	0.62	1.087	1.81	0.60	3.876	1.70	2.29 *	-0.610	2.33	-0.26
Faultline	-0.060	0.08	-0.73	-0.141	0.20	-0.72	-0.245	0.11	-2.30 *	-0.407	0.25	-1.62
STEM	0.184	0.08	2.37 *	-0.104	0.14	-0.75	0.376	0.10	3.75 ***	-0.078	0.18	-0.44
Constant	-3.391	1.70	-1.99 *	-3.674	3.42	-1.07	0.868	2.20	0.39	3.975	4.41	0.90
R square	0.11			0.14			0.10			0.11		
Chi-square	68.67 ***			33.08 ***			65.13 ***			23.99 ***		

*** p < 0.001 ; ** 0.001 < p < 0.01 ; * 0.01 < p 0.05

Table 1: Climate and Integration Scales – Items and Loadings

Dependent Variables (Scales)	**Loading**
Climate Scale, Cronbach's alpha = 0.83	
Please rate the climate of your department/unit on the following continua…	
Collegial - Contentious	0.72
Cooperative - Competitive	0.72
Conciliatory - Aggressive	0.70
Seeks collective good - Seeks individual advantage	0.69
Cohesive - Fragmented	0.59
Integration Scale, Chronbach's alpha = 0.78	
Please indicate your agreement or disagreement with the following statements concerning your relationships with your colleagues within the department/unit of your primary tenure home:	
I feel comfortable sharing my views in faculty meetings.	0.43
I am ignored in my department/unit.	-0.62
I have to work harder than my colleagues to be perceived as a legitimate scholar	-0.63
I feel my area of research or scholarship is well-accepted by colleagues	0.61

Table 2: Variable Means, Standard Deviations, and Correlations

	Descriptives			Correlations												
	Coding	Mean	SD	Y1	Y2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
Scales																
Y1 Climate	1-4.9	3.53	0.82	1.00												
Y2 Integration	1-5	3.43	1.01	0.63	1.00											
Predictor variables																
X3 Female	0,1	0.27	0.45	-0.14	-0.24	1.00										
X4 Assistant	0,1	0.19	0.39	0.07	-0.11	0.15	1.00									
X5 Associate	0,1	0.25	0.44	-0.16	-0.19	0.12	-0.25	1.00								
X6 Salary (logged)	10.8-12.9	11.51	0.31	0.09	0.29	-0.23	-0.43	-0.35	1.00							
X7 Dept. size	5 - 49	24.35	12.02	0.03	-0.03	-0.04	0.02	-0.08	0.30	1.00						
X8 Chg. In size	-4 - 7	1.16	2.71	0.17	0.09	-0.09	0.09	-0.11	0.24	0.20	1.00					
X9 Lost women	0,1	0.08	0.28	-0.08	0.02	0.01	-0.04	0.01	0.09	-0.02	-0.16	1.00				
X10 Gained women	0,1	0.29	0.45	-0.06	-0.05	0.05	0.06	-0.01	0.06	0.32	0.13	-0.20	1.00			
X11 Prop. female	0 - 0.73	0.24	0.14	-0.15	-0.17	0.34	0.04	0.10	-0.21	-0.08	-0.25	0.06	0.22	1.00		
X12 Prop. female sq.	0 - 0.53	0.08	0.09	-0.10	-0.11	0.34	0.06	0.08	-0.21	-0.13	-0.21	0.00	0.16	0.94	1.00	
X13 Faultline	0,1	0.20	0.40	-0.04	0.02	-0.13	-0.01	0.00	0.05	-0.30	0.00	-0.04	-0.02	-0.37	-0.30	1.00
X14 STEM	0,1	0.55	0.50	0.14	0.13	-0.19	-0.08	-0.04	-0.02	-0.03	0.05	-0.25	0.06	-0.51	-0.45	0.20

Table 3: Means of Climate and Integration Scales by Sex, and Sex and Rank

	Men			Women			Difference: Women-Men		
	Mean	SD	n	Mean	SD	n	Diff	t	df
Total									
Climate Scale	3.51	0.99	632	3.19	1.07	235	-0.32	4.125 ***	866
Integration Scale	3.65	0.77	619	3.21	0.87	230	-0.44	7.085 ***	848
Assistant Professors									
Climate Scale	3.66	0.89	101	3.43	0.93	65	-0.23	1.540	165
Integration Scale	3.43	0.79	96	3.21	0.75	66	-0.22	1.810 *	161
Associate Professors									
Climate Scale	3.28	0.97	138	2.87	1.14	77	-0.41	2.800 ***	214
Integration Scale	3.45	0.78	137	2.92	0.87	74	-0.53	4.510 ***	210
Full Professors									
Climate Scale	3.55	1.00	395	3.29	1.04	93	-0.26	2.260 **	487
Integration Scale	3.78	0.73	386	3.46	0.89	90	-0.32	3.530 ***	475

*** $p < 0.001$; ** $0.001 < p < 0.01$; * $0.01 < p$ 0.05

Table 4: SUR Models Predicting Perceived Climate: Men and Women Combined

	I			II			III			IV			V		
Variables	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t
Individual attributes															
Female	-0.256	0.08	-3.12 **	-0.237	0.09	-2.77 **	-0.246	0.09	-2.87 **	-0.250	0.09	-2.93 **	-0.249	0.09	-2.94 **
Assistant	0.109	0.13	0.88	0.102	0.13	0.82	0.091	0.12	0.74	0.139	0.13	1.11	0.204	0.13	1.62
Associate	-0.230	0.10	-2.29 *	-0.233	0.10	-2.31 *	-0.230	0.10	-2.29 *	-0.196	0.10	-1.95	-0.159	0.10	-1.58
Salary (logged)	0.023	0.17	0.14	0.010	0.17	0.06	-0.012	0.17	-0.07	0.043	0.17	0.26	0.122	0.17	0.71
Departmental attributes															
Dept. size	0.002	0.00	0.62	0.002	0.00	0.58	0.003	0.00	0.92	-0.001	0.00	-0.16	0.000	0.00	0.07
Chg. Size	0.051	0.01	3.62 ***	0.049	0.02	3.33 ***	0.046	0.02	3.14 **	0.042	0.02	2.86 **	0.048	0.02	3.26 ***
Lost women	-0.284	0.13	-2.20	-0.273	0.13	-2.11 *	-0.242	0.13	-1.86	-0.244	0.13	-1.89	-0.168	0.13	-1.28
Gained women	-0.228	0.08	-2.73	-0.207	0.09	-2.37 *	-0.202	0.09	-2.31 *	-0.152	0.09	-1.72	-0.211	0.09	-2.33 *
Prop. female				-0.219	0.29	-0.75	-2.107	0.80	-2.62 **	-2.785	0.83	-3.35 **	-1.984	0.87	-2.27 *
Prop. female sq.							3.187	1.26	2.52 *	3.754	1.27	2.95 *	3.344	1.27	2.62 **
Faultline										-0.288	0.10	-2.90 *	-0.272	0.10	-2.75 **
STEM													0.253	0.09	2.86 **
Constant	3.248	1.94	1.67	3.444	1.96	1.76	3.892	1.96	1.99	3.492	1.96	1.79	2.250	1.99	1.13
R square	0.07			0.07			0.08			0.09			0.10		
Chi square	58.26 ***			58.87 ***			65.71 ***			74.81 ***			83.78 ***		

*** p < 0.001 ; ** 0.001 < p < 0.01 ; * 0.01 < p 0.05

Table 5: SUR Models Predicting Perceived Integration: Men and Women Combined

	I			II			III			IV			V		
Variables	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t
Individual attributes															
Female	-.283	0.06	-4.49 ***	-.248	0.07	-3.76 ***	-.253	0.07	-3.85 ***	-0.254	0.07	-3.88 ***	-.254	0.07	-3.88 ***
Assistant	-.058	0.10	-0.61	-.071	0.10	-0.74	-.078	0.10	-0.82	-0.061	0.10	-0.63	-.032	0.10	-0.33
Associate	-.157	0.08	-2.03 *	-.162	0.08	-2.10	-.160	0.08	-2.08 *	-0.148	0.08	-1.91	-.132	0.08	-1.69
Salary (logged)	.578	0.13	4.46 ***	.554	.130	4.26 ***	.540	0.13	4.16 ***	0.561	0.13	4.30 ***	.595	0.13	4.51 ***
Departmental attributes															
Dept. size	-.007	0.00	-2.86 **	-.007	0.00	-2.96 **	-.007	0.00	-2.66 **	-0.008	0.00	-2.97 **	-.008	0.00	-2.84 **
Chg. Size	.012	0.01	1.10	.007	0.01	0.61	.005	0.01	0.46	0.004	0.01	0.32	.006	0.01	0.56
Lost women	.042	0.10	0.42	.062	0.10	0.62	.082	.100	0.81	0.080	0.10	0.81	.114	0.10	1.12
Gained women	-.019	0.06	-0.29	.020	.067	0.30	.023	0.07	0.35	0.042	0.07	0.61	.016	0.07	0.23
Prop. female				-.412	0.22	-1.86	-1.59	0.62	-2.58 **	-1.840	0.64	-2.87 **	-1.489	0.68	-2.20 *
Prop. female sq.							1.989	0.97	2.05	2.196	0.98	2.24 *	2.016	0.99	2.04 *
Faultline										-0.105	0.08	-1.37	-.098	0.08	-1.28
STEM													.111	0.07	1.62
Constant	-2.84	1.49	-1.90	-2.467	1.503	-1.64	-2.188	1.51	-1.45	-2.334	1.508	-1.55	-2.879	1.54	-1.87
R square	0.13			0.13			0.13			0.14			0.14		
Chi square	110.68 ***			114.63 ***			119.44 ***			121.62 ***			124.66 ***		

*** p < 0.001 ; ** 0.001 < p < 0.01 ; * 0.01 < p 0.05

Table 6: SUR Models Predicting Integration Scale and Climate Scale Scores, by Sex

	Model Predicting Integration Scale						Model Predicting Climate Scale					
	Men			Women			Men			Women		
	Coef	SE	t	Coef	SE	t	Coef	SE	t	Coef	SE	t
Individual attributes												
Assistant	-0.063	0.11	-0.55	0.040	0.19	0.20	0.225	0.15	1.53	0.183	0.25	0.73
Associate	-0.048	0.09	-0.54	-0.286	0.16	-1.77	-0.061	0.12	-0.53	-0.345	0.21	-1.66
Salary (log)	0.625	0.15	4.30 ***	0.653	0.29	2.22 *	0.237	0.19	1.26	-0.066	0.38	-0.18
Departmental attributes												
Dept. size	-0.004	0.00	-1.37	-0.015	0.01	-2.75 **	0.002	0.00	0.39	-0.004	0.01	-0.53
Chg. Size	-0.003	0.01	-0.21	0.022	0.02	0.89	0.040	0.02	2.43 *	0.073	0.03	2.29 *
Lost women	0.135	0.12	1.15	0.067	0.20	0.34	-0.163	0.15	-1.07	-0.134	0.25	-0.54
Gained women	0.038	0.08	0.49	-0.075	0.15	-0.49	-0.206	0.10	-2.06 *	-0.227	0.20	-1.15
Prop. female	-1.058	0.80	-1.32	-0.478	1.44	-0.33	-2.459	1.04	-2.37 *	1.000	1.86	0.54
Prop. female sq.	0.815	1.31	0.62	1.087	1.81	0.60	3.876	1.70	2.29 *	-0.610	2.33	-0.26
Faultline	-0.060	0.08	-0.73	-0.141	0.20	-0.72	-0.245	0.11	-2.30 *	-0.407	0.25	-1.62
STEM	0.184	0.08	2.37 *	-0.104	0.14	-0.75	0.376	0.10	3.75 ***	-0.078	0.18	-0.44
Constant	-3.391	1.70	-1.99 *	-3.674	3.42	-1.07	0.868	2.20	0.39	3.975	4.41	0.90
R square	0.11			0.14			0.10			0.11		
Chi-square	68.67 ***			33.08 ***			65.13 ***			23.99 ***		

*** p < 0.001 ; ** 0.001 < p < 0.01 ; * 0.01 < p 0.05