

DISCUSSION PAPER SERIES

IZA DP No. 10577

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The Power of Perceived Differences in
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ABSTRACT

I Can't Get No Satisfaction: The Power of Perceived Differences in Employee Retention and Turnover

This study explores the role of salary raises and the perception of employees of these salary raises on employees' intended retention and turnover. By using a unique survey data set from an American university, this study investigates a novel hypothesis that faculty perceptions of salary raises, relative to their perceptions of other faculty members' assessments of the raises, influences their labor supply. Using both Ordered Probit and OLS modelling frameworks, we focus on the impact of salary raises and the relative perception of these raises on intended labor supply behavior. We explore a hypothesis that a mismatch between one's ranking of the salary raise and the perception of others' rankings causes dissatisfaction. Our results provide evidence that salary raises themselves are effective monetary tools to reduce turnover; however, our results also suggest that relative deprivation as a comparison of one's own perceptions of a salary raise with others affects employee retention. We find that employees who have less favorable perceptions of salary adjustments, compared to what they believe their colleagues think, are more likely to seek another employer, holding their own perception of raises constant. Conversely, more favorable views of salary raises, compared to how faculty members think other's perceived the salary raises, does not have a statistically significant impact on retention. Our results indicate that monetary rewards in the form of salary raises do impact employee retention; however, perception of fairness of these salary raises is also as important as the actual raises. Given the high cost of job turnover, these findings suggest that employers would benefit from devoting resources toward ensuring that salary- and raise-determining procedures are generally perceived by the vast majority of employees as being fair. This is the first study that explores the employee satisfaction with salary raises relative to perceptions of other employees' satisfaction with salary raises, and intended labor supply in an American university.

JEL Classification: I23, J22, J28, M52

Keywords: employee turnover, labor supply, higher education, job satisfaction, ordered probit model, relative perception, relative deprivation

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1. Introduction

A salary adjustment encapsulates both a tangible measure of the perceived value of an employee's continuing contribution to the organization and an emotionally charged signal that reflects the firm's overall operational level of goodwill toward that employee. The recipient may view this as a satisfying reward that motivates enhanced performance. Alternatively, the employee may categorize the raise, or lack thereof, as implicitly ranking the employee below peers. The raise unavoidably evokes a reaction that lies somewhere on the spectrum between elated fulfillment and job dissatisfaction, where the balance could be greatly influenced by comparison with peers. The perceived satisfaction of others with salary raises may also influence the employee's perceptions of the raise. Perceived relative satisfaction and the perception of the institution's *relative* ranking of her value to the organization may serve as catalysts for employee action. Our study focuses on how relative deprivation in the form of comparing one's own perceptions of a salary raise with others may impact employee turnover and retention.

Using faculty survey data collected from an American public university, this study investigates a novel hypothesis that the gap in one's satisfaction with salary raises and perceptions of others' satisfaction with their salary raises may affect one's own intended labor supply behavior. We measure the intended labor supply behavior of faculty by responses to survey questions on (1) *intent to look for a job elsewhere*, and (2) *intent to retire sooner*, expecting that a faculty member's lower ranking of the salary raise and her perception of colleagues' higher rankings may trigger job dissatisfaction, regardless of the actual amount of the raise received. Therefore, those faculty members who are less satisfied with their jobs at the current institution may be more likely to look for jobs elsewhere or retire sooner.

Using an Ordered Probit modelling framework, we find evidence that faculty members with less favorable perceptions of salary adjustments, compared to what they believe their

colleagues think, are indeed more likely to look for jobs elsewhere, holding their own perceptions of the salary raises constant. However, our results show that the impact of relative perception of salary raises on intended labor supply outcomes is asymmetric. Cases where individuals have more favorable views on their own salary raises, compared to their perceptions of how others perceive salary raises, do not significantly impact the intent to look for a job elsewhere, which is consistent with self-serving attribution bias (Pal, 2007). We do not find statistically significant relationships between relative perception of the salary raises and intention to retire sooner. The evidence also indicates that the percentage increase in the salary has a large impact on faculty retention. Individuals who received a higher raise percentage were less likely to consider looking for a new job, while a higher raise percentage does not have a statistically significant impact on the intention to retire sooner.

Our results thus suggest that relative perceptions of salary raises are important tools for faculty retention. Given the high cost of job turnover (see Boushey and Glynn, 2012), these findings suggest that employers would benefit from devoting resources toward ensuring that salary- and raise-determining procedures are generally perceived by the vast majority of employees as being fair, whether or not they are actually based on an accurate reward system for high performance. Although there are many studies that explore the relationship between job satisfaction and labor supply behavior, this is the first study that explores the employee satisfaction with salary raises relative to perceptions of other employees' satisfaction with salary raises, and intended labor supply behavior in the academic labor market.

2. Literature Review

The nascent yet rapidly growing happiness literature provides evidence that happiness (as measured by subjective well-being, life satisfaction, job satisfaction, etc.) is important in

quantifying individual welfare.¹ Although various measures of well-being are widely used as a proxy for overall welfare, labor economists generally focus on relationships between job satisfaction and choices of workers in labor markets. Hamermesh (1974, 1977) was one of the first to consider job satisfaction as an important economic indicator; since then many others have explored the relationship between job satisfaction and various aspects of employee behavior, such as job quits and separations (e.g., Freeman, 1978; Clark & Oswald, 1996; Clark, 1997, 2001; Clark et al., 1998; Kristensen & Westergard-Nielsen, 2006; Green, 2010).

Although job satisfaction can be regarded as the overall utility one receives from a job, the umbrella terms “job satisfaction” and “utility” involve “social comparisons,” i.e. comparing oneself with others. As Green (2010, p. 897) suggests, “Job satisfaction's relationship to ‘utility’ crucially depends on the comparison point and standard, against which survey respondents judge their degree of satisfaction.”

The happiness literature has used various comparison groups, including neighbors, spouses, those with the same job, colleagues, family, friends, those with the same age and education, and the entire country (Easterlin, 1995; Clark & Oswald, 1996; McBride, 2001; Di Tella et al., 2003; Guven, et al., 2012).

Cappelli and Sherer (1988) indicate that the current outside market wage has a significantly negative effect on pay satisfaction, as does the extent to which workers compare wages with the market. Consistent with Cappelli and Sherer (1988), Levy-Garboua & Montmarquette (2004) and Levy-Garboua et al. (2007) find that job satisfaction is determined by comparisons between current job and outside, past, and expected future job opportunities. These studies imply that determination of job satisfaction is a dynamic process, involving continuous

¹ Clark, Frijters and Shields (2008) calculate that the research published with the keywords “happiness,” “life-satisfaction,” or “well-being” since 2000 make up 61 percent of all research in this area, underlining the exponential growth of life satisfaction literature.

comparisons. O'Meara, et al. (2014) explore the reasons for faculty departure and conclude that one of the dominant explanations for why faculty members leave is higher salary elsewhere.

Bygren (2004) concludes that employee satisfaction is negatively related to the income of others in the same occupation.

Clark and Oswald (1996) suggest that relative deprivation theory applies to job satisfaction in that two major determinants of worker satisfaction have equal but opposite coefficients: individual income (positive) and comparison income (negative). Ferrer-i-Carbonell (2005) confirms the results of Clark and Oswald (1996), concluding that the income level of the comparison group is as important as one's own income in affecting life satisfaction. McBride (2001) finds that relative income matters to subjective well-being, and these effects are larger for higher income levels. In their literature review, Clark et al. (2008) suggest that the relationship between happiness and comparisons of self with others (social comparison) and with one's past experiences (habituation) may affect an individual's labor supply behavior.

Montero and Vasquez (2014) find that an individual not only derives satisfaction from her individual wages, but also from the average wage paid to some group that she considers especially important. Kifle (2014) shows that workers' overall satisfaction depends on both one's own wages and how that wage ranks relative to others'; as one's rank rises by one position, that individual is more likely to indicate high overall job satisfaction, instead of low or medium overall job satisfaction. Brown et al. (2008) indicate that rank within an organization's pay distribution is not only a powerful predictor of satisfaction, but also that leaving is correlated with the skewness in that firm's wage distribution. According to Hartman et al. (1999), the positive results of a salary increase depend on how informed the faculty member is of the pay raise policy, and whether procedures are being followed correctly.

Clark (1997) finds that women have higher levels of job satisfaction, although women's job attributes are worse than men's on average, explaining the gender job satisfaction gap with evidence that women have relatively lower expectations regarding job attributes. The average income of one's reference group, controlling for sex and region, is negatively correlated with satisfaction of full-time employees (Clark, 2001). In addition, Clark (2001) concludes that job satisfaction is an important predictor of employee quit and separation behavior, holding wages, hours and other job and demographic variables constant. Clark (2001) also finds that satisfaction with pay and job security are two of the most important factors preventing quits.

Family relationship literature suggests that satisfaction with a given family arrangement depends more on the perception of the differential, rather than just the differential itself. When studying the differential treatment of siblings by parents, Kowal, et al. (2004) find that the magnitude of differential treatment is associated with more negative parent-child relationships only when adolescents perceive differential treatment to be unfair; differential treatment judged to be fair is not linked with negative parent-child relationships. Guven et al. (2012), using large longitudinal studies from three countries, conclude that marriage dissolution is caused by a happiness gap resulting from a feeling of relative deprivation, not from a desire for equal utility (well-being). Our study supports the findings in Guven et al. (2012), and suggests that perceived relative deprivation is the primary determining factor driving employee satisfaction and labor supply decisions at the extensive margin.

3. Data and Summary Statistics

The data set was constructed by collecting survey responses from full-time faculty members at a public university that implemented faculty salary raises in 2013. The raises were based on performance, but the amount was also based on the relative gap between current salary

and market value. Many of these gaps were large, with the current salary of many being less than 80% of market. Faculty members whose salaries were, for example, 70% of market, could receive a 14% raise; while not enough to correct for the gap in salary, this was historically higher than any raise they had previously received at the university. As a result, some faculty members experienced unexpected increases in annual salary, incorporated into their monthly paychecks starting in April; they also received a lump-sum amount to compensate them for the 6-month no-raise period earlier in the academic year. (For a detailed description of the faculty raise procedure, see Appendix A). After raises were implemented, faculty members were asked to respond to an anonymous survey in May 2013. Reminders were sent within a 1-2 month period of the initial invitation to ensure timely completion.

The surveys asked the faculty about their salary raises, annual salaries, personal and work characteristics, as well as other household and individual characteristics, including age, gender, race/ethnicity, marital status, size of household, occupation, labor market status, household and individual income and expenditures. Additional data were collected on attitudes towards that year's salary raises, intended labor market responses, and satisfaction with salary adjustments.²

Subjective data to measure employee attitudes such as these have been found to be valid and reliable through the use of different tests: Frey and Stutzer (2002) examined cross-ratings by spouses and friends; Di Tella and MacCulloch (2006) and Kahneman and Krueger (2006) used test-retest experiments and neuro-psychological experiments with MRI. Examining the main factors of self-declared satisfaction, Di Tella et al. (2003) conclude that the structure of satisfaction is stable across both time and space. Subjective data are generally used to estimate individual welfare functions from responses to subjective questions such as the "Life

² Both the survey and a detailed description of the faculty raise procedure are available upon request.

satisfaction” question: “*To what extent are you satisfied with your life in general at the present time?*”: *fully satisfied / rather satisfied / both yes and no / less than satisfied / not at all satisfied.*

3.1 Summary Statistics

Table 1 shows the summary statistics for the variables used in the analysis. (For definitions of all variables used in the analysis, see Table B.1 of Appendix B.) Of approximately 262 full-time faculty, 174 responded to the survey.

Table 1 shows that 43% of the sample is male and 57% female. According to university records, female faculty make up 40% of the total full-time faculty, which implies that female faculty are slightly overrepresented in our sample. More respondents were tenured (53%) than tenure-track (22%), although 64% of all full-time faculty are tenured. The sample is roughly equally divided between assistant (31%), associate (27%), and full (28%) professors.

University records indicate that assistant, associate, and full professors make up 31, 33, and 35% of the faculty, respectively, showing similarity between our sample and the population of full-time faculty. Comparing administrative data from the university and our sample statistics for several key variables, we conclude that our sample is representative of full-time faculty in this institution; therefore, we expect that survey non-response is unlikely to bias our estimates. Twenty-four percent of the sample is from the College of Liberal Arts, while colleges of Business, Education, Nursing and Health Sciences, and Science and Engineering, make up approximately 11, 12, 13, and 16% of the sample, respectively.

The respondents reported an average of 18 years of work experience and an average annual salary of \$68,132 before the raise. In this university, annual faculty contracts are offered for 9-month terms.

TABLE 1: Summary Statistics

Variable	Mean	Standard deviation	Minimum	Maximum
Male	0.427	0.496	0	1
Status				
Tenure-track	0.218	0.414	0	1
Tenured	0.533	0.501	0	1
Rank				
Assistant professor	0.315	0.66	0	1
Associate professor	0.270	0.446	0	1
Full professor	0.278	0.449	0	1
College				
Business	0.109	0.312	0	1
Liberal Arts	0.241	0.429	0	1
Education	0.121	0.326	0	1
Nursing and Health Sciences	0.132	0.340	0	1
Science and Engineering	0.155	0.363	0	1
Other	0.023	0.150	0	1
Experience	17.87	10.203	3	45
Salary 9-month	0.631	0.484	0	10
Annual salary before raise	\$68,132	\$22,395	\$30,000	\$190,000
Received raise	0.782	41.4	0	1
Raise percent	3.034	5.87	0	40
Labor Supply, Happiness and Attitudes towards raise				
Look for job elsewhere	4.476	2.150	1	7
Retire Sooner	2.974	2.001	1	7
Happy now	3.091	1.211	1	5
Happy now-friends' rankings	3.107	1.234	1	5
Happy before	3.100	1.158	1	5
Happy before-friends' rankings	3.116	1.222	1	5
Attitudes towards salary raises				
Pleased in general, own ranking	2.909	1.967	1	7
Pleased in general – colleagues who received	3.586	1.855	1	7
Pleased in general – colleagues who did not receive	2.038	1.328	1	7

Notes: The descriptions for variables that measure attitudes towards salary raise are: Pleased in general: “In general, I am very pleased with the changes in faculty salaries;” Pleased in general – those who received: “In general, my colleagues who RECEIVED A RAISE are very pleased with the changes in faculty salaries;” Pleased in general – those who did not receive: “In general, my colleagues who DID NOT RECEIVE A RAISE are very pleased with the changes in faculty salaries.”

Faculty may choose a 12-month pay period, with the 9-month contract amount divided into 12 equal parts. Sixty-three percent of those surveyed elect to receive salary on a 9-month basis, while 37% prefer payments over 12 months. The survey asks about time-preferences because choosing to receive salary in 9- vs. 12-month terms could be a proxy for different consumption smoothing behavior, financial preferences, and discount rates. Acting rationally, all should opt for a 9-month payment plan to yield a return on the time value of money and to increase interim liquidity as a buffer against adverse economic shocks. But a 9-month salary distribution requires that, given the possibility of no summer income, a household must exercise self-control by saving a portion of the 9-month salary for summer expenditures. However, Muraven et al. (1998) argue that self-control is a limited resource that depletes with use across many domains, including spending.

Table 1 shows that 78% of the sample received a salary raise in 2013, with the average raise being 3.03% of the initial annual salary, with 22% receiving no raises. University administration announced that the overall amount of the raise was 4.16% percent of annual salaries, which is consistent with our findings, but indicates that our findings might be slightly biased toward those not receiving raises.

The survey directly asked how individuals feel about the salary raise, as well as indirectly, asking questions to measure the possible changes in behavior due to this raise. Most are Likert scale questions over seven numbers labeled from “*strongly disagree* (=1)” to “*strongly agree* (=7),”³ although some that measure employee happiness and satisfaction are coded in a 5-point Likert scale. Several questions are coded in the reverse direction to avoid respondents’

³ In the survey, all these statements were in coded a 7-point Likert scale (with 3 being *Strongly Agree*, 0 being *Neutral*, and -3 being *Strongly Disagree*). However, to conduct empirical modeling and estimations, these were converted to the Likert scale rankings to 1-7 scale with 7 being *Strongly Agree* and 1 being *Strongly Disagree*.

automatically choosing the answers without reading the questions carefully (see “foot-in-the-door syndrome” by Freedman & Fraser, 1966).

The direct effect of salary raises is measured by asking the respondents to choose from a 7-point Likert scale, such as: “*As a result of this year’s changes in faculty salaries, I am more likely to seek employment elsewhere.*” This question is designed to measure potential faculty attrition, an important issue in higher education because employee turnover is expensive. Boushey and Glynn (2012) estimate the replacement cost to the employer for a lost employee is approximately 20% of that employee’s annual salary; the better the skill set of the employee, the higher the cost. Responses help measure faculty discontent with salary raises, since a faculty member who did not receive a raise may feel disappointed and may plan to leave the university.

Response to the statement on *seeking employment elsewhere* averaged 4.5 on a 7-point scale, centered between *neutral* and *agree somewhat*, implying that the respondents are, on average, weakly leaning towards seeking employment at different institutions in response to salary increases. Choosing from the 7-point Likert scale for the question, “*As a result of this year’s changes in faculty salaries, I am more likely to retire sooner than I had been planning,*” the average faculty response was 2.9, implying that respondents, on average, *disagree somewhat* with this statement (see Table 1).

To directly measure attitudes towards the salary raise, we focus on responses to three statements on employee perception of the raise, and how they think others, including both those who did receive and those who did not receive a raise, perceived the salary adjustments. When asked to respond to the statement, “*In general, I am very pleased with the changes in faculty salaries,*” faculty chose 2.9 on average, falling between *disagree* and *disagree somewhat*, but closer to *disagree somewhat*. Respondents think that those who received salary raises have, on average, a ranking of 3.6. Moreover, they perceive that those who did not receive salary raises

have, on average, a ranking of 2.0 for this same question. Table 1 indicates that individuals think that others who received a raise have more favorable attitudes towards the raise than they do themselves, while thinking that those who did not receive a raise have less favorable attitudes towards salary adjustments in general.

4. Empirical Methodology and Results

We estimate the following empirical model to investigate the relationship between the salary adjustment and both intended changes in faculty labor supply and satisfaction:

$$Employee\ Intended\ Outcome_i = \beta_0 + \beta_1 Raise_i + X_i' \delta + u_i \quad (1)$$

where *Employee Intended Outcome_i* is faculty *i*'s ranking for one of the two variables that measure labor supply behavior: *intention to look for a job elsewhere*, and *intention to retire earlier*. We conduct our estimations for Equation (1) for two dependent variables separately. Two variables that account for intended labor supply responses are measured using a 7-point Likert scale (with 7 being *Strongly Agree* and 1 being *Strongly Disagree*). *Raise_i* is one of the two main independent variables of interest that measure salary raise attributes for faculty *i*. We use a dummy variable, "*Received raise*," which takes on a value one for those who received raise and zero otherwise. The variable "*Raise percent*" measures the raise received by faculty *i* as a percent of pre-raise annual salary. *X_i'* is a vector of independent variables that contains annual salary before salary raise, four dummy variables for colleges, with the fifth, the College of Liberal Arts, being the excluded category as the reference group; a dummy variable for male; dummy variables for status (tenure and tenure-track); continuous variables for years of experience and for quadratic of years of experience (divided by 100); two dummy variables for faculty rank, where assistant professor is the excluded reference group; and a dummy variable for receiving salary on a 9-month basis. The annual salary is measured in thousands of U.S.

dollars and coded as midpoints of the following intervals: less than \$30,000; \$30,000-39,999; \$40,000-49,999; \$50,000-59,999;...;\$180,000-189,999; \$190,000 and more. (There are two exceptions to mid-point coding: less than \$30,000 is bottom coded as \$30,000 and \$190,000 and more is top-coded as \$190,000). The stochastic error term is u_i , where $E(u_i) = 0$ and $\text{Var}(u_i) = \sigma^2$

We follow two different estimation strategies: First, we estimate Equation (1) for each labor supply intended outcome using an OLS model. Second, we use an Ordered Probit Model to estimate the relationship between each of various aspects of salary adjustment and intended labor supply of faculty due to the ordered nature of the dependent variables. But first we will explain the Ordered Probit framework.

4.1 Ordered Probit Framework

We estimate the following Ordered Probit model to investigate the relationship between salary adjustment and employee intended outcome (*EIO*) responses:

$$EIO_{ij}^* = \gamma_j \text{Raise}_{ij} + X'_{ij} \delta_j + \varepsilon_{ij} \tag{2}$$

where EIO_{ij}^* is the importance of j as measured by the 7-point scale for employee intended labor supply outcomes faculty i assigns to the employee intended outcomes *EIO* as measured by the two intended changes in labor supply due to salary adjustment. The stochastic error is ε_{ij} , and all other variables are defined as previously. While we do not observe the latent variable, EIO_{ij}^* , faculty members ranked the statements related to intended employee labor supply, which are defined as follows:

$$\begin{aligned}
 EIO &= 1, & \text{if} & & EIO_j^* \leq \mu_{1j} & & (3) \\
 &= 2, & \text{if} & & \mu_{1j} < EIO_j^* < \mu_{2j} \\
 &= 3, & \text{if} & & \mu_{2j} < EIO_j^* < \mu_{3j} \\
 &= 4, & \text{if} & & \mu_{3j} < EIO_j^* < \mu_{4j} \\
 &= 5, & \text{if} & & \mu_{4j} < EIO_j^* < \mu_{5j} \\
 &= 6, & \text{if} & & \mu_{5j} < EIO_j^* < \mu_{6j} \\
 &= 7, & \text{if} & & \mu_{6j} \leq EIO_j^*
 \end{aligned}$$

The μ 's represent the unknown threshold parameters for each 7-point ranking j . Although faculty members could assign each of these statements their own specific ranking, since the respondents were given only 7 choices, they selected the ranking that is closest to their actual ranking. We follow the standard assumptions of the Ordered Probit model where the stochastic error term is normally distributed with zero mean and unit variance.

With the right hand side of Equation (2) being $Z' \beta = \gamma_j \text{Raise}_{ij} + X'_{ij} \delta_j$, we derive the probabilities for the intended labor market outcomes as follows:

$$\begin{aligned}
 \text{Prob}(EIO = 1) &= \Phi(-Z' \beta) & (4) \\
 \text{Prob}(EIO = 2) &= \Phi(\mu_{2j} - Z' \beta) - \Phi(-Z' \beta) \\
 \text{Prob}(EIO = 3) &= \Phi(\mu_{3j} - Z' \beta) - \Phi(\mu_{2j} - Z' \beta) \\
 \text{Prob}(EIO = 4) &= \Phi(\mu_{4j} - Z' \beta) - \Phi(\mu_{3j} - Z' \beta) \\
 \text{Prob}(EIO = 5) &= \Phi(\mu_{5j} - Z' \beta) - \Phi(\mu_{4j} - Z' \beta) \\
 \text{Prob}(EIO = 6) &= \Phi(\mu_{6j} - Z' \beta) - \Phi(\mu_{5j} - Z' \beta) \\
 \text{Prob}(EIO = 7) &= 1 - \Phi(\mu_{6j} - Z' \beta)
 \end{aligned}$$

where $\Phi(\cdot)$ is the normal cumulative density function. To ensure positive probabilities, we are required to have $0 < \mu_{1j} < \mu_{2j} < \mu_{3j} < \mu_{4j} < \mu_{5j} < \mu_{6j}$.

4.2 Labor Supply and Behavioral Responses to Salary Adjustment

The first two columns of Table 2 present the OLS results of the relationship between whether or not an employee received a raise and the two intended labor supply outcomes -

intention to look for a job and intention to retire sooner, while the last two columns of Table 2 show the estimation results for the impact of salary raise percent on these two intended labor supply responses. Assuming that giving a raise is an effective tool to reduce employee turnover, we expect the relationship between receiving a raise and intention to look for job to be negative. However, we expect an ambiguous relationship between salary raises and the intention to retire sooner. Higher salaries and the resultant higher retirement contributions may help employees retire sooner, because the raise provides extra income. At the same time, the opportunity cost of retirement is the forgone (higher) salary; those who received a raise may decide to work longer to take advantage of higher salaries and retirement contributions, especially because this particular state's retirement system bases the monthly retirement payment on the highest five years of state income earned.

Table 2 provides evidence that those who received a raise are less likely to look for a job elsewhere and are less likely to retire sooner, compared to those who did not receive a raise.

In both equations, the negative and statistically significant coefficients on the "*received raise*" variable imply that faculty members who received a raise are less likely to leave. Those who received a raise are less likely to retire sooner, perhaps to take advantage of their higher salaries, larger retirement accounts and retirement checks. The last two columns of Table 2 show that those who received a higher percentage raise are less likely to look for a job, while the higher percentage raise does not have a significant impact on the intention to retire sooner.

Annual salary has no statistically significant effect on the intended labor supply. Our results suggest that faculty from different colleges have similar labor supply responses, with two exceptions: Faculty in the College of Nursing and Health Sciences are less likely to look for a job as a response to the salary adjustment compared to College of Liberal Arts faculty.

TABLE 2: OLS Model: Intended Labor Supply Responses to Salary Raise

	Impact of Having Received a Raise		Impact of the Salary Raise Percent	
	(1) Look for job	(2) Retire Sooner	(1) Look for job	(2) Retire Sooner
Received raise	-0.894* (1.94)	-1.000* (1.95)		
Raise percent			-0.120*** (2.94)	-0.044 (0.94)
Annual salary before raise	0.0176 (1.25)	0.00830 (0.82)	0.012 (0.97)	0.008 (0.80)
College of Business	-0.0100 (0.01)	-0.00567 (0.01)	-0.00501 (0.01)	-0.107 (0.15)
College of Education	0.450 (0.67)	0.426 (0.70)	0.395 (0.63)	0.454 (0.75)
College of Nursing and Health Sciences	-1.246* (1.77)	-0.0253 (0.04)	-1.629** (2.37)	-0.282 (0.40)
College of Science and Engineering	0.281 (0.48)	0.0211 (0.03)	0.213 (0.37)	0.0116 (0.02)
Other	-1.732 (1.24)	-0.720 (0.75)	-1.491 (1.11)	-0.371 (0.35)
Male	-0.155 (0.33)	-0.359 (0.77)	-0.240 (0.54)	-0.422 (0.89)
Tenure-track	0.0271 (0.04)	0.0198 (0.03)	-0.009 (0.01)	0.122 (0.18)
Tenured	-0.676 (0.72)	-1.337* (1.71)	-0.763 (0.84)	-1.286 (1.55)
Associate professor	0.737 (1.21)	1.230** (2.26)	0.538 (0.89)	0.998* (1.75)
Full professor	-0.354 (0.40)	0.722 (1.02)	-0.540 (0.69)	0.291 (0.42)
Experience	-0.0223 (0.26)	0.0543 (0.63)	0.007 (0.08)	0.068 (0.73)
Experience ² /100	-0.0421 (0.21)	-0.101 (0.51)	-0.079 (0.39)	-0.097 (0.46)
Salary 9-month	-0.114 (0.27)	0.661 (1.61)	0.014 (0.03)	0.719* (1.72)
<i>N</i>	130	118	130	118
adj. <i>R</i> ²	0.079	0.014	0.150	-0.006

Note: Regression of intended employee outcomes (Look for job, Retire Sooner) on faculty characteristics. *t*-statistics are reported in parentheses, in absolute values, together with the coefficients estimated using OLS. Heteroskedasticity corrected robust standard errors are calculated using Huber-White method. ***, ** and * indicate respectively 1%, 5% and 10% significance levels.

Neither *years of experience* nor *gender* are statistically significant in any of the equations.

Faculty status (tenured, tenure-track or other) does not influence intended labor supply, with the exception that tenured professors are less likely to retire sooner as a response to the salary

adjustment. Compared to assistant professors, associate professors are more likely to retire sooner due to the salary adjustment.

Because labor supply responses are inherently ordered, we utilize the Ordered Probit model to investigate whether the intended labor supply responses vary by salary-raise characteristics. Table 3 presents the coefficient estimates of the Ordered Probit estimation results for the specifications presented in Table 2, along with six threshold values (μ_1 through μ_6) averaged across individuals in the sample. On the basis of the computed χ^2 values (degrees of freedom = 17), all four models are statistically significant at conventional levels.

TABLE 3: Ordered Probit Coefficient Estimates: Intended Labor Supply Responses to Salary Raise

	Impact of Having Received a Raise		Impact of the Salary Raise Percent	
	(1) Look for job	(2) Retire Sooner	(1) Look for job	(2) Retire Sooner
Received raise	-0.476* (1.82)	-0.592** (2.08)		
Raise percent			-0.0694** (2.54)	-0.0235 (0.86)
μ_0	-1.442** (2.06)	0.034 (0.05)	-1.491** (2.27)	0.446 (0.69)
μ_1	-1.183* (1.69)	0.348 (0.50)	-1.220* (1.84)	0.759 (1.17)
μ_2	-0.881 (1.27)	0.562 (0.81)	-0.910 (1.37)	0.971 (1.49)
μ_3	-0.332 (0.48)	1.390** (2.01)	-0.338 (0.52)	1.779*** (2.71)
μ_4	0.0668 (0.10)	1.541** (2.24)	0.084 (0.13)	1.927*** (2.92)
μ_5	0.367 (0.52)	1.829*** (2.61)	0.400 (0.60)	2.213*** (3.30)
<i>N</i>	130	118	130	118
<i>Log of likelihood</i>	-224.970	-182.951	-219.901	-184.271
<i>Wald χ^2 (17)</i>	453.09	481.18	530.02	486.34

The Ordered Probit results in Table 3 are consistent with the OLS results presented in Table 2. The dummy variable for having received a raise is statistically significant and negative in the equations for intention to look for a job and to retire sooner. The variable that measures

“percent raise received” is only statistically significant and negative in the equation for intention to look for a job.⁴

To better understand the marginal impacts of independent variables on intended outcomes, we calculate the marginal effects after estimating the Ordered Probit model. Marginal effects for dummy variables, such as the dummy for having received a raise, are calculated as follows: $ME = \text{Prob}(EIO | \text{received raise} = 1) - \text{Prob}(EIO | \text{received raise} = 0)$. All other independent variables are assumed to be at their sample means. Marginal effects for continuous variables, such as the raise percent variable, are calculated as follows: $ME = \frac{d[\text{Prob}(EIO)]}{d(\text{raisepercent})}$,

while all other independent variables are assumed to be at their sample means.

Table 4 presents the marginal effects of independent variables on the employee intended outcomes after estimating the Ordered Probit model. The top panel suggests that those who received a raise are 8.3 percentage points more likely to choose *strongly disagree*, and are 2 and 16.5 percentage points less likely to choose *agree* and *strongly agree*, respectively, for intent to look for a job elsewhere, compared to those who did not receive a raise. This finding implies that receiving a raise significantly increases the current job attachment, reducing potential turnover, regardless of the raise amount.

Moreover, those who received a raise are 21.3 percentage points more likely to choose *strongly disagree* and 9.4 percentage points less likely to choose *strongly agree* for intent to retire sooner, compared to those who did not receive raise. Those who received a raise are also 7.8 percentage points less likely to be *undecided* about intent to retire sooner.

⁴ In the Ordered Probit model of Table 3, we include the full set of independent variables from Table 2, but to conserve space, we do not present their coefficient estimates in Table 3. The full results are available upon request.

Table 4: Marginal Effects after Ordered Probit, Intended Labor Supply Responses to Salary Raise

	Marginal effects after Ordered Probit						
	Strongly Disagree	Disagree	Disagree Somewhat	Undecided	Agree Somewhat	Agree	Strongly Agree
Impact of Having Received a Raise							
(1) Look for job							
Received raise	0.083** (1.96)	0.028 (1.61)	0.033 (1.57)	0.041 (1.49)	-0.001 (0.14)	-0.019* (1.73)	-0.165* (1.76)
(2) Retire sooner							
Received raise	0.213** (2.28)	0.019 (1.18)	0.0005 (0.07)	-0.078** (2.25)	-0.021 (1.45)	-0.038 (1.63)	-0.094* (1.67)
Impact of the Salary Raise Percent							
(1) Look for job							
Raise percent	0.014** (2.33)	0.0045* (1.89)	0.005** (2.00)	0.0048* (1.95)	-0.002 (1.16)	-0.004* (1.89)	-0.022** (2.56)
(2) Retire sooner							
Raise percent	0.0091 (0.85)	0.0003 (0.66)	-0.0003 (0.67)	-0.0038 (0.82)	-0.0008 (0.92)	-0.002 (0.80)	-0.003 (0.85)

The lower panel of Table 4 provides evidence that each percentage increase in salary raise increases the likelihood of reporting *strongly disagree*, *disagree*, *disagree somewhat*, and *undecided* by 1.4, 0.4, 0.5 and 0.5 percentage points for intent to look for a job elsewhere, while each percentage increase in the salary decreases the likelihood of reporting *strongly agree* 2.2 percentage points for intent to look for a job elsewhere. With the average reported salary raise being approximately 3%, the effects are substantial. However, no statistically significant relationship is found between the percentage of the salary raise received and intent to retire sooner. Next we direct our attention to the association between salary raises, relative perception of salary adjustments, employee satisfaction, and intended labor supply responses of faculty.

4.3 Relative Perception of Salary Raises and Intended Employee Behavior

In order to assess attitudes towards the salary raise, we focus on 3 statements, each over a 7-point Likert scale, on how faculty perceived the salary raise, and how they think others who received a raise and those who did not receive a raise perceived the salary adjustments:

1. “In general, *I am* very pleased with the changes in faculty salaries;”
2. “In general, my colleagues *who received a raise* are very pleased with the changes in faculty salaries;”
3. “In general, my colleagues *who did not receive* a raise are very pleased with the changes in faculty salaries.”

To study the impact of relative perception of salary adjustment on labor supply outcomes, we construct two ratios that proxy for an individual’s rankings of the three statements relative to other faculty who did and did not receive a raise, as perceived by the individual faculty. The *Pleased in General Ratio (PGR)* is calculated as the ratio of the score for question 1 to the average score for questions 2 and 3, so that

$$PGR = \frac{\textit{Pleased in general own ranking}}{\textit{Average of pleased in general for received and did not receive}} \quad (5)$$

We also calculate *Pleased in General Ratio Relative to Received (PGR-R)* as the ratio of the score given for question 1 to question 2. Thus, the definition can be written as

$$PGR - R = \frac{\textit{Pleased in general own ranking}}{\textit{Pleased in general for those that received a raise}} \quad (6)$$

We hypothesize that a mismatch between one’s evaluation of the salary raise attributes and others’ rankings may cause overall dissatisfaction with the current job and, therefore, may affect intended labor supply behavior. For instance, if a faculty member ranks statement 1 (*pleased in general*) lower than the average of all other faculty who received and did not receive a raise, the *Pleased in General Ratio (PGR)* for this individual is less than 1, and this less-than-1 *PGR* could indicate general relative dissatisfaction with salary raises. In addition, if a faculty member is not pleased with salary raises in general but thinks that all others are more pleased, this perceived difference may create dissatisfaction and a sense of not belonging. As a result, we expect that relative ratios that are less than 1 will signal general dissatisfaction and may affect

intended labor supply changes in the extensive margin. We hypothesize that having less than favorable views on how the salary raises are determined in a job compared to one's colleagues may affect employee happiness, satisfaction and labor supply.

Table 5 shows summary statistics for these two ratios that capture relative attitudes towards raises (The definitions of all variables shown in Table 5 are provided in Table B.1 of Appendix B).

The average *Pleased in General Ratio (PGR)* is 1.082, suggesting that employees are slightly more pleased than the average of those faculty members who received and who did not receive a raise - based on their own perception. *The Average Pleased in General Ratio Relative to Received (PGR-R)* is 0.919, implying that, on average, faculty rank themselves as less pleased with salary raise when compared to only those who received a raise.

Table 5: Summary Statistics for Relative Perception of Salary Raises

Variable	Mean	SD	Minimum	Maximum
Relative attitudes towards salary raises				
Pleased in General Ratio (<i>PGR</i>)	1.082	0.701	0.250	6
Pleased in General Ratio Relative to Received (<i>PGR-R</i>)	0.919	0.644	0.142	6
Relative attitudes coded as discrete variables				
Pleased in General Ratio > 1 (<i>PGR</i> > 1)	0.416	0.495	0	1
Pleased in General Ratio = 1 (<i>PGR</i> = 1)	0.247	0.433	0	1
Pleased in General Ratio < 1 (<i>PGR</i> < 1)	0.336	0.474	0	1
Pleased in General Ratio Relative to Received > 1 (<i>PGR-R</i> > 1)	0.146	0.355	0	1
Pleased in General Ratio Relative to Received = 1 (<i>PGR-R</i> = 1)	0.474	0.501	0	1
Pleased in General Ratio Relative to Received < 1 (<i>PGR-R</i> < 1)	0.379	0.487	0	1

These two relative satisfaction ratios' values range from 0.142 to 6. Values of less than 1 imply that the faculty's ranking of the salary raise attributes are less favorable than her perceptions of others' rankings; values larger than 1 imply that the faculty's ranking of the salary

raise attributes are more favorable than her perceptions of other faculty members' rankings, and values equal to 1 imply perceived similar ranking of salary attributes.

Recoding the relative satisfaction ratios as discrete variables for each of the *PGR* and *PGR-R*, we created 3 dummy variables for values less than, equal to, and greater than one. Table 5 presents the summary statistics for these three dummy variables for each relative satisfaction ratio. Approximately 42%, 25% and 34% of the sample have $PGR > 1$, $PGR = 1$, $PGR < 1$ respectively. The favorable ranking relative to others (42% with $PGR > 1$) declines when compared to those who received a raise, as only 15% of the sample has $PGR-R > 1$, while 47% and 38% of the sample have $PGR-R = 1$ and $PGR-R < 1$.

Table 6 shows the coefficient estimates after Ordered Probit on the two relative perception variables in the "intention to look for a job elsewhere" and "intention to retire earlier" equations.

We estimate two separate equations for each relative ratio by coding these measures as 2 dummy variables for relative ratios greater than 1 and less than 1 (the reference category is: ratio = 1). In each Ordered Probit model, we also include each faculty member's individual perceptions of the salary raise. For instance, when we include $PGR < 1$ and $PGR > 1$ dummy variables, we also include the "*Pleased in General*" variable for that faculty member. In addition, all models include the full set of independent variables that are presented in Table 2.

All four specifications presented in Table 6 provide evidence that faculty who have favorable views on the salary adjustment in general are less likely to look for a job elsewhere and are less likely to retire earlier. Interestingly, one's perception of salary raises relative to that individual's perception of other faculty members' views has an impact on intended labor supply.

Table 6: Ordered Probit Coefficient Estimates Relative Perception of Salary Raises

	Dependent variable: Look for job elsewhere		Dependent variable: Retire Earlier	
Pleased in general	-0.389*** (3.86)	.	-0.197** (2.07)	.
<i>PGR</i> < 1	0.631* (1.90)	.	-0.0959 (0.24)	.
<i>PGR</i> > 1	0.204 (0.50)	.	-0.159 (0.37)	.
Pleased in general	.	-0.372*** (4.78)	.	-0.279*** (3.54)
<i>PGR-R</i> < 1	.	0.757*** (2.75)	.	-0.187 (0.61)
<i>PGR-R</i> > 1	.	-0.0978 (0.30)	.	0.443 (1.20)
Annual salary before raise	0.011 (1.19)	0.014 (1.50)	-0.001 (0.14)	-0.002 (0.25)
COB	0.234 (0.42)	0.191 (0.37)	0.013 (0.03)	0.098 (0.19)
COED	0.333 (0.74)	0.324 (0.71)	0.272 (0.67)	0.343 (0.92)
CONHS	-0.395 (0.79)	-0.246 (0.51)	0.395 (0.83)	0.520 (1.24)
COSE	0.170 (0.43)	0.173 (0.49)	0.379 (0.80)	0.103 (0.25)
Other	-0.821 (0.96)	-0.800 (0.95)	0.203 (0.32)	0.272 (0.41)
Male	0.0322 (0.10)	-0.006 (0.02)	0.008 (0.03)	-0.094 (0.32)
Tenure-track	-0.455 (0.92)	-0.549 (1.34)	0.759 (1.61)	0.726* (1.78)
Tenured	-0.520 (0.64)	-0.372 (0.63)	0.242 (0.38)	0.207 (0.49)
Associate professor	0.178 (0.30)	-0.006 (0.01)	0.006 (0.01)	0.076 (0.25)
Full professor	0.218 (0.31)	-0.224 (0.39)	-0.370 (0.65)	-0.254 (0.63)
Experience	-0.063 (1.04)	-0.035 (0.62)	0.079 (1.18)	0.065 (1.18)
Experience ² /100	0.054 (0.39)	0.0005 (0.00)	-0.123 (0.86)	-0.094 (0.76)
Salary 9-month	-0.226 (0.88)	-0.233 (0.91)	0.431 (1.44)	0.384 (1.39)
<i>N</i>	100	115	94	106

Absolute *t* statistics in parentheses* *p* < 0.10, ** *p* < 0.05, *** *p* < 0.01

Columns 1 and 2 of Table 6 show that those who have $PGR < 1$ (lower rankings for the “*pleased in general with salary raises*” variable compared to how they think their colleagues ranked this variable) are more likely to look for a job elsewhere. This finding provides striking confirmation that the relative perception differential that caused increased motivation for divorce among married couples found by Guven et al. (2012) also affects intended labor supply decisions in higher education. This relative perception deprivation thus exudes a behavioral push across a broad spectrum of individual behavior, just as it manifests in personal domestic relationships and interaction with peers in the workplace.

The results in the last two columns of Table 6 indicate that although those who are “*pleased in general*” with salary raises are less likely to retire sooner, these ratios do not have statistically significant relationships with the intention to retire sooner.

Table 7 shows the marginal effects after the Ordered Probit models of Table 6. The first row of Table 7 provides evidence that those who have less favorable views on salary adjustments in general relative to others ($PGR < 1$) are 9.6 and 3.3 percentage points less likely to choose *strongly disagree* and *disagree* for having plans to look for a job elsewhere, and they are 4.7 and 19 percentage points more likely to choose *agree* and *strongly agree* when asked about having plans to look for a job elsewhere due to salary raises.

The third row of Table 7 confirms the findings presented in the first row. Those with less favorable views on salary raises relative to their perceptions of those who received a raise ($PGR < 1$) are 10.1 percentage points (4.2, 7.3 and 7.9 percentage points) less likely to choose *strongly disagree* (*disagree*, *disagree somewhat*, and *neutral*) and are 5.9 and 20.3 percentage points more likely to choose *agree* and *strongly agree* when asked about having plans to look for a job elsewhere due to salary raises.

Table 7: Marginal Effects after Ordered Probit: Relative Perception of Salary Raises and Intended Labor Supply Responses

	Strongly Disagree (1)	Disagree (2)	Disagree Somewhat (3)	Undecided (4)	Agree Somewhat (5)	Agree (6)	Strongly Agree (7)
<u>Dependent variable: Look for job elsewhere</u>							
Pleased in general ratio							
<i>PGR</i> < 1	-0.0962* (1.94)	-0.0332* (1.88)	-0.0434 (1.57)	-0.0724 (1.43)	0.0113 (0.73)	0.0466* (1.90)	0.187* (1.72)
<i>PGR</i> > 1	-0.0346 (0.51)	-0.0114 (0.51)	-0.0143 (0.50)	-0.0207 (0.48)	0.00718 (0.52)	0.0173 (0.52)	0.0565 (0.49)
Pleased in general relative to those received							
<i>PGR</i> - <i>R</i> < 1	-0.101** (2.48)	-0.042** (2.35)	-0.073** (2.17)	-0.0793* (1.83)	0.0320 (1.58)	0.059** (2.27)	0.203** (2.44)
<i>PGR</i> - <i>R</i> > 1	0.0152 (0.28)	0.00592 (0.29)	0.00973 (0.30)	0.00806 (0.33)	-0.00686 (0.27)	-0.0088 (0.29)	-0.0233 (0.31)
<u>Dependent variable: Retire Earlier</u>							
Pleased in general ratio							
<i>PGR</i> < 1	0.0370 (0.23)	0.00119 (0.28)	-0.001 (0.20)	-0.0198 (0.23)	-0.003 (0.24)	-0.0059 (0.24)	-0.00814 (0.25)
<i>PGR</i> > 1	0.0611 (0.37)	0.00203 (0.38)	-0.00158 (0.31)	-0.0326 (0.37)	-0.00571 (0.36)	-0.0097 (0.38)	-0.0136 (0.38)
Pleased in general relative to those received							
<i>PGR</i> - <i>R</i> < 1	0.0717 (0.61)	0.00244 (0.57)	-0.00353 (0.50)	-0.0377 (0.60)	-0.00615 (0.62)	-0.0105 (0.59)	-0.0163 (0.63)
<i>PGR</i> - <i>R</i> > 1	-0.159 (1.32)	-0.0156 (0.71)	0.00074 (0.10)	0.0768 (1.46)	0.0157 (0.96)	0.0286 (1.01)	0.0526 (0.92)

Absolute *t* statistics in parentheses* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Our results presented in Tables 6 and 7 suggest that faculty members with a less favorable perception of the salary adjustments, compared to what they believe their colleagues think, are more likely to look for jobs elsewhere. Having more favorable views on raises in general, compared to how they think others perceived the salary raises, does not have a statistically significant impact on the intention to look for a job elsewhere. Consistent with Table 6, the bottom panel of Table 7 indicates no statistically significant relationship between relative perception of salary raises in general and intention to retire sooner.

While relative perception of satisfaction with salary raises may impact a faculty member's intended labor supply, our results do not necessarily imply causation. Those who want

to stay at this institution may have incentives to work hard and perform well, which in turn make them better candidates for raises, which in turn makes them more pleased with the institution and more likely to want to stay. In addition, if inherently happier and optimistic people are more productive, they may be more likely to command higher raises. In order to test the robustness of our results, we control for pre-raise annual salary of faculty in all estimations. By doing so we arguably address the potential endogeneity of happiness, relative happiness with raises, and employee retention. The main assumption is that if happiness, productivity, and income are correlated, pre-raise annual income should summarize employee happiness, satisfaction and optimism.

5. Conclusion

In this study we explore the relationship between salary raises, employee satisfaction and labor market responses of employees. This study investigates a novel hypothesis that the gap between the employee's satisfaction with salary raises and that employee's perceptions of others' satisfaction with raises may have an influence on her own labor supply behavior. We focus on how the relative deprivation from comparing one's own perceptions of a salary raise with others' may impact employee turnover and retention. The perceived relative satisfaction and the employee's perception of the institution's relative ranking of her value to the organization may serve as catalysts for employee action. A mismatch between a faculty member's personal ranking of the salary raise and her perception of colleagues' rankings may give rise to dissatisfaction, which may make an employee more likely to look for a job elsewhere.

Our results indicate that faculty members who receive raises, regardless of the actual amount of these raises, are less likely to intend to look for a job elsewhere and less likely to retire sooner, compared to those who do not receive a raise, suggesting the importance of salary raises

on labor supply behavior. In addition, we find that those who received a higher raise percentage are less likely to consider looking for a new job, while a larger percentage of salary increase does not have any statistically significant impact on the intent to retire sooner.

The ordered probit results suggest that the impact of relative perception of salary raises on intended labor supply outcomes is asymmetric. Faculty with a less favorable perception of salary adjustments in general, compared to what they believe their colleagues think, are more likely to look for jobs elsewhere, holding their perceptions of the salary raises constant. However, having more favorable views on salary raises in general, compared to how they think others perceive their own salary raises, does not have a statistically significant impact on the intent to look for a job elsewhere.

In this study, we aim to shed light on an important issue in academia: retention of experienced and valuable faculty. Our results indicate that monetary rewards in the form of salary raises do have an impact on faculty retention; however, the perception of salary raises as fair is also important to ensure low faculty turnover. We find that this perceived relative deprivation decreases employee retention. With the high cost of job turnover, our findings suggest that employers would benefit from devoting resources toward ensuring that salary and raise-determining procedures are generally perceived by the vast majority of employees as being fair, whether or not they are actually based on an accurate reward system for high performance.

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APPENDIX A

Description of faculty raises in spring 2013:

Increases in faculty compensation for the 2012-13 academic year were paid with the April 1st check. Raises were limited to faculty whose department chairs had rated them as at least meeting expectations in the spring 2012 annual performance review, which was based upon calendar year 2011 accomplishments. The process for determining raises was:

- a. Each faculty member's salary was measured against the market median of 43 institutions considered as peer institutions, to determine Fair Market Value (FMV). Then adjustments were made for time in grade, so that those recently promoted were below the median (in this step) and those with more experience were above the median. The estimate of the value of each year's experience was calculated by subtracting the median for an assistant professor from the median for a full professor and dividing by 24 years (to equal 7 years at assistant, 7 at associate, 10 at full). The ultimate goal, over time, was that each "standard" faculty member would earn 100% of this median.
- b. Some faculty were rated as "excellent," or, if deemed as even better performers, as "exemplary." For them, the ultimate goal was to take earnings to 125% of the median. The administration's message was that meritorious performance should result in higher pay. Meanwhile, "standard" performance in a field of self-selecting over-achievers was recognized as an achievement.
- c. The salary goal was measured against actual pay; the gap, if any, was measured and aggregated. In 20 - 25% of cases, faculty were already paid approximately FMV. They did not receive raises that year.
- d. Total funding available in the budget was limited to expected revenues minus other expected necessary expenses, significantly less than the aggregate salary gap amount.

Funds were allocated pro-rata, based on pay gap, to those whose performance was rated at least standard. The monthly increase began with the April 1st paycheck, with a one-time make-up check paid March 29 for roughly 6 times that amount, to provide pay retroactively for the October through March paychecks. While not everyone was brought up to FMV that year, this basic system was expected to remain in place to reduce inequities and bring all faculty salaries close to FMV, as the university was able.

- e. Everyone who was considered at least satisfactory was brought up to at least 81.8% of FMV.

APPENDIX B

TABLE B.1

Variable Definitions

Male	Dummy for male.
Status	Dummies for tenure-track, tenured, and other.
Rank	Dummies for assistant professor, associate professor, and full professor.
College	Dummies for COB, COE, CNHS, COSE and other.
Experience	Years of experience
Salary 9-month	Dummy if receiving salary on a 9-month basis
Annual salary before raise	Annual salary before the salary raise was implemented, in \$10,000 intervals starting from \$30,000 or less, up to \$190,000 or more.
Received raise	Dummy for having received a raise.
Raise percent	Salary raise received as % of the pre-raise salary: 0% (no raise received), 1%, 2%, 3%... 40%, 40% or more.
Look for job elsewhere	Response to the statement, “As a result of this year’s changes in faculty salaries, I am more likely to seek employment elsewhere,” coded in 7-point Likert scale with the following choices: Strongly Disagree, Disagree, Disagree Somewhat, Neutral, Agree Somewhat, Agree, and Strongly Agree.
Retire Sooner	Response to the statement, “As a result of this year’s changes in faculty salaries, I am more likely to retire sooner than I had been planning,” coded in 7-point Likert scale with the following choices: Strongly Disagree, Disagree, Disagree Somewhat, Neutral, Agree Somewhat, Agree, and Strongly Agree.
Happy now	Faculty response to the statement, “All things considered, on a scale of 1 to 5, how happy you are as a whole right now?” coded in 5-point Likert scale with the choices ranging from 1 = Minimum happiness to 5 = Maximum Happiness.

Happy now-friends' rankings	Faculty response to the statement, "Imagine that we asked one of your friends to rate how happy you are on a scale of 1 to 5. How happy would this friend say you are now?" coded in 5-point Likert scale with the choices ranging from 1 = Minimum happiness to 5 = Maximum Happiness
Happy before	Faculty response to the statement, "All things considered, on a scale of 1 to 5, how happy are you as a whole looking back in January 2013?" The responses are coded in 5-point Likert scale with the choices ranging from 1 = Minimum happiness to 5 = Maximum Happiness.
Happy before-friends' rankings	Faculty response to the following statement "Imagine that we asked one of your friends to rate how happy you were looking back in January 2013 on a scale of 1 to 5. How happy would this friend say you were?" coded in 5-point Likert scale with the choices ranging from 1 = Minimum happiness to 5 = Maximum Happiness.

Attitudes towards salary raises:

All responses to the following attitudes towards salary raises questions are coded in 7-point Likert scale with these choices: Strongly Disagree, Disagree, Disagree Somewhat, Neutral, Agree Somewhat, Agree, and Strongly Agree.

Pleased in general	Response to the statement, "In general, I am very pleased with the changes in faculty salaries," coded in 7-point Likert scale.
Pleased in general - those who received	Response to the statement, "In general, my colleagues who RECEIVED A RAISE are very pleased with the changes in faculty salaries," coded in 7-point Likert.
Pleased in general - those who did not receive	Response to the statement, "In general, my colleagues who DID NOT RECEIVE A RAISE are very pleased with the changes in faculty salaries," coded in 7-point Likert scale.

Relative attitudes towards salary raises

Pleased in General Ratio (*PGR*) *Pleased in General Ratio (PGR)* calculated as the ratio of the score given to "Pleased in general" to the average of "Pleased in general - those who received" and "Pleased in general - those who did not receive. "

$$PGR = \frac{\textit{Pleased in general own ranking}}{\textit{Average of pleased in general for received and did not receive}}$$

Pleased in General Ratio Relative to Received (*PGR-R*) *Pleased in General Ratio Relative to Received (PGR-R)* is the ratio of the score for "Pleased in general" to the "Pleased in general - those who received."

$$PGR-R = \frac{\textit{Pleased in general own ranking}}{\textit{Pleased in general for those that received a raise}}$$